LDK 4502

HDTV Camera Base Station

User's Guide and Tech Manual

3922 496 48741 St.24

PHILIPS

Declaration of Conformity

We, Broadcast Television Systems Camera's B.V., Kapittelweg 10, 4827 HG Breda, The Netherlands declare under our sole responsibility that this product is in compliance with the following standards:

- EN60065 : Safety
- EN55103-1 : EMC (Emission)
- EN55103-2 : EMC (Immunity)

following the provisions of:

a. the Safety Directives 73/23//EEC and 93/68/EEC
b. the EMC Directives 89/336/EEC and 93/68/EEC

FCC Class A Statement

This product generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause interference to radio communications.
It has been tested and found to comply with the limits for a class A computing device pursuant to Subpart J of part 15 of FCC rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment.
Operation of this product in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

Copyright

Camera
Base Station

User's Guide

Contents

About This Manual

Service policy
The Camera Base Station is a sophisticated base station containing state-of-the-art electronic components which are designed to provide long-life operation without the need for maintenance. With this in mind, the service policy of Philips Digital Video Systems endeavours to ensure that help will be quickly on hand in the unlikely event of anything going wrong. The guiding principles of the Philips Digital Video Systems first line maintenance philosophy are speed and cost effectiveness. First line maintenance is dedicated to keeping your base station operational, despite a fault, by module replacement and the replacement of minor mechanical parts by the user.

Purpose of this manual
The provision of correct information is the first step in ensuring the operational integrity of the base station. Information on the operation of the base station is contained in Section 3 of the manual.

This User's Guide is an integral part of the service policy. It ensures that you will be able to operate, install and set-up your base station to meet the requirements of your environment. The information on the installation of the base station is contained in Section 2 of the manual. The remaining sections of the manual provide first line service information so that suitably qualified service personnel can detect and repair faults, normally by module replacement.

Because of the complexity of some of the components, second line service can only be carried out at the specially equipped service centres and information concerning second line maintenance is not supplied
in this manual.

Intended audience
The manual is intended as a guide to those with a working knowledge of camera systems and installation techniques. The first line detection and repair of faults requires a general knowledge of test and measurement techniques.

Structure of this manual
The manual is divided into eight different sections:

Section 1: Safety Instructions
Outlines the safety precautions that must be taken when using the base station.

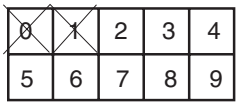
Section 2: Installation
Gives instructions on the integration of the base station into the operating environment and the customization of certain functions.

Section 3: Operating instructions
Explains how to program the menu system for your personal preferences. The menu structure and the methods of function selection are also explained. An appendix to this section lists all the menu functions.

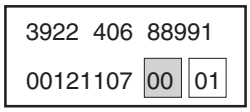
Section 4: Replacements
Gives information on the replacement of components at first line level.

Section 5: Diagnostics
Gives a guide to diagnostic messages and procedures for fault-finding.

Identification and Status
To indicate the status of a drawing, a box with the numbers 0 to 9 is shown in the bottom-right of the drawing. The number that is crossed-out is the status number of the drawing. For example, in the illustration below, the status is 1.



A sticker is used on the units themselves to identify them and to indicate their status. For example, in the illustration below, the top line is the 12-digit number that identifies the unit type.



The first four digits of the number on the second line represent a date code (year, week); the next four digits represent the serial number for that week.

The number in the grey area indicates the status of the unit. The last two digits represent the number that will be given to the next status. However, if these two digits are contained in a box, then this is the current status. For example, in the illustration above, the current status of the unit is 01.

Section 1

Safety Instructions

This section outlines the precautions that must be taken into account when using the camera base station.

Contents

Safety Summary

This informaton is intended as a guide for trained and qualified personnel who are aware of the dangers involved in handling potentially hazardous electrical/electronic equipment. It is not intended to contain a complete list of all safety precautions which should be observed by personnel in using this or other electronic equipment.

The installation, maintenance and service of this equipment involves risks both to personnel and equipment and must be performed only by qualified personnel exercising due care.

Personnel engaged in the installation, operation, maintenance or servicing of this equipment are urged to become familiar with First Aid theory and practises.

During installation and operation of this equipment, local building safety and fire protection standards must be observed.

Before connecting the equipment to the power supply of the installation, the proper functioning of the protective earth lead of the installation needs to be verified.

Whenever it is likely that safe operation is impaired, the apparatus must be made inoperative and secured against any unintended operation. The appropriate servicing authority must then be informed. For example, safety is likely to be impaired if the apparatus fails to perform the intended function or shows visible damage.

This product has been designed and tested according to EN60065.

Cautions and Warnings

When performing service, be sure to read and comply with the warning and caution notices appearing in the manuals. Warnings indicate danger that requires correct procedures or practices to prevent death or injury to personnel. Cautions indicate procedures or practices that should be followed to prevent damage or destruction to equipment or property.

WARNING

THE CURRENT AND VOLTAGES PRESENT IN THIS EQUIPMENT ARE DANGEROUS. ALL PERSONNEL MUST AT ALL TIMES FOLLOW THE SAFETY REGULATIONS.

ALWAYS DISCONNECT POWER BEFORE REMOVING COVERS OR PANELS.

ALWAYS DISCHARGE HIGH VOLTAGE POINTS BEFORE SERVICING.

NEVER MAKE INTERNAL ADJUSTMENTS, PERFORM MAINTENANCE OR SERVICE WHEN ALONE OR WHEN FATIGUED.

IN CASE OF AN EMERGENCY ENSURE THAT THE POWER IS DISCONNECTED.

ANY INTERRUPTION OF THE PROTECTION CONDUCTOR INSIDE OR OUTSIDE THE APPARATUS, OR DISCONNECTION OF THE PROTECTIVE EARTH TERMINAL, IS LIKELY TO MAKE THE APPARATUS DANGEROUS. INTENTIONAL INTERRUPTION IS PROHIBITED.

FOR SAFETY REASONS THE CPU MUST BE MOUNTED IN A 19-inch RACK WHICH HAS SAFETY COVERS ACCORDING TO IEC65.

WHEN TWO CPUs ARE MOUNTED ABOVE EACH OTHER THE MINIMUM DISTANCE BETWEEN THEM MUST BE 50MM OR THE RACK MUST BE FORCE-AIR COOLED.

USE ONLY FUSES OF THE TYPE AND RATING SPECIFIED.

CAUTION

To prevent risk of overheating, ventilate the product correctly.

Connect the product only to a power source with the specified voltage rating.

Only connect a Triax cable from the LDK 6 camera family to an LDK 6 CPU. Never connect it to any other base station.

Never connect the Triax cable from a camera to a CPU of a different family; never connect the LDK family to the TTV family.

Do not allow system ground currents to exceed 1.5A in the outer shield of the triax cable or 0.2A in other cable shields.

It is strickly prohibited to short circuit the inner and outer shields of a triax cable used to connect a camera to a base station.

Symbol	Colour	Explanation
	Red	High voltage terminal at which a voltage, with respect to an other terminal, exists or may be adjusted to 1000V or more.
	Yellow/Black	Live part.
	Yellow/Black	This marking indicates that the operator must refer to an explanation in the Instruction Manual, or that a specific component must be replaced by the component specified in the documentation for safety reasons.
	White/Black	Protective earth (ground) terminal.

Cathode ray tubes

Components marked ⚠ on the circuit diagram are critical for safety and include those specified to comply with X-ray emission standards for units using cathode ray tubes and those specified for compliance with various regulations regarding spurious radiation emission.

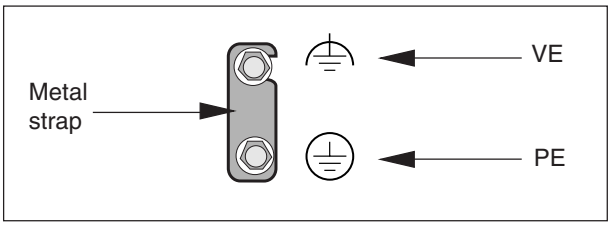
When servicing units that use cathode ray tubes (CRTs), the cathode ray tubes themselves, the high voltage circuits and related circuits are specifically chosen so that they comply with recognized codes pertaining to X-ray emission.

Consequently, when servicing, replace the cathode ray tubes and other parts with specified parts only. Do not attempt to modify these circuits as any unauthorized modification can increase the high voltage value and cause X-ray emission from the cathode ray tube.

Handle the cathode ray tube only when wearing shatterproof goggles and after discharging the high voltage completely.

Earthing

The rear of a CPU has two separate screw terminals for protective earth ⏚ (PE) and video earth (VE).



These are normally connected by a metal strap. The protective earth terminal is internally connected to the protective earth conductor of the power cable. If required, the central earth connection wire of the studio can be connected to terminal PE.

In normal circumstances the connection between the protective earth and the video earth should not be broken.

The metal strap may be removed only if the studio (or OB van) is equipped with separate protective and video earth systems. Under these circumstances the video earth terminal must be connected to the central functional earth potential (video earth) of the studio. This earth potential should have functional protective and noiseless earth (FPE) qualities as stated in the VDE regulation 0800/part2. A low impedance interconnection of both earth conductors must be provided at the central studio earthing point.

WARNING

THE UNIT MUST ALWAYS BE CONNECTED TO PROTECTIVE EARTH.

Mains Lead Wiring for UK Users

The wires in the mains lead are coloured in accordance with the following code:

GREEN AND YELLOW	-	EARTH
BLUE	-	NEUTRAL
BROWN	-	LIVE

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:

- The wire coloured GREEN AND YELLOW must be connected to the terminal on the plug marked with the letter E or by the safety earth symbol ⏚ or coloured GREEN or GREEN AND YELLOW.
- The wire coloured BROWN must be connected to the terminal marked with the letter L or coloured RED.
- The wire coloured BLUE must be connected to the terminal marked with the letter N or coloured BLACK.

Ensure that your equipment is connected correctly - if you are in any doubt consult a qualified electrician.

Section 2

Installation

This section provides information which is relevant when the base station is to be used for the first time. Packing and unpacking instructions together with information on the integration of the base station into your studio system are provided. The procedures for the customization of certain hardware functions and connector information is also provided.

Contents

Unpacking/Transport/Storage

Unpacking

Inspect the shipping container for evidence of damage immediately after receipt. If the shipping container or cushioning material is damaged, it should be kept until the contents of the shipment have been checked for completeness and the units have been checked mechanically and electrically.

The shipping container should be placed upright and opened from the top.

Remove the cushioning material and lift out the contents.

The contents of the shipment should be checked against the packing list. If the contents are incomplete, if there is mechanical damage or defect, or if the units do not perform correctly when unpacked, notify your Philips Digital Video Systems sales or service centre within eight days. If the shipping container shows signs of damage or stress, notify the carrier as well.

Transport

If a unit is being returned to Philips Digital Video Systems for servicing, try to use the containers and materials of the original packaging. Attach a tag indicating the type of service required, return address, model number, full serial number and the return number which will be supplied by your Philips Digital Video Systems service centre.
If the original packing can no longer be used, the following general instructions should be used for repacking with commercially available materials:

a. Wrap unit in heavy paper or plastic.

b. Use strong shipping container.

c. Use a layer of shock-absorbing material around all sides of the unit to provide firm cushioning and prevent movement inside container.

d. Seal shipping container securely.

e. Mark shipping container FRAGILE to ensure careful handling.

Storage

The unit may be stored (non-operating condition) in environments within the following limits:

Temperature:	-40°C to +70°C
Humidity:	Max. 90% (non condensing)
Altitude:	max. 50.0000 feet

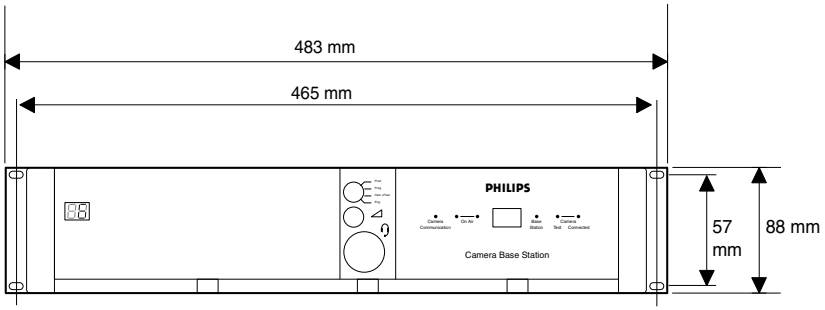
When stored, the unit should be protected from temperarure extremes which may cause condensation, and should also be protected from high levels of dust.

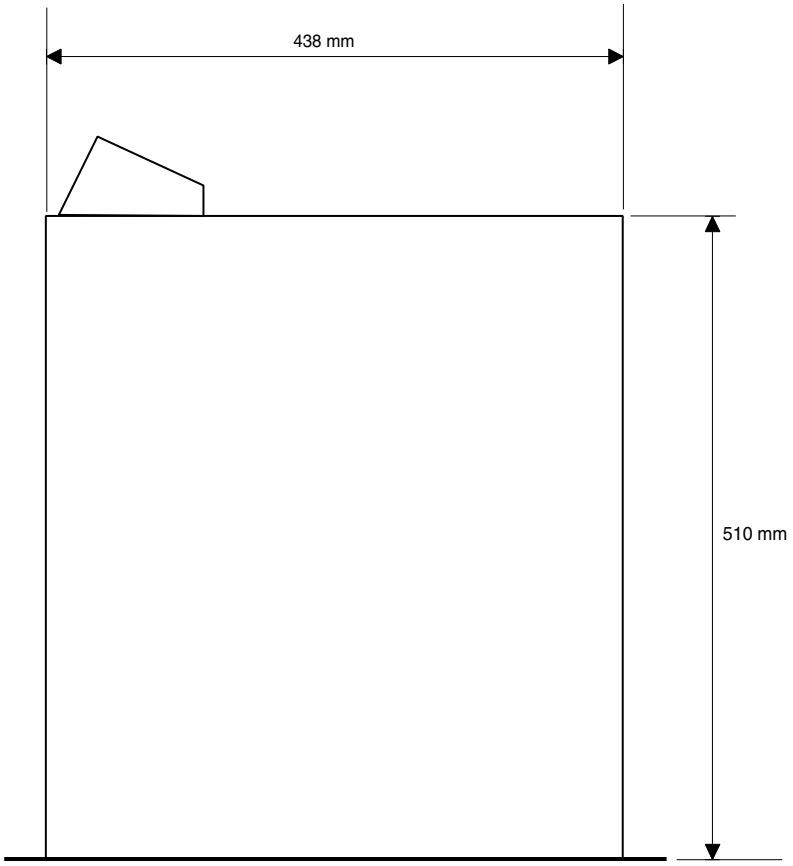
Dimensions

Dimensions:

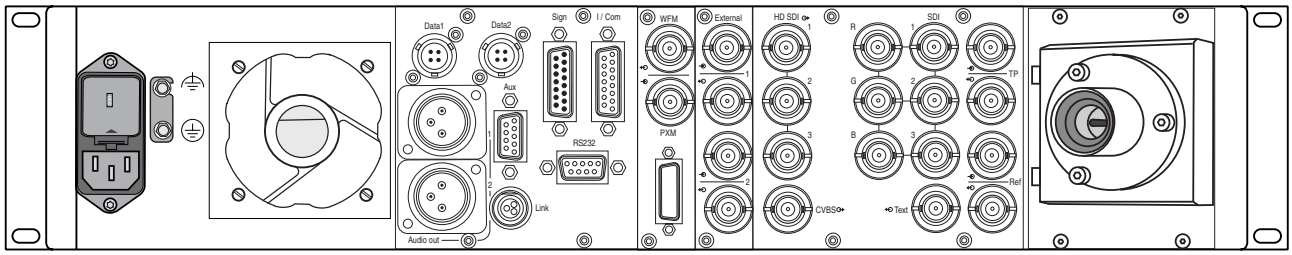
Width:	438 mm
Height:	88 mm
Depth:	510 mm max. (excluding triax connector + cable)

Weight: approx. 17kg.



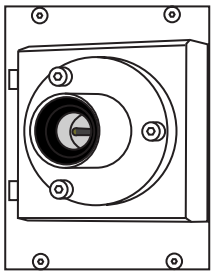


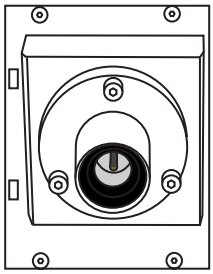
Connectors and Cables

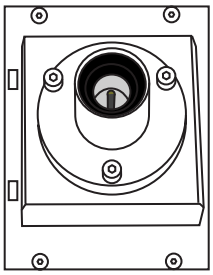


Triax connector orientation

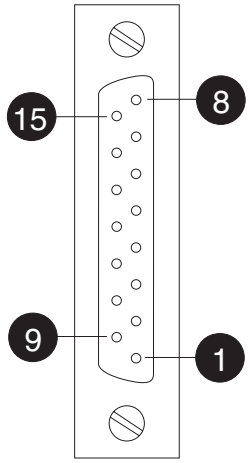
The triax connector can be mounted to suit your cable run.







Intercom Connector (I/Com) - Panel View



X374	**15-pin female**
Panel part number	2411 022 06239
Cable part number	2411 022 05168

15-pin female, shielded cable

1. Prod. out (4-wire out, 2-wire in/out)
2. Prod. in (4-wire only)
3. Prod. in shield (4-wire only)
4. ENG in (4-wire only)
5. ENG out (4-wire out, 2-wire in/out)
6. Progr. in (4-wire only)
7. Progr. in shield (4-wire only)
8. Housing
9. prod. out return (4-wire out, 2-wire in/out)
10. prod. in return (4-wire only)
11. ENG in shield (4-wire only)
12. ENG in return (4-wire only)
13. ENG out return (4-wire out, 2-wire in/out)
14. Progr. in return (4-wire only)
15. Housing

Shield of cable to the pin marked housing.

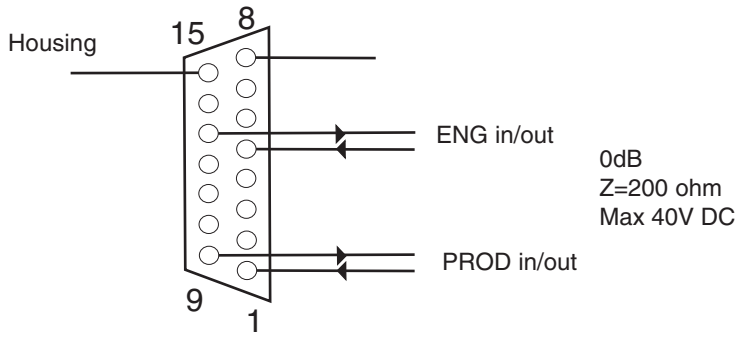
4-wire:

Output signals: level +6dBu or 0dBu selectable output impedance 50 ohm (max), symmetrical

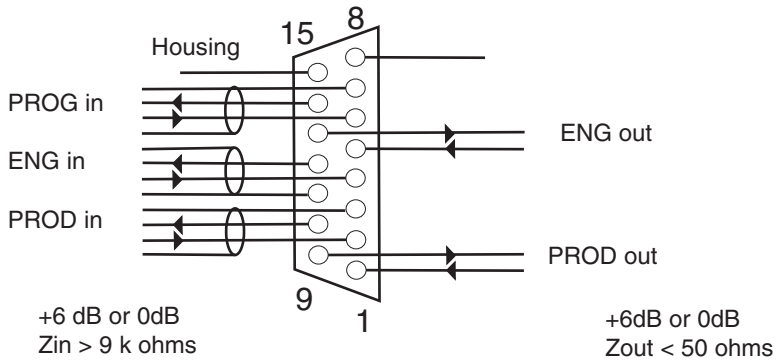
Input signals: level +6dBu or 0dBu selectable impedance 9 Kohm (min), symmetrical

2-wire: level 0dBu
load impedance: 200 ohm
maximum DC level = 40 V

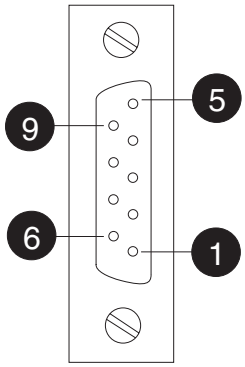
2 - Wire configuration



4 - Wire configuration



RS232 Connector (RS232) - Panel View

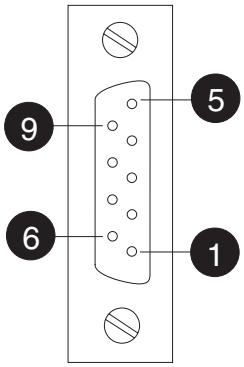


1. SPARE
2. RS-RXD - Receive Data
3. RS-TXD - Transmit Data
4. RS-DTR - Data Terminal Ready
5. RS-DGND - Signal Ground
6. RS-DSR - Data bSet Ready
7. RS-RTS - Request To Send
8. RS-CTS - Clear To Send
9. +12V

X7 Data Board 9-pin male
X379 Signal Connector Board

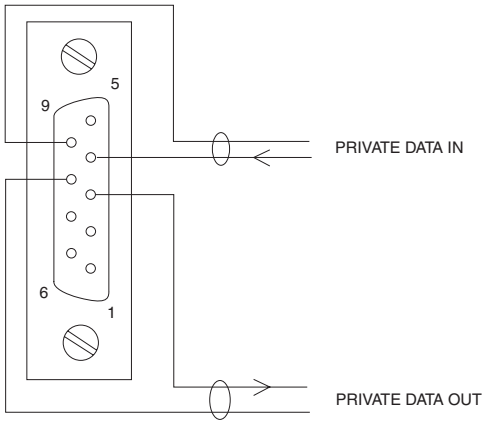
Panel part number 2422 025 12962
Serial Interface Cable 4822 872 03413

Auxiliary Connector (Aux) - Panel View



X371 **9-pin female**

Panel part number 2411 022 06238
Cable part number 2411 022 05284



9-pin female, shielded cable

1. +5V
2. AN 0
3. PRIVATE DATA OUT
4. PRIVATE DATA IN
5. Housing (Shield of cable to this pin)
6. GND
7. AN 1
8. PRIVATE DATA OUT RET
9. PRIVATE DATA IN RET

Shield of cable directly to the connector housing.

AUX (private data BS - CAM)

: "0"= 0V +/- 0.5V

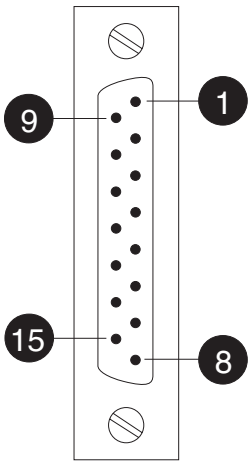
: "1"= 5V +/- 0.5V

Rout = 150 ohm

Baudrate typ 2400 bits/sec
max 4800 bits/sec

Duty cycle difference between input and output is max 5%

Signalling Connector (Sign) - Panel View



X 370 15-pin male; panel view

Panel part number 2411 022 05292
Cable part number 2411 022 06157

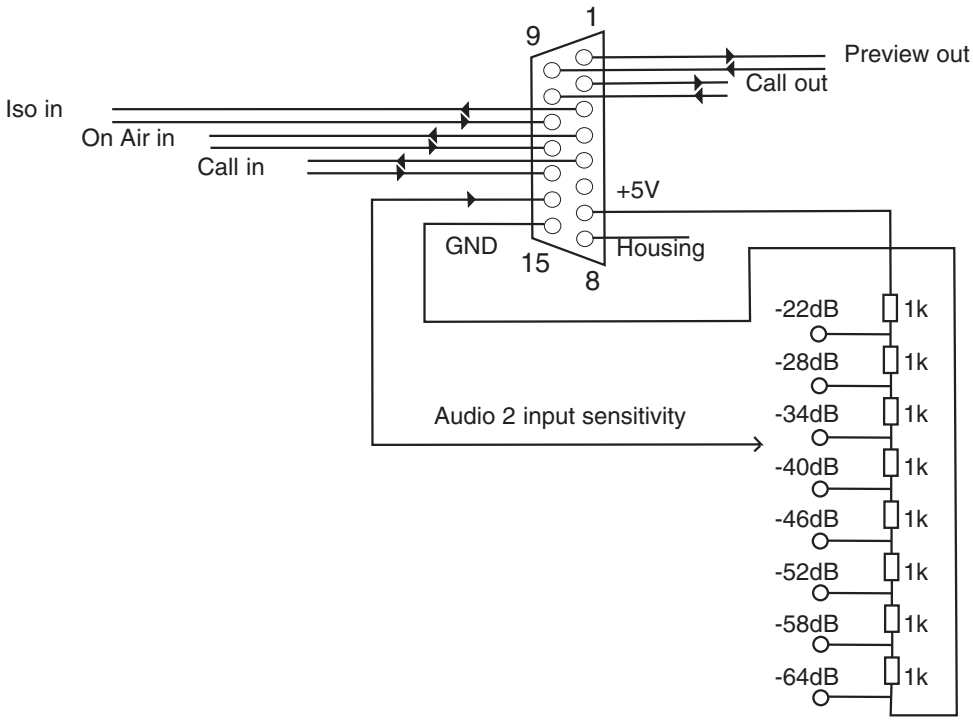
15-pin male, shielded cable

1. Prev. out ext. (relay contact < 10 ohm)
2. Call out ext. (relay contact < 10 ohm)
3. Iso in ext. (dry contact)
4. On-Air in ext (dry contact)
5. Call in ext. (dry contact)
6. Audio 1 level (analogue input voltage 0V to +5V, see figure below)

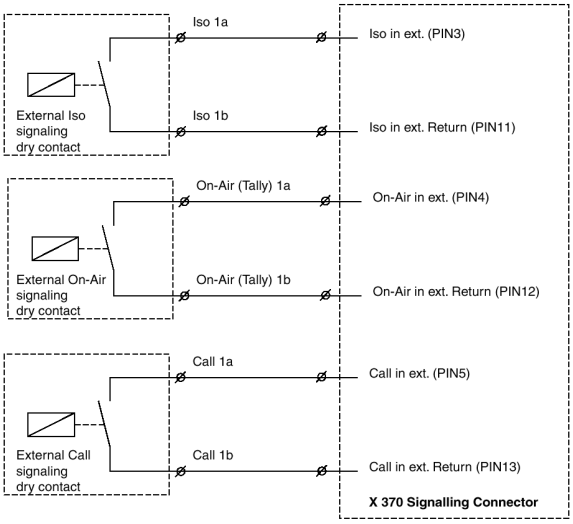
   - 64 dB ------ 0V
   - 58 dB ------ +0.7V
   - 52 dB ------ +1.3V
   - 46 dB ------ +1.9V
   - 40 dB ------ +2.5V
   - 34 dB ------ +3.1V
   - 28 dB ------ +3.7V
   - 22 dB ------ +4.3V

7. +5 Vdc; OCP
8. Housing
9. Prev. out ext. return
10. Call out ext. return
11. Iso in ext. return
12. On-Air in ext. return
13. Call in ext. return
14. Audio 2 level (see pin 6)
15. GND

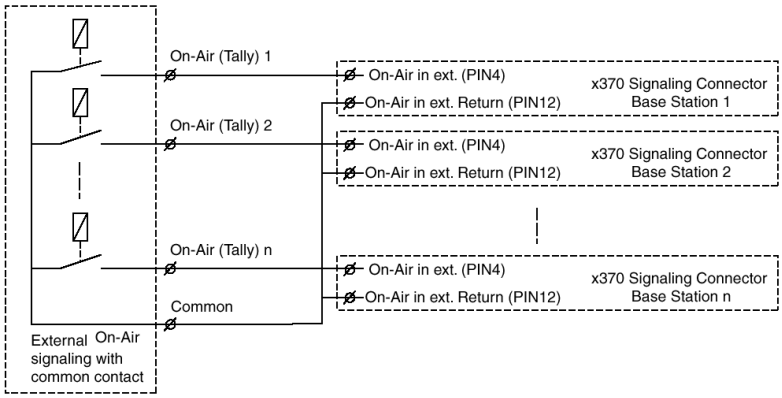
Shield of cable to the pin marked housing.



When the Iso, On-Air or Call signal is provided by a dry contact, connect the outputs to the signalling connector as shown in this figure.

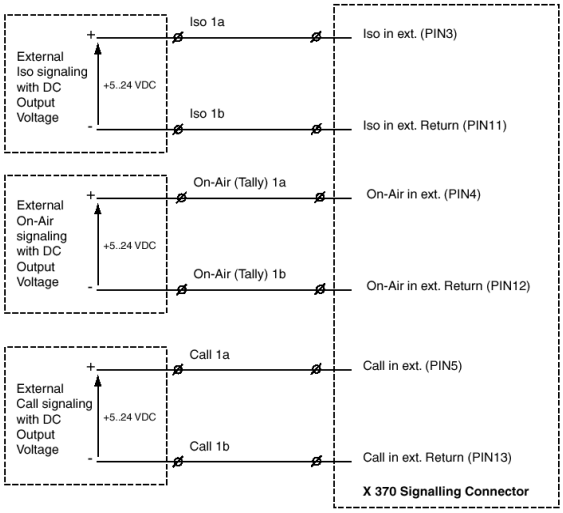


When the Iso, On-Air or Call signal is provided by a dry contact with a common return connector connect the outputs to the signalling connector as shown in this figure.

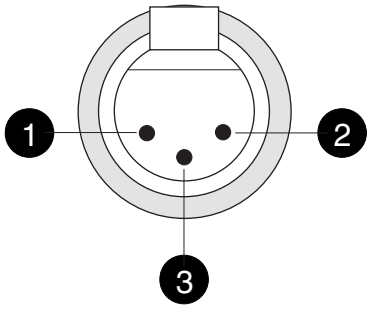


When the Iso, On-Air or Call signal is provided by a DC output voltage connect the outputs to the signalling connector as shown in this figure.

Notes: The Iso, On-Air and Call signal is off if the input voltage is 5..24 VDC. The Iso, On-Air and Call signal is on if the input voltage is 0VDC. The X370 Signalling inputs are not galvanically separated. We recommend using dry contacts and when these are not available using galvanically separated DC voltage outputs.



Audio Connector - Panel View



1. shield
2. Audio +
3. Audio -

Microphone impedance >200 ohm

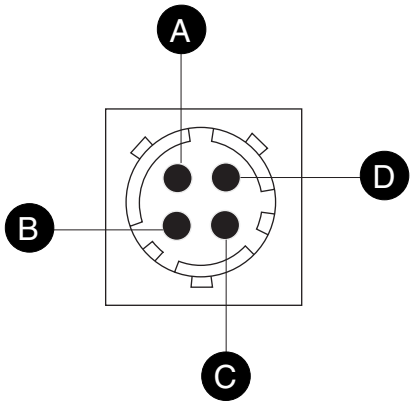
Sensitivity remote controlled via base station:

range: -64 to -22 dBu.

Shield of cable directly to the connector housing.

X338/X339	**XLR 3-pin male**
Panel part number	2422 026 02985
Cable part number	2432 026 00185

Data Connector - Panel View



4-pin male, shielded cable

A. Data

B. Data not

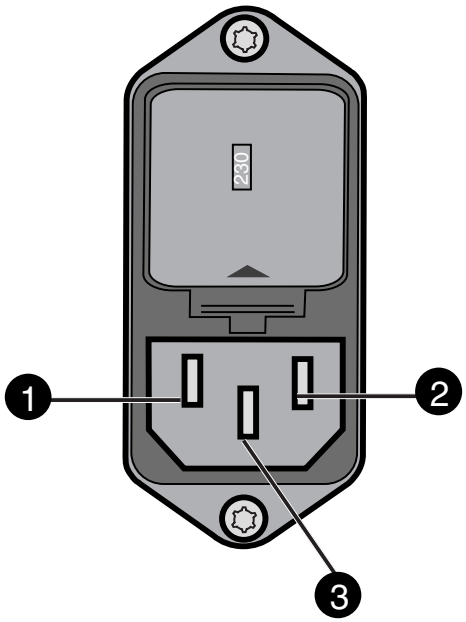
C. Not connected

D. Shield

Shield of cable to the pin marked housing.

X368 / X378	**4-pin male**
Panel part number	2411 020 11367
Cable part number	2411 020 12025

Mains Input Connector - Panel View



Eurostyle 3-pin male

1. Neutral
2. Line
3. Earth

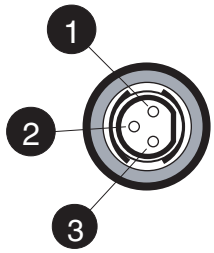
Mains input voltage: 230 Vac or 115 Vac

Fuses: 4AT 10AT

Mains frequency: 47 to 63 Hz

Power consumption: 320 Watt

Link Connector - Panel View



3-pin female, shielded cable

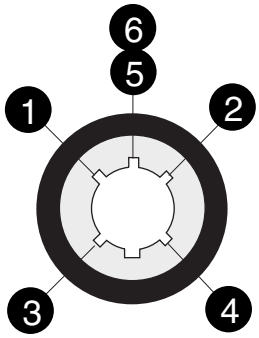
1. Data link
2. Data link N
3. Housing

Shield of cable to the pin marked housing.

FOR FUTURE USE ONLY

X380	**Fischer 3-pin female**
Panel part number	3922 040 02881
Cable part number	2432 026 00274

Headset Connectors - Panel View



X574 **Tuchel 5-pin female**
Panel part number
Cable part number

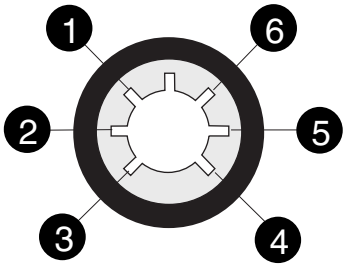
Headset Connector

Tuchel 5-pin female

1. Telephone left
2. Telephone return
3. Microphone
4. Microphone return

5/6.Telephone right

Shield of cable directly to the connector housing.

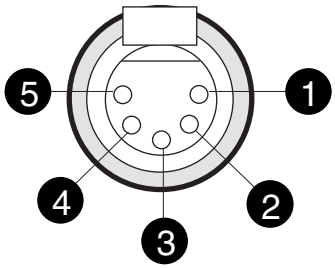


X574 **Tuchel 6-pin female**
Panel part number
Cable part number

Tuchel 6-pin female

1. Telephone left
2. Telephone return
3. Microphone
4. Microphone return
5. Telephone right
6. Telephone return

Shield of cable directly to the connector housing.



X574 **XLR 5-pin female**
Panel part number 2422 026
Cable part number

XLR 5-pin female

1. Microphone return
2. Microphone
3. Telephone return
4. Telephone left
5. Telephone right

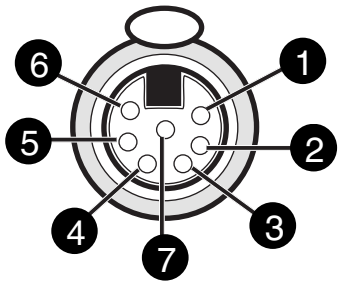
Microphone level -64dBu

Microphone impedance 200 ohm

Telephone level +6dBm nominal

Telephone output impedance <50 ohm

Shield of cable directly to the connector housing.

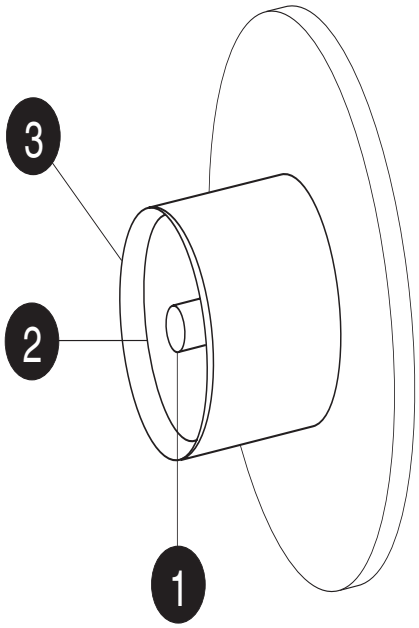


X574 **XLR 7-pin female**
Panel part number 3922 494 16571
Cable part number

XLR 7-pin female

1. not connected
2. Return
3. ENG Telephone right
4. Return
5. ENG Telephone left
6. Return
7. ENG Microphone

Triax Connectors - Panel View



X540	**Fischer male**
Panel part number	3922 407 30531
X540	**Trilock female**
Panel part number	3922 407 30551
X540	**ARD female**
Panel part number	3922 407 30571
X540	**LEMO 3 female**
Panel part number	3922 407 30631
X540	**LEMO 4 female**
Panel part number	3922 407 30591
X540	**LEMO BBC male**
Panel part number	3922 407 30611

The panel partnumbers are the connectors including the assembly.

Triax Connectors

Fischer

1.	Inner pin:	Signals + power
2.	Inner shield:	Return
3.	Outer shield:	Base Station housing

Trilock

1.	Inner pin:	Signals + power
2.	Inner shield:	Return
3.	Outer shield:	Base Station housing

ARD

1.	Inner pin:	Signals + power
2.	Inner shield:	Return
3.	Outer shield:	Base Station housing

Lemo 3

1.	Inner pin:	Signals + power
2.	Inner shield:	Return
3.	Outer shield:	Base Station housing

Lemo 4

1.	Inner pin:	Signals + power
2.	Inner shield:	Return
3.	Outer shield:	Base Station housing

Lemo BBC

1.	Inner pin:	Signals + power
2.	Inner shield:	Return
3.	Outer shield:	Base Station housing

The intercom functions available are determined by the configuration of the base station. The Headset board and the Audio/Intercom board are optional. This results in four possible configurations:

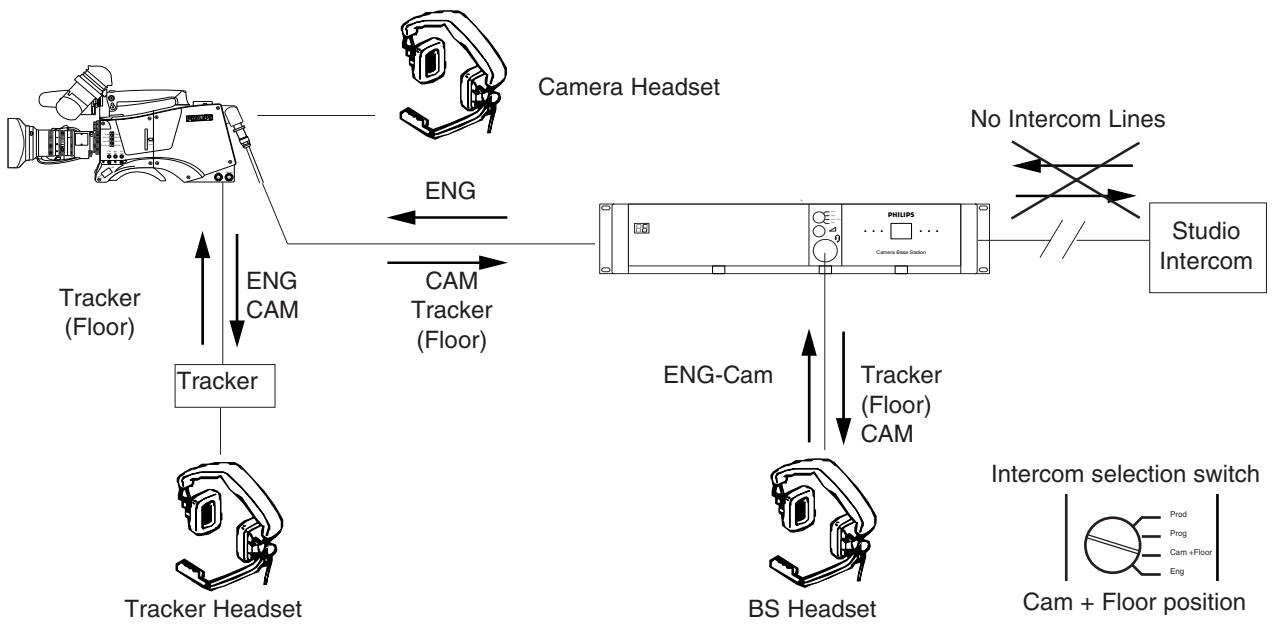
1. Headset board present - Audio/Intercom board absent
2. Headset board absent - Audio/Intercom board present
3. Both boards present
4. Both boards absent

If both boards are absent then there are no intercom facilities available. The other configurations are shown in the figures below.

Depending on your camera configuration, consult the cross-reference tables to see which menu positions should be used for both camera and base station menus for routing the intercom signals.

Headset board present - Audio/Intercom board absent in Base Station

1. Headset board present - Audio/Intercom board absent



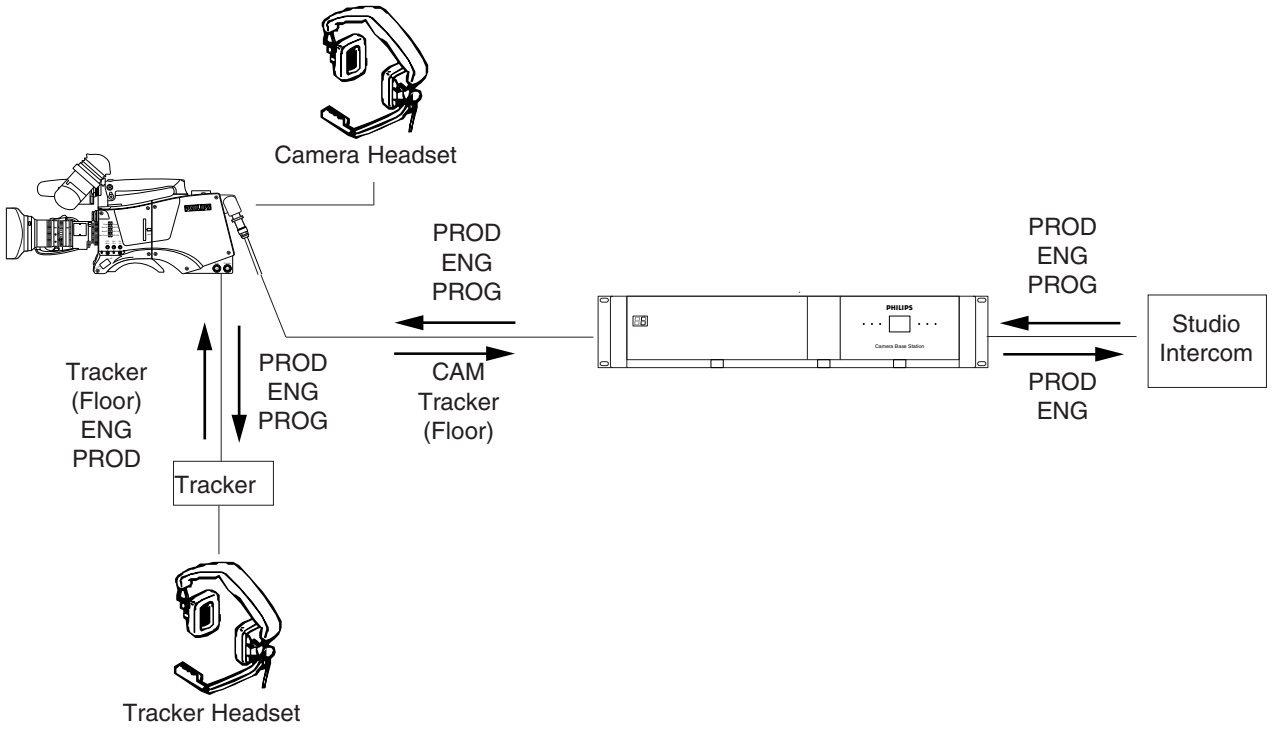
Headset board present - Audio/Intercom board absent in Base Station

FROM \ TO	Tracker Headset	Camera Headset	BS Headset
Tracker Mic (Phantom Power !)	Tracker Output = ENG Channel Camera system menu: Install \ Intercom \ Track mic to ≠ Off Install \ Intercom \ Track Source = Side	Camera system menu: Install \ Intercom \ Track mic to ≠ Off Install \ Intercom \ Cam track ≠ Off Install \ Intercom \ Cam level > 0	Camera system menu: Install \ Intercom \ Track mic to ≠ Off BS system menu: Audio/Intercom \ ENG headset \ Tracker to headset = On Audio/Intercom \ ENG headset \ Tracker volume > 0 BS front: Intercom selection switch = Cam + Floor
Camera Mic (Phantom Power !)	**CAM Channel** Tracker Output = Camera Channel Cam Mic = On* Camera system menu: Install \ Intercom \ Cam Mic to = CH1 **ENG Channel** Tracker Output = ENG Channel Camera system menu: Install \ Intercom \Track Source = Side Install \ Intercom \ Cam Mic to = Ch2	Camera system menu: Install \ Intercom \ Cam Mic = On Install \ Intercom \ Side tone > 0	Camera system menu: Install \ Intercom \ Cam mic to = CH1 *(If = CH2, then monitoring via floor)* BS system menu: Audio/Intercom \ ENG headset \ Cam to headset = On Audio/Intercom \ ENG headset \ Cam volume > 0 Audio/Intercom \ ENG headset \ Floor to headset = On BS front: Intercom selection switch = Cam + Floor
BS Headset Mic (Phantom Power !)	Tracker Output = ENG Channel Camera system menu: Install \ Intercom \ Track Source = ENG BS system menu: Audio/Intercom \ ENG Headset \ Mic to ENG-Cam = On	Camera system menu: Install \ Intercom \ Cam engineering ≠ Off BS system menu: Audio/Intercom \ ENG Headset \ Mic to ENG-Cam = On	BS system menu: Audio/Intercom \ ENG headset \ Sidetone > 0

* Other ways to switch on camera microphone:
- Camera: Start button = On
- Camera: Intercom Routing Switch = ENG or PROD

Audio/Intercom board present - Headset board absent in Base Station

2. Headset board absent - Audio/Intercom board present



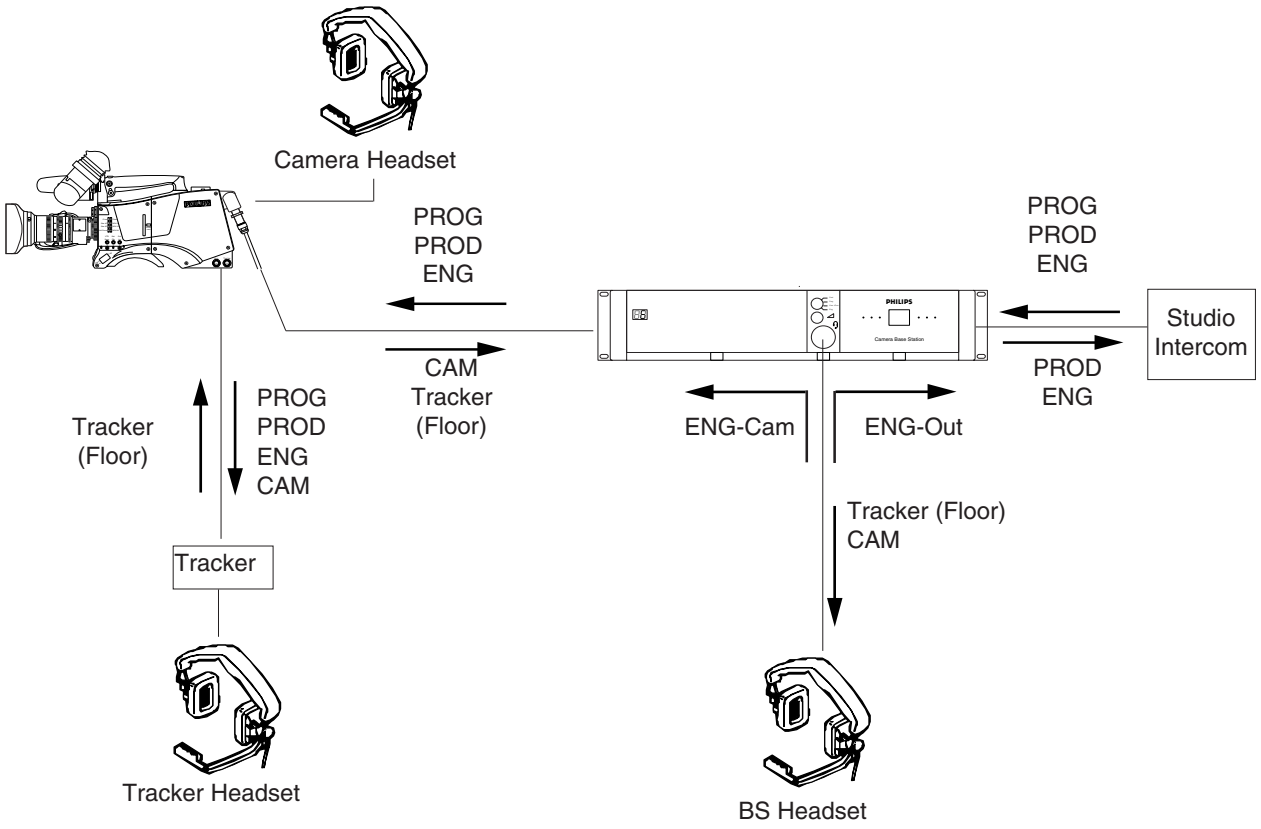
Audio/Intercom board present - Headset board absent in Base Station

FROM \ TO	Tracker Headset	Camera Headset	Studio PROD	Studio ENG
Tracker Mic (Phantom Power !)	Tracker box = ENG Channel Camera system menu: Install \ Intercom \ Track mic to ≠ Off Install \ Intercom \ Track Source = Side	Camera system menu: Install \ Intercom \ Track mic to ≠ Off Install \ Intercom \ Cam track ≠ Off Install \ Intercom \ Cam level > 0	Camera system menu: Install \ Intercom \ Track mic to = All or Prod BS system menu: Audio/Intercom \ Intercom \ Isolate \ Isolate = Syst	Camera system menu: Install \ Intercom \ Track mic to = All or ENG BS system menu: Audio/Intercom \ Intercom \ Isolate \ Isolate = Syst
Camera Mic (Phantom Power !)	**CAM Channel** Tracker box = Camera Channel Cam Mic = On* Camera system menu: Install \ Intercom \ Cam Mic to = CH1 **ENG Channel** Tracker box = ENG Channel Camera system menu: Install \ Intercom \Track Source = Side Install \ Intercom \ Cam Mic to = Ch2	Camera system menu: Install \ Intercom \ Cam Mic = On Install \ Intercom \ Side tone > 0	BS system menu: Audio/Intercom \ Intercom \ Isolate \ Isolate = Syst Camera intercom routing switch = Prod (or camera start button = on)	BS system menu: Audio/Intercom \ Intercom \ Isolate \ Isolate = Syst Camera intercom routing switch = ENG
Studio PROD	Tracker box = PROD Channel	Camera system menu: Install \ Intercom \ Cam production ≠ Off	Not available	Not available
Studio ENG	Tracker box = ENG Channel Camera system menu: Install \ Intercom \Track Source = ENG	Camera system menu: Install \ Intercom \ Cam engineering ≠ Off	Not available	Not available
Studio PROG	Tracker box = PROG Channel	Camera system menu: Install \ Intercom \ Cam program ≠ Off	Not available	Not available

* Other ways to switch on camera microphone:
- Camera: Start button = On
- Camera: Intercom Routing Switch = ENG or PROD

Audio/Intercom board and Headset board present in Base Station

3. Headset board present - Audio/Intercom board present

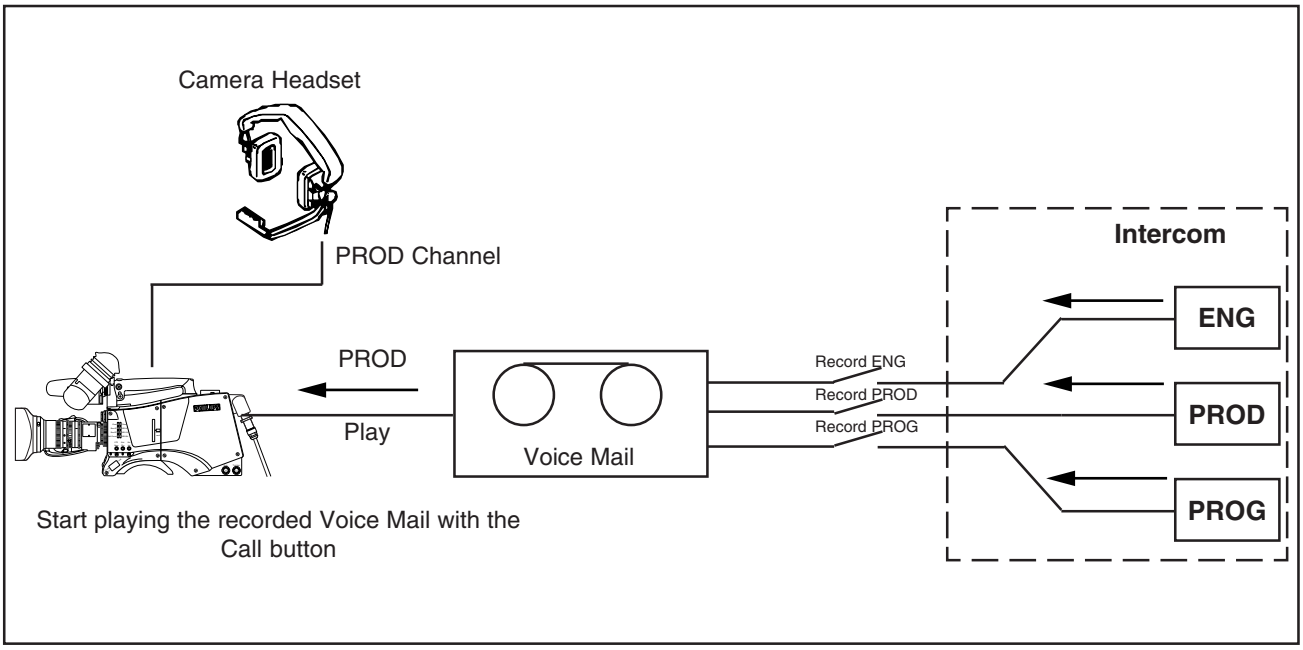


Audio/Intercom board and Headset board present in Base Station

FROM \ TO	Tracker Headset	Camera Headset	BS Headset	Studio PROD	Studio ENG
Tracker Mic (Phantom Power !)	Tracker box = ENG Channel Camera system menu: Install \ Intercom \ Track mic to ≠ Off Install \ Intercom \ Track Source = Side	Camera system menu: Install \ Intercom \ Track mic to ≠ Off Install \ Intercom \ Cam track ≠ Off Install \ Intercom \ Cam level > 0	Camera system menu: Install \ Intercom \ Track mic to ≠ Off BS system menu: Audio/Intercom \ ENG headset \ Tracker to headset = On Audio/Intercom \ ENG headset \ Tracker volume > 0 BS front: Intercom selection switch = Cam + Floor	Camera system menu: Install \ Intercom \ Track mic to = All (or Prod) BS system menu: Audio/Intercom \ Isolate \ Isolate ≠ Isol	Camera system menu: Install \ Intercom \ Track mic to = All (or Eng) BS system menu: Audio/Intercom \ Isolate \ Isolate ≠ Isol
Camera Mic (Phantom Power !)	**CAM Channel** Tracker box = Camera Channel Cam Mic = On* Camera system menu: Install \ Intercom \ Cam Mic to = CH1 **ENG Channel** Tracker box = ENG Channel Camera system menu: Install \ Intercom \Track Source = Side Install \ Intercom \ Cam Mic to = Ch2	Camera system menu: Install \ Intercom \ Cam Mic = On Install \ Intercom \ Side tone > 0	Camera system menu: Install \ Intercom \ Cam mic to = CH1 *(If = CH2, then monitoring via floor)* BS system menu: Audio/Intercom \ ENG headset \ Cam to headset = On Audio/Intercom \ ENG headset \ Cam volume > 0 Audio/Intercom \ ENG headset \ Floor to headset = On BS front: Intercom selection switch = Cam + Floor	BS system menu: Audio/Intercom \ Isolate \ Isolate ≠ Isol Camera intercom routing switch = PROD	BS system menu: Audio/Intercom \ Isolate \ Isolate ≠ Isol Camera intercom routing switch = ENG
BS Headset Mic (Phantom Power !)	Tracker box = ENG Channel Camera system menu: Install \ Intercom \ Track Source = ENG BS system menu: Audio/Intercom \ ENG Headset \ Mic to ENG-Cam = On	Camera system menu: Install \ Intercom \ Cam Engineering ≠ Off BS system menu: Audio/Intercom \ ENG Headset \ Mic to ENG-Cam = On	BS system menu: Audio/Intercom \ ENG headset \ Sidetone > 0	Not available	BS system menu: Audio/Intercom \ Isolate \ Isolate ≠ Isol Audio/Intercom \ ENG Headset \ Mic Eng-Out = On
Studio PROD	Tracker box = PROD Channel	Camera system menu: Install \ Intercom \ Cam Production ≠ Off	BS front: Intercom selection switch = PROD	Not available	Not available
Studio ENG	Tracker box = ENG Channel	Camera system menu: Install \ Intercom \ Cam Engineering ≠ Off	BS front: Intercom selection switch = ENG	Not available	Not available
Studio PROG	Tracker box = PROG Channel	Camera system menu: Install \ Intercom \ Cam Program ≠ Off	BS front: Intercom selection switch = PROG	Not available	Not available

* Other ways to switch on camera microphone:
  - Camera: Start button = On
  - Camera: Intercom Routing Switch = ENG or PROD

Voice Mail



Voice Mail is an intercom message storage function.

Note: Voice mail is only available if the Base Station menu item *Audio/Intercom \ Intercom \ Call* is set to Voice.

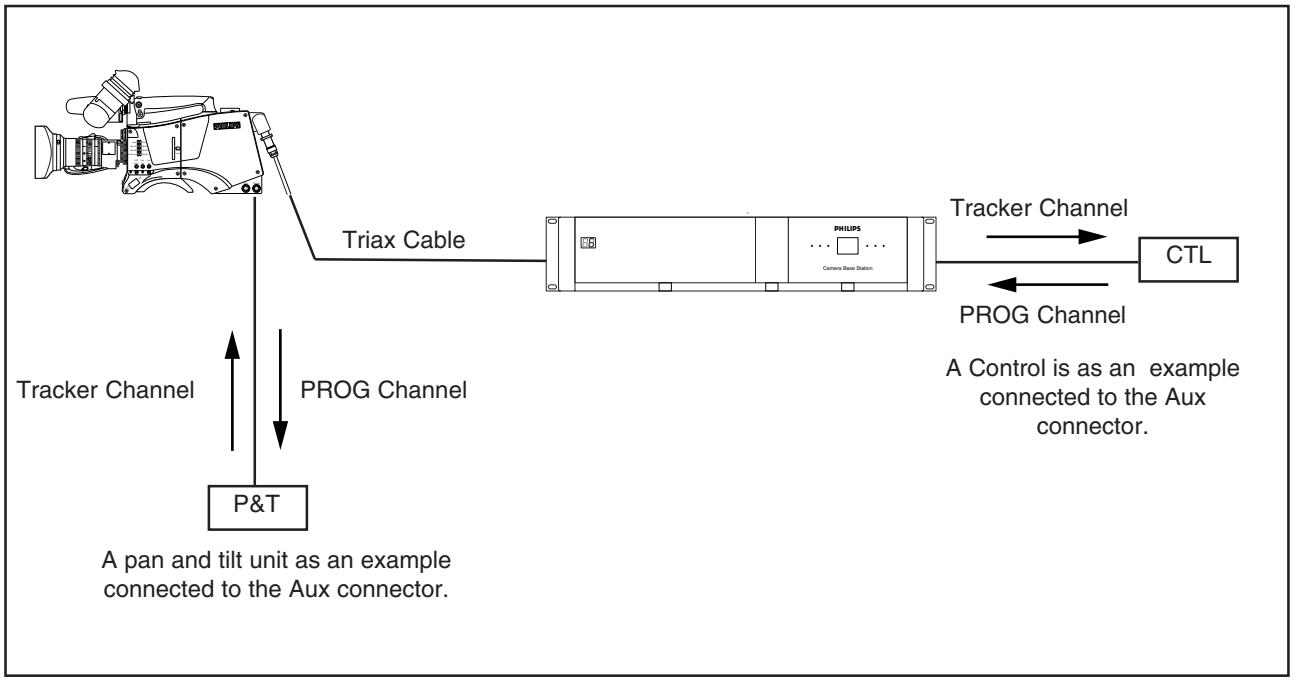
Recording
Recording starts automatically at the start of a message. A new message erases the previous recorded message. The maximum message length is 16 seconds. Longer messages are recorded in a retroloop. Only the last 16 seconds are available for playback.

Select the intercom channels to be recorded via the Base Station menu items *Audio/Intercom \ Intercom \ Voice mail \ Record ENG, PROD and PROG*.

Note: The voice mail box can only contain one message. If voice mail recording starts from an other intercom channel the previous message is erased.

Listening to the message
Push the camera call button to start playing out the recorded voice mail to the camera headset. Push the call button again to stop playing the voice mail message.

Private Data



Private data channels can be used for the transmission of serial data via the triax cable. For example, electronic scriptboard or character data for a video display unit can be transmitted to the camera.

The tracker microphone intercom channel is used for the data channel from camera head to Base Station. The program intercom channel is used for the data channel from Base Station to camera head. The input and output signals are available on the auxiliary connectors of the camera and Base Station (for camera see the connectors and cables section). If a channel is used for private data, then of course the original functions are no longer available.

To select the function of the Base Station to camera channel set the Base Station menu item *Audio/Intercom* \ *Private Data* \ *PROG Channel* to Priva.

To select the function of the Camera to Base Station channel set the Base Station menu item *Audio/Intercom* \ *Private Data* \ *Tracker Channel* to Priva.

Remember that the propagation-delay times are different for different triax cable lengths, especially if a return signal is involved. At maximum lengths of 2400 metres the total delay is at least 25 µsec. and can be more than 30 µsec, depending on the type of triax cable.

Data signal specifications
Baudrate: 2400
Input level: TLL, possible RS232
Input impedance: 100Kohm
Output impedance: ~300 ohm
Max load: ~1Kohm

MCP Available

When no MCP is available it might occur that some functions are in an undesirable position, for example, a lock on the upper part of the OCP. To prevent this happening, set the Base Station menu item *System \ MCP Available* to No when an MCP is not available.

The functions affected by this setting and their state are as follows (if the item value is set to MCP Available = No):

Variable black stretch (Yes/No)	Yes
Variable gamma (Yes/No)	Yes
Variable Flare (Yes/No)	Yes
Saturation (Yes/No)	Yes
White clipper (Yes/No)	Yes
Knee slope (Yes/No)	Yes
Knee point (Yes/No)	Yes
Iris(Normal/Reverse)	Normal
OCP lock (Upper/Total)	Total
Intercom (System/Isolate)	System
Audio (External/MCP)	External
Aspect Ratio (External/MCP)	External
Aspect Ratio (4:3/16:9)	4:3
Autolight (Yes/No)	Yes

Specifications

LDK 4502/00 HDTV Base Station

General

Dimensions (WxHxD)	438 (19" rack) x 88 (2RU) x510mm. (17.2 x 3.5 x 20.1 inch)
Operating temperature	-20 °C to +50 °C (-4 °F to 122 °F)
Storage temperature	-40 °C to +70 °C (-40 °F to 158 °F)
Operating humidity	Max. 90% (non condensing)
Shock resistance	Max.10G (transport), Max. 2G (operating)
Altitude	Max. 50,000 ft
Weight	17.0 kg. (37.5 lbs.) fully equipped with options

Transmission

Typical. cable length	1,000 m. (3,281 ft) (14 mm./0.55" triax cable)
Bandwidth	30/ 15/ 15 MHz., Y/Cr/Cb

Connectors

Teleprompter in	BNC 1x (and loop-through output), 1.0Vp-p, 75Ω
Reference in	BNC 1x (and loop-through output), 1.0Vp-p, 75ΩHD tri-level sync or SD Black Burst
HD-SDI out	BNC 3x, 0.8Vp-p, 75 Ω, SMPTE 292M, 1080i or 720p at 59.94 or 50Hz
Text out	BNC 1x, 1.0Vp-p, 75 Ω(VBS)
Composite video out	BNC 1x, 1.0Vp-p, 75 Ω(CVBS, w/ or w/o text, for viewing purposes)
Signalling in/out	D-sub 15-pin, male Preview, Green tally (call), dry contact, Yellow tally (ISO), dry contact Red tally (on-air), dry contact Remote audio level control (22-64dB), DC
Auxiliary in/out	D-sub 9-pin, female An0, 0-5Vdc in, output on camera head An1, 0-5Vdc in, 16:9 < 0.8 Vdc in, 4:3 > 2.4Vdc i n Private data in/ out, 2.4kB TTL (RS-232)
RS-232	D-sub 9-pin, male (RXD, TXD, DTR, DSR, RTS, CTS)
Control data	4- pin, male (2-wire camera control bus)
Link	3- pin, female (Feature box control link)

LDK 4510 POWER MODULES

LDK 4510/10	AC/DC power module for studio and portable camera heads
Power requirement	AC 115V/230V +/- 15%, 47 to 63Hz
Power connector	IEC type, 3-pin male
Power consumption	470VA or 270Watts max. with studio camera head; 360VA or 210Watts max. with port. camera head
Utility power	150VA or 150Watts max. on studio camera head; 80VA or 80Watts max. on port. camera head

LDK 4521 HDTV TRIAX MODULES

LDK 4521/10	TriaxHD Module with Fischer triax connector
LDK 4521/20	TriaxHD Module with Tri-Lock triax connector
LDK 4521/30	TriaxHD Module with ARD triax connector
LDK 4521/40	TriaxHD Module with Lemo 4 triax connector
LDK 4521/50	TriaxHD Module with Lemo BBC triax connector
LDK 4521/60	TriaxHD Module with Lemo 3 triax connector

LDK 4530 EXTERNAL VIDEO IN MODULES

LDK 4530/10	External video input module
External video in	BNC 2x, 1.0Vp-p, 75Ω (loop-through) (CVBS or VBS)

LDK 4531 VIDEO OUT MODULES

LDK 4531/20	SDTV output HD module
SDI out	BNC 3x, 0.8Vp-p, 75 Ω, SMPTE 259M, ITU-R, BT.601
Analog out	BNC 3x, R, G, B or Y, Pr, Pb, or 3x CVBS (menu selection): - RGB out: 3x 0.7Vp-p (+/- 1%), 75 Ω - Y, Pr, Pb: 3x 0.7Vp-p (+/- 1%), 75 Ω - CVBS out: 3x 1.0Vp- p (+/- 1%), 75 Ω Frequency response 0.1 to 5.75MHz (+0.5dB/-1dB) K factor Less than 2%

LDK 4540 AUDIO & INTERCOM MODULES

LDK 4540/10	2 ch. audio & 2/4-wire intercom
Audio out	XLR- 3 2x, 0/+6dBu (+/-1.5dB, max. 18dBu, 600 Ω, Gain Max. 70dB)
Frequency response	40Hz to 15kHz, (+1/-3dB, 1kHz, -10dBu output level)
Distortion	Less than 0.5% (100Hz/ 1kHz, +6dBu out, 600 Ω)
S/N ratio	58dB (unweighted RMS)
Intercom in/out	D- sub 15- pin, female (program in, production in/out, engineering in/out in: 0 or 6dBu (max. 6 or 12dBu), 9kΩ, out: 0 or 6dBu (+/ -2dB, max 12dBu), 600Ω
Frequency response	150Hz to 6kHz (1kHz, -10dBu output level)
Distortion	Less than 2% (1kHz, +12dBu level)

LDK 4541 Engineering intercom module

LDK 4541/10	XLR-5 (female) engineering intercom module
LDK 4541/20	Tuchel 6- pin engineering intercom module
LDK 4541/30	Tuchel 5- pin engineering intercom module
LDK 4541/40	XLR-7 (female) engineering intercom module (6dBu, +/- 2dB, max 12dBu, 25-400 Ω)
Frequency response	150Hz to 6kHz, +/- 3dB (0dB, 1kHz, -10dBu output level)
S/N ratio	46dB (unweighted RMS)
Phantom power	+12Vdc (+/ -1V), menu selectable

LDK 4560 MONITORING MODULES

LDK 4560/20	Monitoring HD module (with WFM, PXM and analog HDTV out)
PXM video out	BNC 1x, 1.0Vp-p, 75 Ω, SMPTE 274M or SMPTE 296M (depending on acquisition format); R, G, B or Y (menu selection) with HD tri-level SYNC
WFM video out	BNC 1x, 1.0Vp-p, 75 Ω, SMPTE 274M or SMPTE 296M (depending on acquisition format); R, G, B or Y (menu selection) with HD tri-level sync.
Analog HDTV out	VGA-type D-connector, 15-pin, female, with R, G, B, H-sync and V-sync
Frequency response	0.1 to 30MHz (+0.5dB/- 1dB)

Section 3

Operating Instructions

This section describes the structure of the camera base station control system. This section explains how to control and program the menu system and how to set up the menu system to suit your personal preferences. The menu structure and the methods of function selection are also explained. The appendix shows the contents of the menu system.

Contents

The flexible design of the base station means that it can be integrated into a variety of configurations in studios or OB vans. To made full use of its extensive functionality it provides many facilities for setting it up. Once set up, operation is vitually transparent.

We recommend that you spend time using the various controls and displays in order to fully discover the wide range of features. Read the instructions in this section carefully but also feel free to examine the various menus in detail. In this way you will learn quickly to intuitively use the system.

Simple set-up

The Rotary/Push button behind the left front cover can be used to control some basic set-up functions. It can also be used to navigate through the menu system.

Menu System

The menu system is used for setting up and configuring the base station. As there are a large number of functions and set-up options available, it may require some time for you to become familiar with them all.

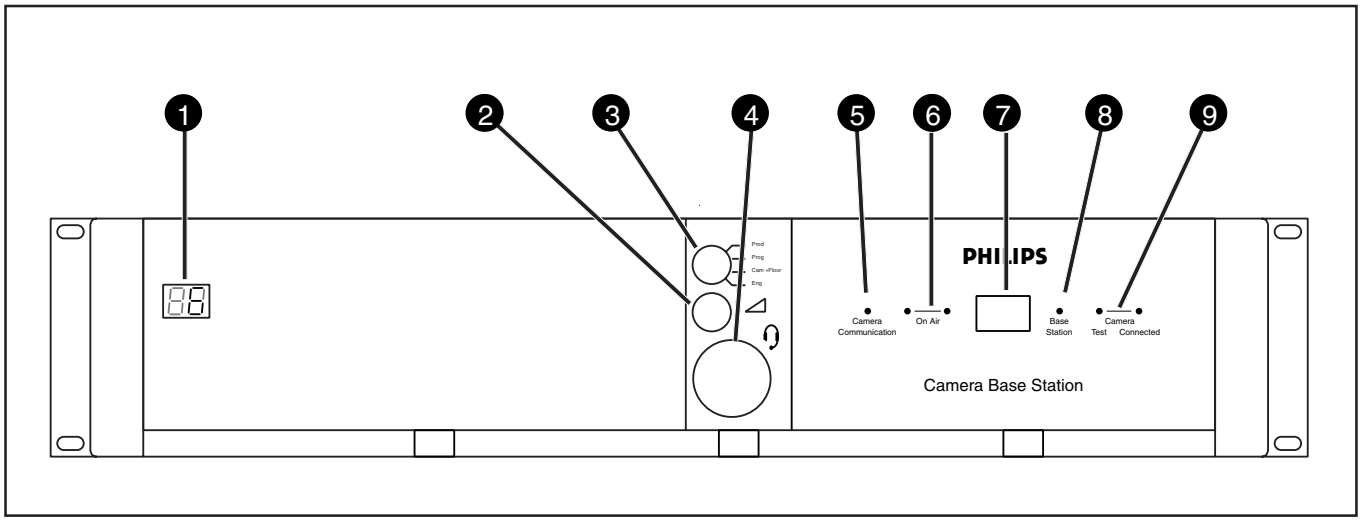
OCP menu control

Although the Rotary/Push button can be used to navigate through the menu system, it is more convenient to use the OCP connected to the Base Station. (Refer to the OCP user guide to find out how to do this.)

Viewing the menu

The System Menu video signal is available on the Text output of the base station. The System Menu text can also be superimposed on the CVBS output if desired.

Front panel



1 Display

During normal operation the display shows the number of the camera connected to the Base Station.

When the set-up control (located behind the left front cover) is activated, the display shows a two letter code to identify the set-up function (see Set-Up).

The display can be switched on or off via the Base Station menu system.

2 Intercom volume control

Adjusts the volume of the selected intercom channel being monitored on the connector below.

3 Intercom selection switch

Use this switch to select the intercom channel that is monitored on the connector below.

4 Intercom connector

Connect a headset to this connector to monitor the selected intercom channel.

5 Camera Communication

This green LED lights when the communications between Camera and Base Station are OK.

6 On Air and ISO indicators

The red LED lights when the Camera is On Air.
If the Camera is selected as ISO Camera the yellow LED lights.

7 Power Switch

Switches the power supply to the Base Station on and off. A built-in light lights to indicate that the power is ON.

8 Base Station

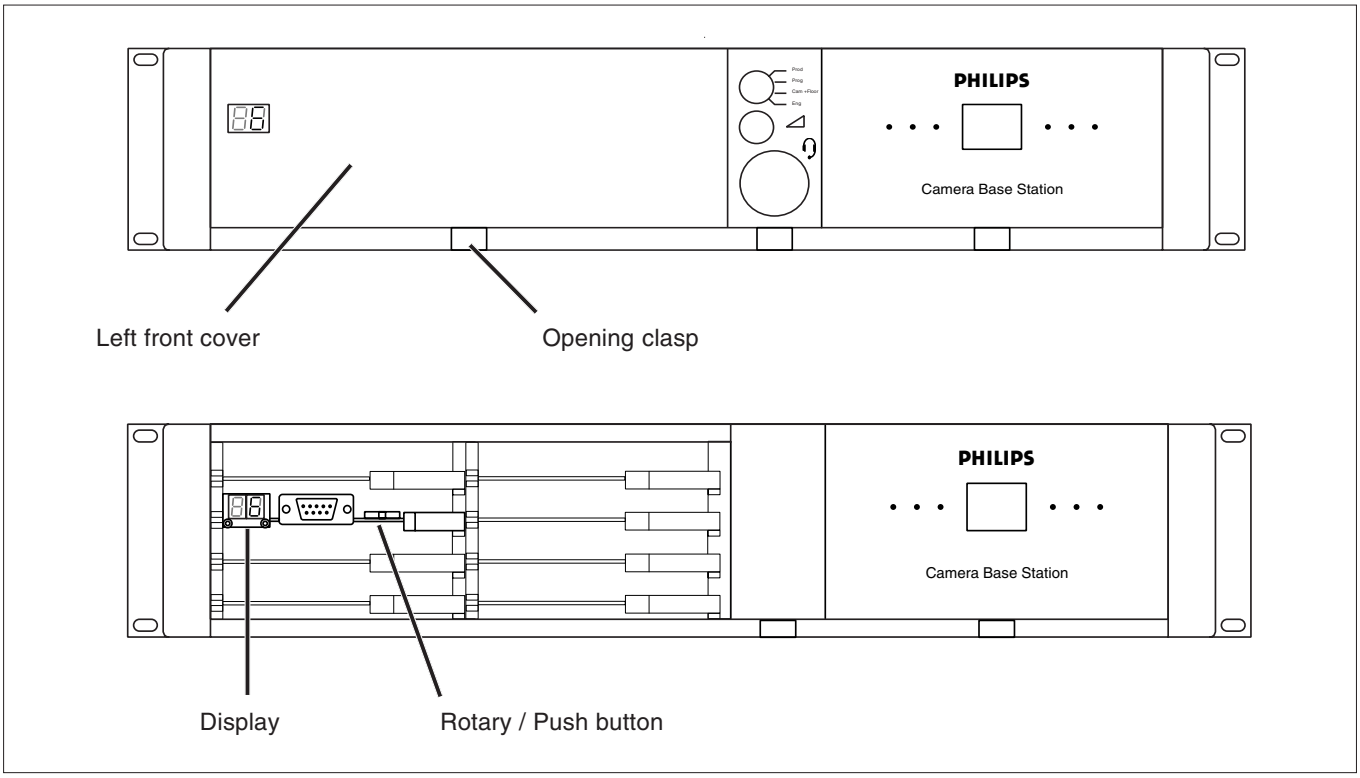
This green LED lights when the Base Station is operationally ready.

9 Camera indicators

This bicolour TEST LED lights red or yellow to indicate the Camera and Triax status:

- Red lights continuously – Triax short circuit.
- Red flashes – Triax open circuit.
- Yellow – Camera power switched off with the Operational or Master Control Panel.

This green CONNECTED LED lights when the Camera is connected and the Camera power switch is On.



Set-up items

There are four items that can be accessed via the set-up Rotary/Push button on the Data Board:

- Camera number (CA)
- Subcarrier adjustment (SC)
- H-phase (HP)
- System menu (NN)

Remove the left front cover to access the Rotary/Push button on the Data Board.

Rotate the button to the left or right to select the required item. The display shows the abbreviation of the current item.

Camera Number (CA)

When CA is displayed, push the Rotary/Push button to enter the selection mode. Rotate the button to the left or right to select an available camera number. Push the Rotary/Push button to set the new camera number. The Base Station automatically resets and the new camera number is shown in the display.

Subcarrier (SC)

When SC is displayed, push the Rotary/Push button to enter the Subcarrier adjustment mode. Rotate the button to the left or right to shift the Subcarrier phase. If you continue to rotate the button, the shift change occurs in bigger steps. Push the Rotary/Push button to leave the Subcarrier adjustment mode.

H-Phase (HP)

When HP is displayed, push the Rotary/Push button to enter the H-Phase adjustment mode. Rotate the button to the left or right to shift the H-Phase. If you continue to rotate the button, the shift change occurs in bigger steps. Push the Rotary/Push button to leave the H-Phase adjustment mode.

System Menu (NN)

When NN is displayed, push the Rotary/Push button twice to enter the System Menu. The Rotary/Push button can be used to navigate through the menu system, however, it is more convenient to use the OCP connected to the Base Station. (Refer to the OCP user guide to find out how to do this.)

The System Menu video signal is available on the Text output of the base station. The System Menu text can also be superimposed on the CVBS and the Monitor output if desired.

Entering the Systems menu

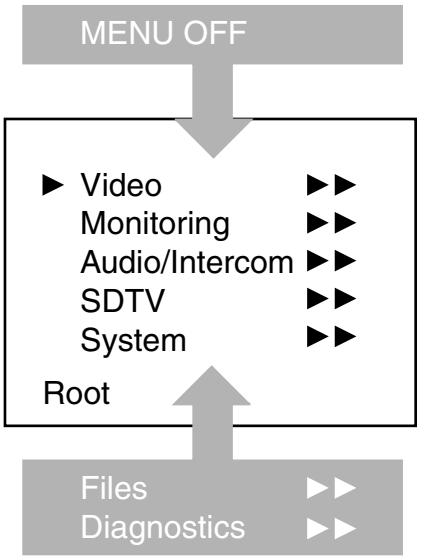
The system functions of the base station are grouped into menus and sub-menus. Rotate the Rotary/Push button to the left or right to select the Systems Menu. The display shows the abbreviation NN. Push the Rotary/Push button twice to enter. The Main menu appears on the monitor.

Note:

Navigating the system menu is also possible with the LDK4628 and LDK4629 Operational Control Panels. Refer to their respective User's Guide for information on how to do this.

The main menu screen shows five items and the name of the menu. One more item is hidden but becomes visible when you scroll down.

A cursor shows your position in the menu. The Rotary/Push button moves the cursor up and down.



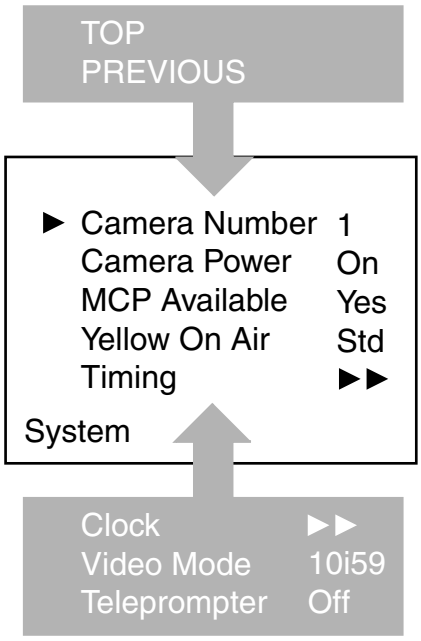
Finding your way

Use the Rotary/Push button to move the cursor through the menu items. If a double arrow (>>) is visible, then pressing the Rotary/Push button brings you one level lower in the menu system. Only five items are visible in each menu. Scroll up or down to see any additional items.

When you first enter a menu (other than the main menu) the cursor is positioned next to the first item.

The TOP and PREVIOUS entries are not immediately visible but are located above the first item. Use the Rotary control to scroll up to them.

- Select TOP to bring you back to the MAIN menu.
- Select PREVIOUS to go back to the menu that you were in before the current one.



The SYSTEM menu above shows the items displayed when you first enter the menu and the other items that are available by scrolling up or down with the Rotary control.

Leaving the Systems Menu

If you are deep within the menu structure, follow these steps to leave:

a. If necessary move the cursor to the left most column with the Rotary/Push button.
b. Scroll upwards until the cursor points to TOP (this is the main menu).
c. Press the Rotary/Push button. The cursor now points to the Menu off item of the MAIN menu.
d. Press the Rotary/Push button to leave the system menu.

This is the recommended way of leaving the system menu.

The menu system disappears after a few seconds when you stop navigating. (This delay can be programmed in the *MONITORING / MENU* menu.) However, when you enter the system menu again you enter at the last position of the cursor and not at the top of main menu.

To prevent confusion the next time you enter the system menu, it is advisable to leave the system menu by returning to the main menu (TOP) and selecting *MENU OFF*.

Making changes

To find out where to change a function, consult the List of System Menu Functions at the end of this section to find out under which menu group or subgroup the function is located.

If the cursor points to an item (and there are no double arrows to indicate a sub-menu) then the item pointed to has a value. The value can be:

- a toggle value (only two values)
- a list value (more than two values)
- an analogue value (variable from 00 to 99)

or unavailable (---).

If the value is unavailable it cannot be changed. This is indicated by three dashes (---). This can occur, for example, when a function is switched off. The analogue values associated with that function are then unavailable.

If there are only two values associated with the function, then pressing the Rotary/Push button toggles between these two values.

If a value is displayed next to a function that is one of several possible values, then pressing the Rotary/Push button places the cursor in a list menu indicating the value currently selected. Use the Rotary/Push button to point to a new value. Press the Rotary/Push button to return the cursor to the function list.

If an analogue value is displayed next to a function name, then pressing the Rotary/Push button places the cursor in front of the value and the Rotary/Push button is used to change the analogue value. Press the Rotary/Push button to return the cursor to the function list.

Undoing changes

If you make changes to the settings in the Systems menu and you decide not to keep them, use the Recall File function to recall a standard or stored set of values for the parameters. These files are available in the FILES menu.

Menu Structure

Access to the functions on these menus is determined by the user level that has been set. The menus are as follows:

Main (top) menu

The top menu gives access to the other menus.

Video menu

The video menu contains those functions which affect the picture quality.

Monitoring menu

This menu contains the functions which determine how items in the video monitor are displayed.

Audio/Intercom menu

The functions contained under this menu control various aspects of audio and intercom.

SDTV menu

The SDTV menu contains the functions that are used to set up the SDTV output settings.

System menu

This menu contains the functions that are used to set up the general configuration and for carrying out adjustments and calibrations of the Base Station.

Files menu

This menu allows values to be stored in System and operator files, and allows these files to be recalled as required.

Diagnostic menu

The diagnostic menu is designed to provide information on the current status of the Base Station.

User Levels

The menu items are divided into two user levels. The operator level "O" is default accessible. Menu items with user level Install "I" are only accessible if the menu level is set to Install.

To enter the Install level proceed as follows:

a. Enter the menu.
b. Navigate to the *Monitoring* \ *Menu* \ *Menu level* Item.
c. Set the Menu level to Inst.

The purpose of the user levels is to restrict the set of functions which can be changed by whoever is using the Base Station. In this way a the danger of the operator accidentally changing critical functions while shooting is reduced.

The system Menu Structure paragraph of this section indicates which functions are available at each user level.

Video menu - Special features

Auto lighting

The Auto Lighting item of the the video menu compensates for variations in the frequency of the power supply used for gas discharge lamps (fluorescent or HMI lighting).

The frequency of power supply generators can vary from the nominal value. This variation affects the lighting which in turn affects the colour balance. If camera system and lighting are supplied by the same power source, then the base station auto lighting function can automatically adjust the exposure to follow the variations and maintain a constant colour balance. This correction only works when the camera exposure time is set to the 50Hz or 60Hz position.

Section 3 -Appendix

Menu System

Contents

System Menu Structure

The system Menu tables present the functions ordered in the logical divisions of the menu system itself with additional information in the columns:

- User level column
  The User level column indicates the functions that are available with different user levels.

- Values column
  All available choices are listed for a function.

- Blocked if column
  Lists the conditions that block the function.

- Default column
  The default column lists the values of the functions when a camera is delivered.

- Files column
  The File column indicates where the value of the function is stored; in the operator file or in the system file or not at all.

- Comments column
  The Comments column list information about the function.

MAIN Menu			
Menu text	**User**		**Comments**
<Menu Off>	**O**	**I**	
Video >>	**O**	**I**	
Monitoring >>	**O**	**I**	
Audio/Intercom >>	**O**	**I**	
SDTV >>	**O**	**I**	
System >>	**O**	**I**	
Files >>	**O**	**I**	
Diagnostics >>	**O**	**I**	

VIDEO Menu							
Menu text	**User**		**Values**	**Default**	**Blocked if**	**File**	**Comments**
Chroma >>	**O**	**I**	On,Off	On	-	Scene	Add colour information to the CVBS signals
Colour Bar >>							
Colour Bar	**O**	**I**	On,Off	Off	-	Scene	-
Colour Bar Type		**I**	SMPTE,Full	SMPTE	-	System	Change white bar level in colour bar
Ext Black Clamp		**I**	0..99	50		System	

MONITORING Menu							
Menu text	**User**		**Values**	**Default**	**Blocked if**	**File**	**Comments**
Monitoring Source	**O**	**I**	R,G,B,Y	Y	-	Scene	Select signal on Monitoring output
Menu >>							
Display	**O**	**I**	On,Time	Time	-	Operator	Time out superimposed menu text on or off
Menu Time	**O**	**I**	5...99	10	-	Operator	Time out duration superimposed menu text
Menu Level	**O**	**I**	Oper,Inst	Inst	-	-	Set menu level to Operator or Install level
Statusbar >>							
Studio >>							
Studio	**O**	**I**	On,Off	Off	-	Operator	Display studio name in Statusbar
Name	**O**	**I**	*[String]*	-	-	-	Edit studio name
Operator >>							
Operator	**O**	**I**	On,Off	Off	-	Operator	Display camera operator name in statusbar
Name	**O**	**I**	*[String]*	-	-	-	Edit camera operator name

AUDIO/INTERCOM Menu							
Menu text	**User**		**Values**	**Default**	**Blocked if**	**File**	**Comments**
Audio >>							
Audio Level 1		**I**	0dB,6dB	6dB	-	System	Studio audio system level input 1
Audio Level 2		**I**	0dB,6dB	6dB	-	System	Studio audio system level input 2
Intercom >>							
Private Data >>							Consult Section "Private Data" for detailed information
Tracker Channel		**I**	Inter,Priva	Inter		System	Private data channel from Camera to Base Station *
Prog Channel		**I**	Inter,Priva	Inter	-	System	Private data channel from Base Station to Camera *
Isolate >>							No Intercom communication from Camera to Base Station (Studio)
Source	**O**	**I**	Local,Rmote	Local	-	Operator	Local = Setting available in Base Station Menu, Rmote = Setting available with MCP
Isolate		**I**	Isol,Syst	Syst	Source=Rmote	Install	Isol = Isolate, Syst = Isolate is off
ENG >>							
Wire Mode		I	2 wire,4 wire	4 wire	-	System	Standard studio intercom system setting
Side Tone	O	I	0..99	50	-	Operator	-
level	O	I	0dB,6dB	6dB	ENG Wire Mode=2	Operator	Standard studio intercom system setting
In Ref Level		I	0..99	50	-	System	Input intercom level signal from studio
Out Ref Level	O	I	0..99	50	-	Operator	Output intercom level to studio
PROD >>							
Wire Mode		I	2 wire,4 wire	4 wire	-	System	Standard studio intercom system setting
Side Tone		I	0..99	50	-	System	-
Level	O	I	0dB,6dB	6dB	PROD Wire Mode=2	Operator	Standard studio intercom system setting
In Ref Level		I	0..99	50	-	System	Input intercom level signal from studio
Out Ref Level		I	0..99	50	-	System	Output intercom level to studio
PROG >>							
Wire Mode		I	2 wire,4 wire	4 wire	-	System	Standard studio intercom system setting
Level	O	I	0dB,6dB	6dB	PROG Wire Mode=2	Operator	Standard studio intercom system setting
In Ref Level		I	0..99	50	-	System	Input intercom level signal from studio
ENG Headset >>							Settings for the optional headset module
Phantom Power	O	I	On,Off	Off	-	Operator	12V DC Phantom power
Mic Level	O	I	0dB,20dB	20dB	-	Operator	Headset microphone sensitivity
Side Tone	O	I	0..99	50	-	Operator	Headset side ton level
Mic to Headset		I	On,Off	On	ENG Wire Mode=2	System	Side tone on/off
CAM to Headset	O	I	On,Off	On	-	Operator	Camera ENG channel to headset
CAM Volume	O	I	0..99	50	-	Operator	Camera ENG channel to headset level
Tracker to Headset	O	I	On,Off	On	-	Operator	Tracker ENG channel to headset

AUDIO/INTERCOM Menu (Continued)							
Menu text	**User**		**Values**	**Default**	**Blocked if**	**File**	**Comments**
Tracker Volume	O	I	0..99	50	-	Operator	Tracker ENG channel to headset level
Mic Eng-Out	O	I	On,Off	On	-	Operator	Headset to basestation ENG output
Mic to Eng-Cam	O	I	On,Off	On	-	Operator	Headset to camera ENG channel
Call		I	Call,Voice	Call	-	Operator	Set to Voice if Voice Mail functionallity is required. (The Call function is still available if Call is set to Voice)
Voice Mail >>							See Section 3 "Voice Mail"
Record ENG	O	I	On,Off	On	Call is not Voice	Operator	Intercom messages from the ENG channel to the camera are recorded.
Record PROD	O	I	On,Off	On	call is not Voice	Operator	Intercom messages from the PROD channel to the camera are recorded.
Record PROG	O	I	On,Off	On	call is not Voice	Operator	Intercom messages from the PROG channel to the camera are recorded.

***** *The LDK 100 and LDK 200 cameras with LDK5430 triax adapter follow these settings automatically. For the LDK 10(p), LDK 20(p) and LDK 2000(p) cameras dip- switches in the camera have to be set.*

SDTV Menu							
Menu text	**User**		**Values**	**Default**	**Blocked if**	**File**	**Comments**
Chroma >>							
Chroma	**O**	**I**	On,Off	On	-	Operator	Add colour information to the CVBS signals
Level		**I**	0..99	50	-	System	-
Contour							SDTV contour settings
Contour	**O**	**I**	On,Off	On	-	Scene	-
Source	**O**	**I**	G,R,Y,AVG	Y	-	Scene	-
Level	**O**	**I**	0..99	50	-	Scene	-
Vertical Level	**O**	**I**	0..99	50	-	Scene	-
Noise Slicer	**O**	**I**	0..99	6	-	Scene	-
Course/fine	**O**	**I**	0..99	25	-	Scene	-
Level Dependence	**O**	**I**	0..99	50	-	Scene	-
Soft Contour	**O**	**I**	On,Off	On	-	Scene	-
Soft Contour Level	**O**	**I**	0..99	70	-	Scene	-
Notch							
Notch		**I**	On,Off	Off	-	Scene	Suppress visible distortion in hatch patterns
Level		**I**	0..99	50	-	Scene	-
Video Output		**I**	GRB,YPrPb,CVBS, Off	CVBS	-	System	Select signal type at the Options outputs
Aspect Ratio		**I**	16:9,4:3	16:09	-	-	SDTV Aspect Ratio

SYSTEM Menu							
Menu text	**User**		**Values**	**Default**	**Blocked if**	**File**	**Comments**
Camera Number	**O**	**I**	1..15	15	-	-	Set camera number
Camera Power	**O**	**I**	On,Off	On	-	Operator	Switch the power to the camera
MCP Available		**I**	Yes,No	Yes	-	Operator	See Section "No MCP Available"
Yellow On Air	**O**	**I**	Std,Indep	Std	-	System	Yellow On Air mode
Timing							
H Phase Course	**O**	**I**	0..99	50	No ext. Ref.	System	No external reference signal is provided at the reference input connector.
H Phase Fine	**O**	**I**	0..99	50	No ext. Ref.	System	See comments H Phase Course
Subcarrier Course	**O**	**I**	0,90,180,270	180	No ext. Ref.	System	See comments H Phase Course
Subcarrier Fine	**O**	**I**	0..99	50	No ext. Ref.	System	See comments H Phase Course
Subc H Phase Course		**I**	0,90,180,270	180	Ext. Ref	System	A external reference signal is provided at the reference input connector
Subc H Phase Fine		**I**	0..99	50	Ext. Ref	System	See comments Subc H Phase Course
Clock >>							
Day		**I**	1..31	1	-	-	-
Month		**I**	Jan,Feb..Dec	Jan	-	-	-
Year		**I**	0..99	0	-	-	-
Hour		**I**	0..23	0	-	-	-
Minute		**I**	0..59	0	-	-	-
Video Mode		**I**	10i59,7p59,10i50, 7p50	10i59	-	-	Video modes: 1080i59.94, 720p59.94,1080i50 and 720p50
Teleprompter		**I**	On,Off	Off	-	System	-

FILES Menu						
Menu text	**User**		**Values**	**Default**	**Blocked if**	**Comments**
User Operator Files >>						The "File" column of a menu item indicated with "Operator" is stored in a Operator file.
Operator File	**O**	**I**	O_BS1..O_BS4	BS1		Select Operator file
Recall	**O**	**I**	exec	-		Recall Operator file
Store	**O**	**I**	exec	-		Store Operator file
Std. Operator Files >>						Standard Operator files
Operator File	**O**	**I**	CUST,FACT	CUST		Set the standard Operator file to customer or to factory.
Recall	**O**	**I**	exec	-		Recall standard Operator file
Store		**I**	exec	-	Std. Operator fille=FACT	Store standard customer Operator file. It is not possible to overwrite the factory file
User System Files >>						The "File" column of a menu item indicated with "System" is stored in a System file.
System File		**I**	S_BS1..S_BS4	-		Select System file
Recall		**I**	exec	-		Recall System file
Store		**I**	exec	-		Store System file
Std. System Files >>						Standard System files
System File		**I**	CUST,FACT	CUST		Set the standard System file to customer or to factory.
Recall		**I**	exec	-		Recall standard System file
Store		**I**	exec	-	Std. System file=FACT	Store standard customer System file. It is not possible to overwrite the factory file

DIAGNOSTICS Menu							
Menu text	**User**		**Values**	**Default**	**Blocked if**	**File**	**Comments**
Board ID >>							
Power Board	**O**	**I**				-	-
HP/LP Board	**O**	**I**				-	-
Sync/Encoder Board	**O**	**I**				-	-
Data Board	**O**	**I**				-	-
Video Receiver Board	**O**	**I**				-	-
Front End Board	**O**	**I**				-	-
Audio/Intercom Board	**O**	**I**				-	-
External Video Board	**O**	**I**				-	-
Monitoring Board	**O**	**I**				-	
FM Transceiver Board	**O**	**I**				-	
Aux Receiver Board	**O**	**I**				-	
DSC Interface Board	**O**	**I**				-	-
ENG Headset Board	**O**	**I**				-	
Local Power Board	**O**	**I**				-	
Digital Output Board	**O**	**I**				-	
SDTV Output Board	**O**	**I**				-	
Board Diagnostics >>							
Power Board >>						-	
Triax Status	**O**	**I**	DCPWR..ACODC	-	-	-	See Section "Triax Status Indications"
Local Power Status	**O**	**I**	Ok,NotOK	-	-	-	-
Power Overheated	**O**	**I**	Yes,No	-	-	-	-
Fan	**O**	**I**	Ok,NotOK	-	-	-	-
Sync/Encoder Board >>			Yes,No				
Reference Available	**O**	**I**	Yes,No	-	-	-	-
Generator Lock	**O**	**I**	Yes,No	-	-	-	-
Burst Lock	**O**	**I**	Yes,No	-	-	-	-
Sync lock	**O**	**I**	Yes,No	-	-	-	-
Data Board >>							
Boot Software Id	**O**	**I**	0..255	-	-	-	-
Base Station 12NC	**O**	**I**	0..9999	-	-	-	-
Base Station Status	**O**	**I**	0..255	-	-	-	-
Aux Receiver Board >>							
Carrier Detected	**O**	**I**	Yes,No	-	-	-	-
Audio/Intercom Board >>							
Self test	**O**	**I**	exec	-	-	-	-
ENG Test Tone Intern	**O**	**I**	Run,OK,Error	-	-	-	-
PROD Test Tone Intern	**O**	**I**	Run,OK,Error	-	-	-	-
PROG Test Tone Intern	**O**	**I**	Run,OK,Error				
ENG Test Tone Studio	**O**	**I**	Run,OK,Error	-	-	-	-
PROD Test Tone Studio	**O**	**I**	Run,OK,Error	-	-	-	-
ENG Headset Board >>							
Self test	**O**	**I**	exec	-	-	-	-
Test Intern	**O**	**I**	exec	-	-	-	-
Test Studio	**O**	**I**	Run,OK,Error	-	-	-	-
Test Tone Mic.BS	**O**	**I**	Run,OK,Error	-	-	-	-
Test Tone Tr/Flr.Mic	**O**	**I**	Run,OK,Error				
Test Tone Cam.Mic	**O**	**I**	Run,OK,Error	-	-	-	-
Communications Diag. >>							
Camera Connected	**O**	**I**	Yes,No	-	-	-	-
OCP Connected	**O**	**I**	Yes,No	-	-	-	-
MCP Connected	**O**	**I**	Yes,No	-	-	-	-

List of Abbreviations

Abbreviation	Meaning
adap	adapter
agc	automatic gain control
awb	automatic white balance
bal	balance
cam	camera
ch	channel
cont	contour
ctemp	colour temperature
ctl	control track longitudinal
cus	customer
df	drop frame
dyn	dynamic
exec	execute
exp	exposure
ext	external
ext	extended
flt	filter
fr	front
frm	frame
f-run	free run
hd	head
hr	hour
ind	indicator
info	information
interv	interview
intv	interview
ir	infra-red
lvl	level
man	manual
max	maximum
mic	microphone
min	minute
min	minimum
mom	momentary
mon	monitor
nam	non-additive mix

Abbreviation	Meaning
nd	neutral density
ndf	no drop frame
ocam	camera operator file
ocard	smart card operator file
op	operation
oper	operator
outp	output
ovl	overload
pin number	personal indentification
r/w	read/write
re	rear
repl	replay
r-run	record run
rst	reset
sawt	sawtooth
scam	camera scene file
scard	smart card scene file
sec	second
sel	select
srch	search
st	stereo
std	standard
str	stretch
tc	time code
tm	timer
ub	user bits
unbal	unbalanced
und	underload
var	variable
ver	version
vert	vertical
vf	viewfinder
wa	wide angle
wh	white
wrn	warning
wrx	wireless receiver

Section 4

Replacements

This section gives information on the procedures to follow when replacing printed circuit boards and mechanical components at first line level.

Contents

Introduction

The instructions given in this section are restricted to those modules which can be replaced at the first line service level. These modules include:

- The printed circuit boards
- The connector boards
- The front panels

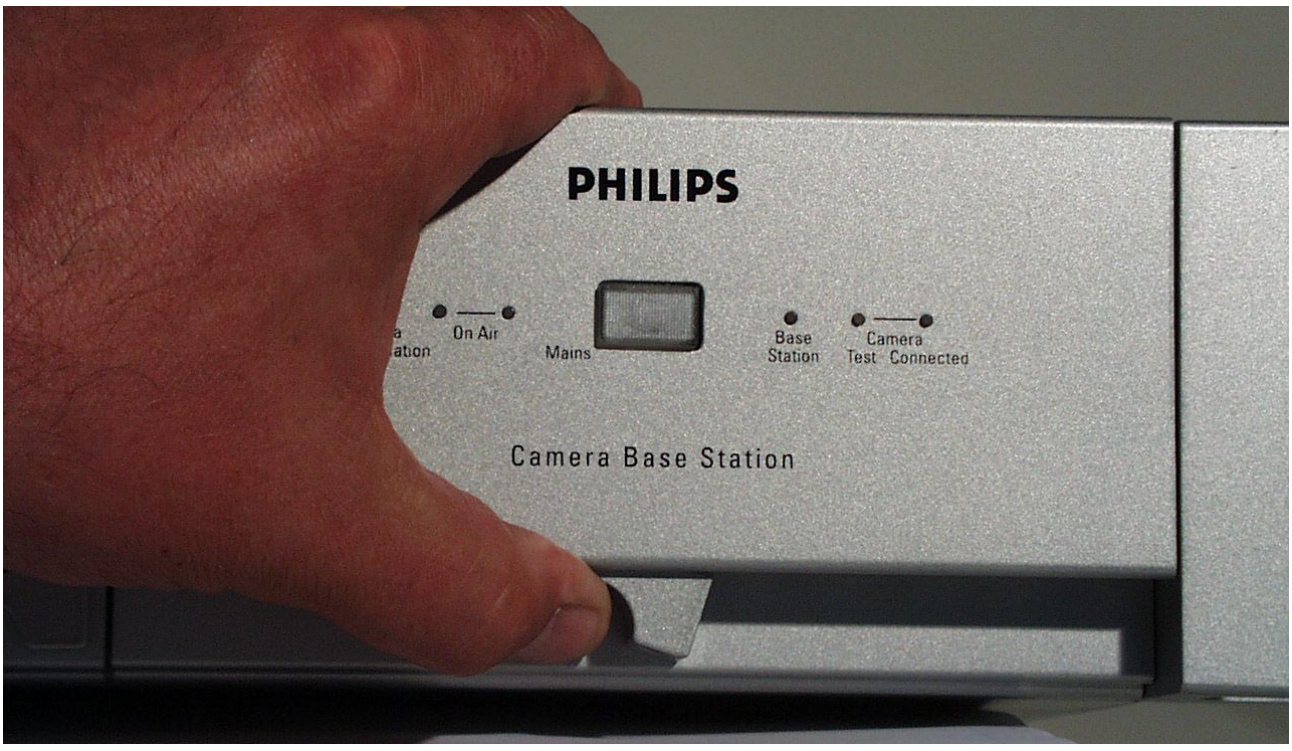
After a printed circuit board has been replaced it is sometimes necessary to carry out adjustments to match the new boards to your base station and so maintain the performance levels. The relevant adjustment procedures are given in Section 4.

The procedures for removing the modules should be followed in reverse order when remounting the units.

Power

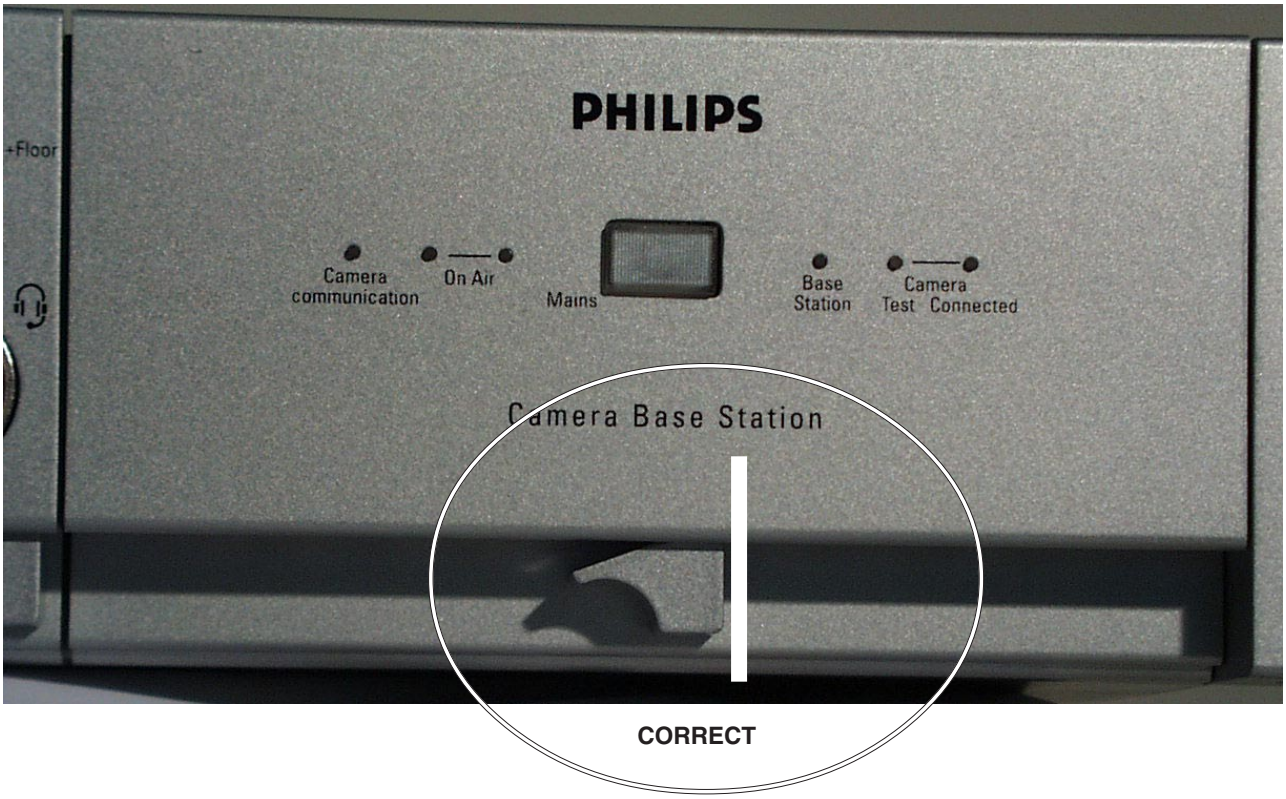
Removing the Power Unit

Remove the screw at the rear of the power unit. With your thumb push up the lever, as shown on the picture below, and pull the Power Unit out of the Base Station.

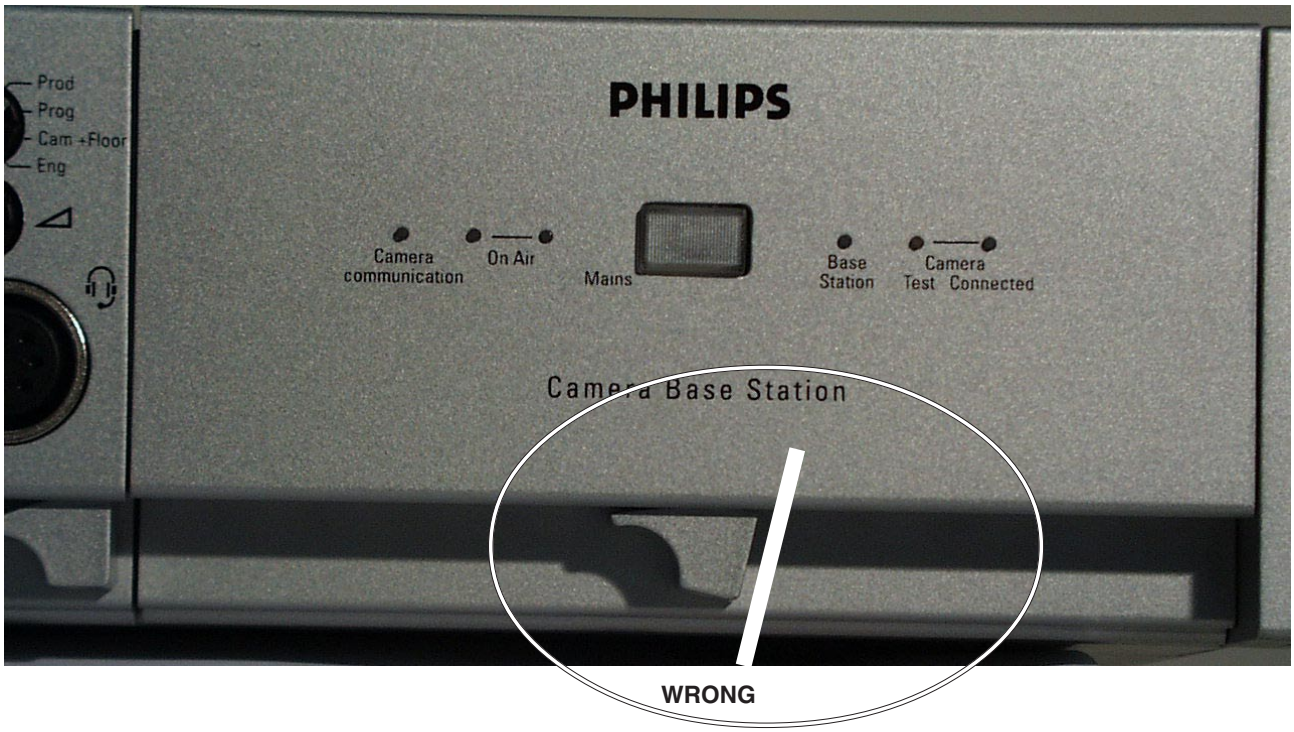


Locking the Power Unit

Put the Power Unit in the leading and push the Power in the Base Station till the locking clicks.
Check if the Power Unit is correct locked.
The correct and wrong locking positions are shown in the pictures below.



CORRECT

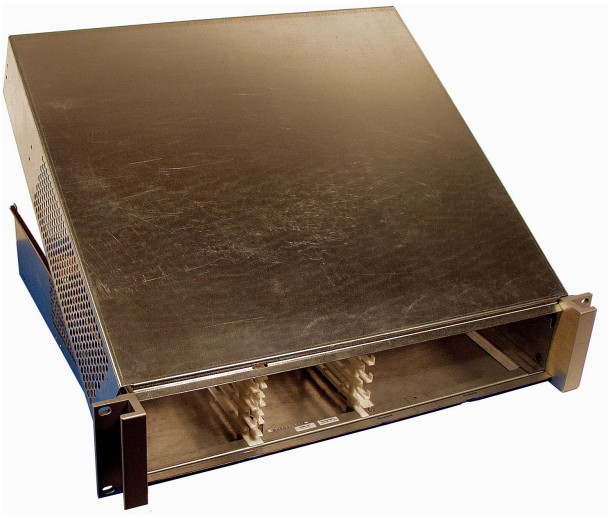


WRONG

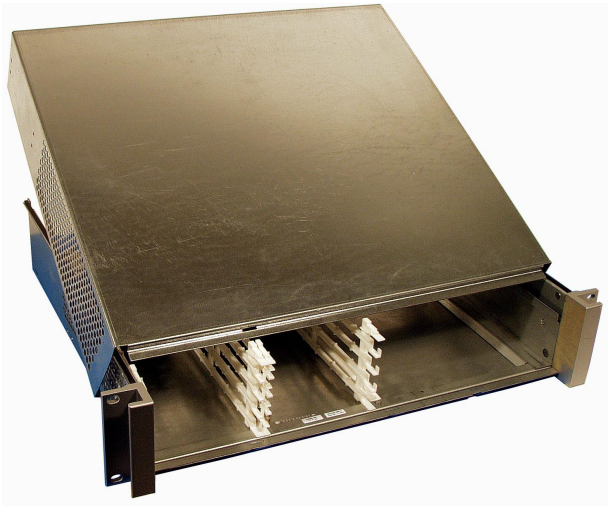
Opening The Base Station

House with top mounted

To remove top, bend both sides outwords and lift backside as shown onthe picture

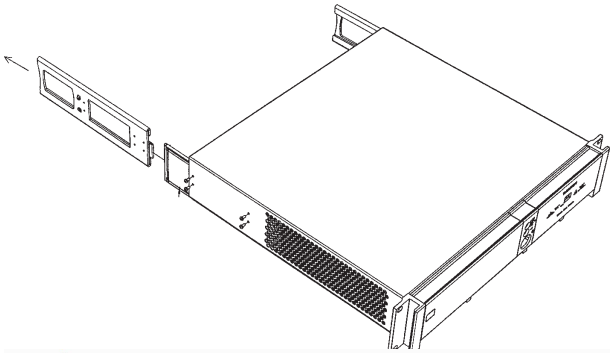


Slide top backwords and lift from house

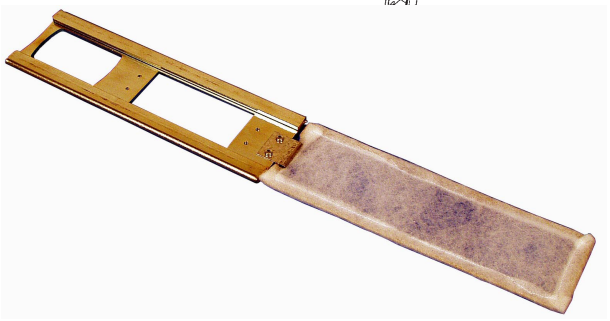


Replacing Dust Filters

Side-inlet

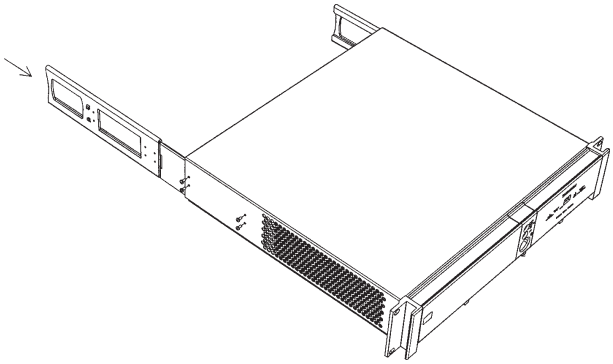


1. Remove 4 screws.
2. Slide back support with dust filter out of base station.



3. Remove dust filter.

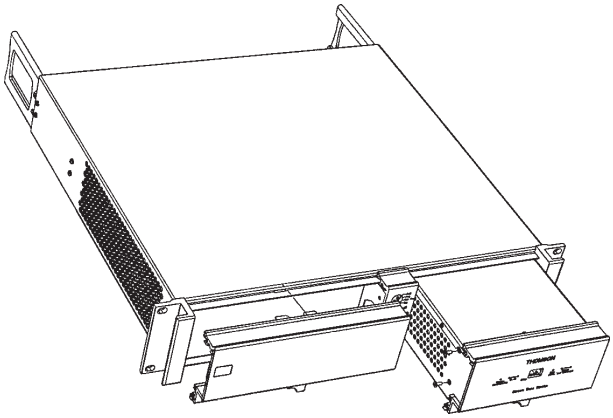
4. Connect clean dust filter to back support



5. Slide back support with dust filter into base station
6. Fix back support with 4 screws

Front-inlet

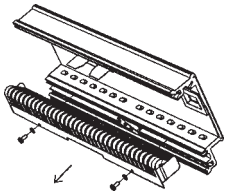
1. Remove PCB frontplate.



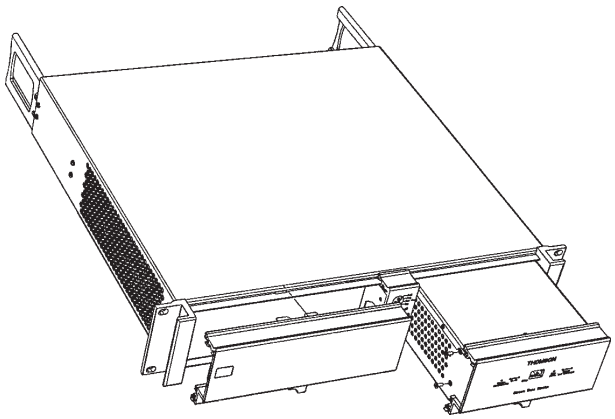
2. Remove dust filter.

3. Place clean dust filter

4. Place PCB frontplate back



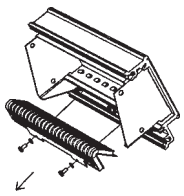
5. Remove frontplate power supply



6. Remove dust filter

7. Place clean dust filter

8. Place front plate power supply back



Section 5

Diagnostics

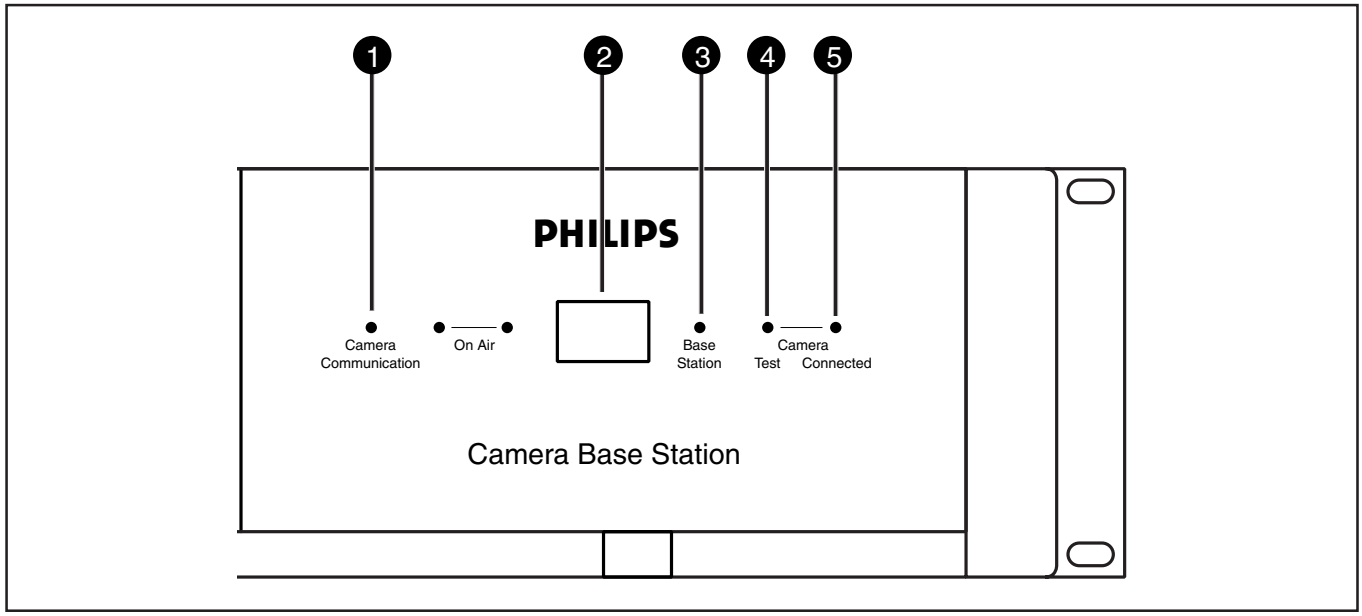
This section contains an explanation of the internal diagnostic system of the base station. The diagnostic messages and the block diagrams are a useful help when fault finding.

Contents

Diagnostic LED Indications

LED Test

When the power to the Base Station is switched on camera communication and on-air LEDs light sequentially. If a LED does not light during start-up that LED is probally defective.



1 Camera Communication

This green LED lights when the communications between Camera and Base Station are OK.

2 Power Switch and indicator

Switches the power supply to the Base Station on and off. A built-in light lights to indicate that power is being supplied to the Base Station.

3 Base Station

This green LED lights when the local power supplies to the Base Station are present.

4 Camera indicator - Test

This bicolour TEST LED lights red or yellow to indicate the Camera and Triax status:

- Red lights continuously – Triax short circuit.
- Red flashes – Triax open circuit.
- Yellow – Camera power switched off with the Operational or Master Control Panel.

5 Camera indicator - Conected

This green CONNECTED LED lights when the Camera is connected and the Camera power is not switched off by the MCP, OCP or Base Station menu.

Diagnostic indicators for camera power

Communication	Test	Connected	
off	off	green	Camera power switched off by the camera power switch.
off	yellow	off	Camera power switched off by the MCP, OCP or base station menu.

Camera test LED (4) flashes red

A red flashing camera test LED (4) indicates an open triax connection (no camera is connected). Other indicators of this condition are:

OCP: Triax LED Flashes red
MCP: *DIAGNOSE \ TRIAX - OPEN*
Menu: *Diagnostics \ Communications \ Camera Connected -No*

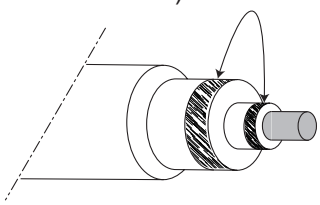
Camera test LED (4) lights continuously (red)

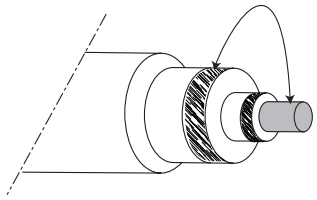
A continuously lighting red camera test LED (4) indicates a short circuit in the triax connection (or an interrupted inner core). Other indicators of this condition are:

OCP: Triax LED red (continuously)
MCP: *DIAGNOSE \ TRIAX - SHORT*
Menu: *Diagnostics \ Board Diagnostics \ Power board \ Triax Status -TSHRT, COPEN or CSHRT (The interpretation of these messages is shown below)*

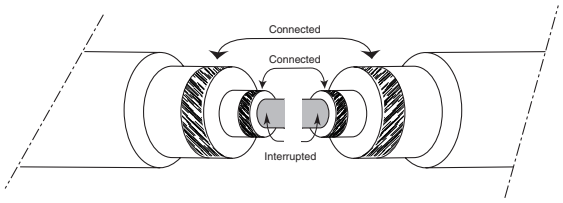
COPEN

Indicates a connection between outer and inner shield or between core and outer shield (when a camera is not connected).



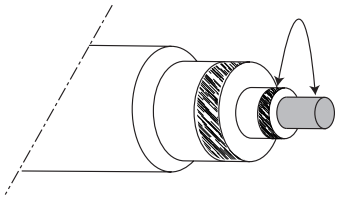


It also indicates an interruped inner core when both shields are connected correctly (when a camera is connected).



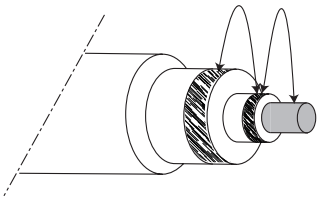
CSHRT

Indicates a short circuit between the core and the inner shield.



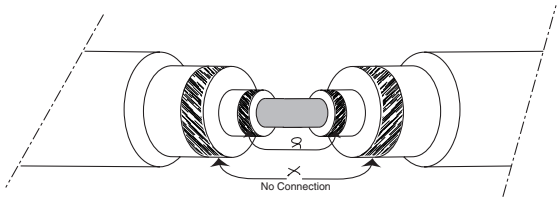
TSHRT

Indicates a short circuit between the inner shield, the outer shield and the core.



SOPEN

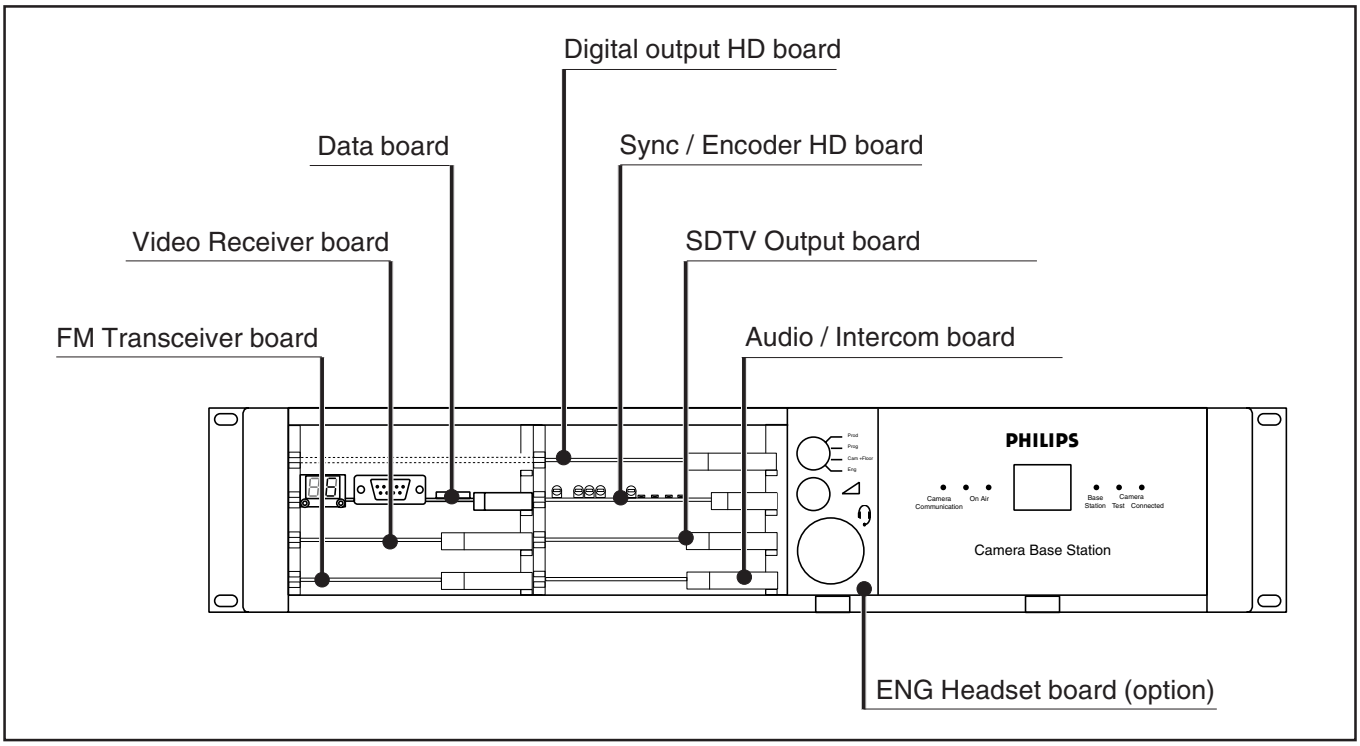
Indicates an open connection in the outer shield of the Triax cable or connector(s).

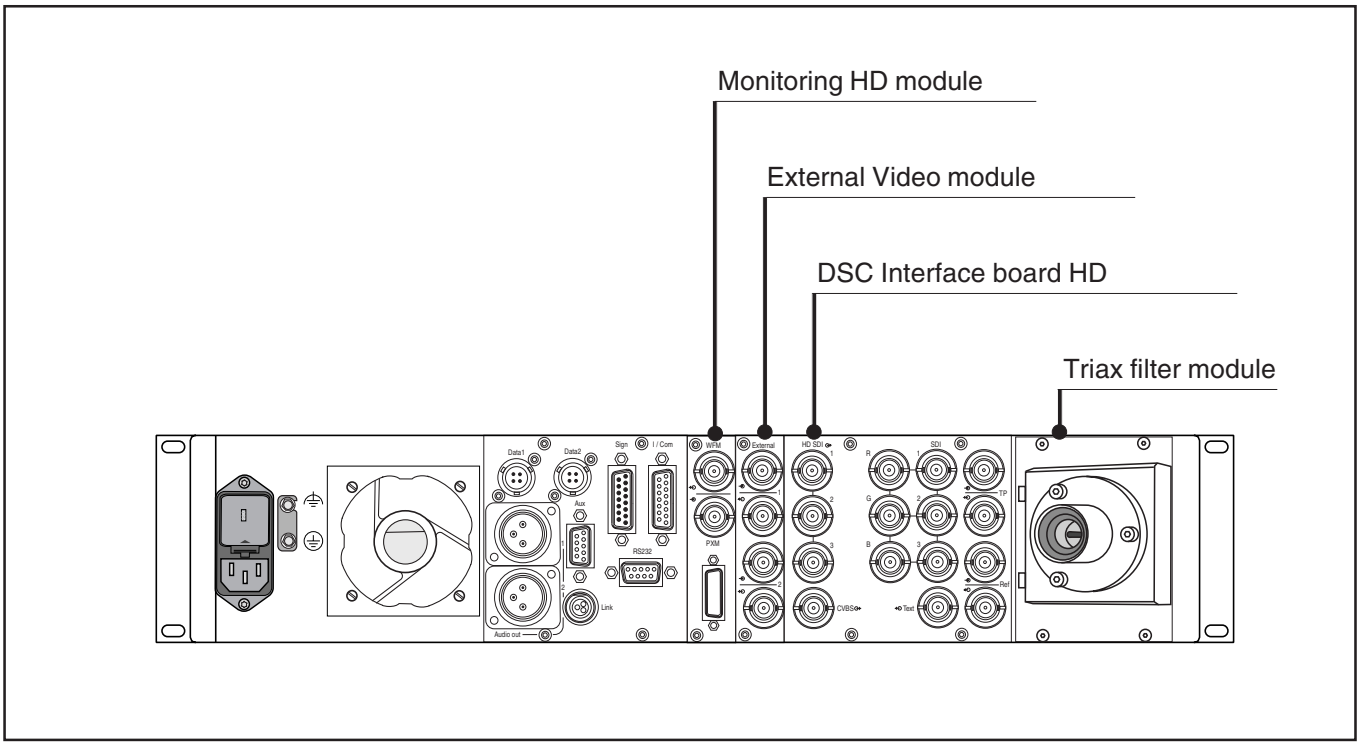


Precautions to avoid Triax problems

- Only use triax cable (with three conductors).
- Ensure that triax connectors (camera, CPU and extension cables) fit snugly into each other.
- Verify that there is no interruption in all three conductors of the triax cable before deploying (including extension triax cables).

Board identification





Sync/Encoder HD board status

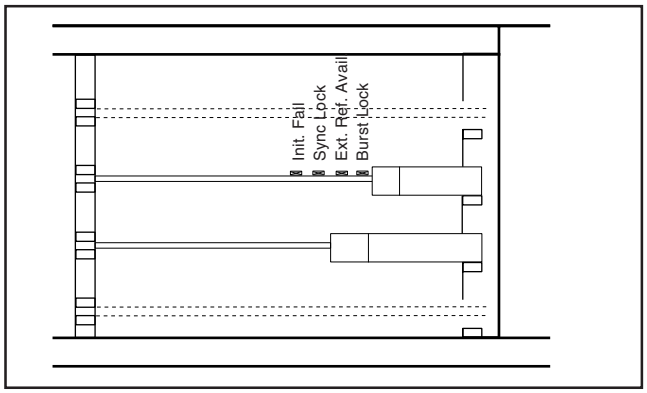
LED indicators on the Sync/Encoder board show the status of the board and the signal locking:

Init. Fail:
- lights (red) if there is a configuration or initialisation error or if the bus clock or video sync pulses are missing.

Sync Lock:
- lights (green) if the Hor. and Vert. lock is OK.

Ext. Ref. Avail.:
- lights (green) if an external sync. signal is present.

Burst Lock:
- lights (green) if the subcarrier/H-phase lock is OK.



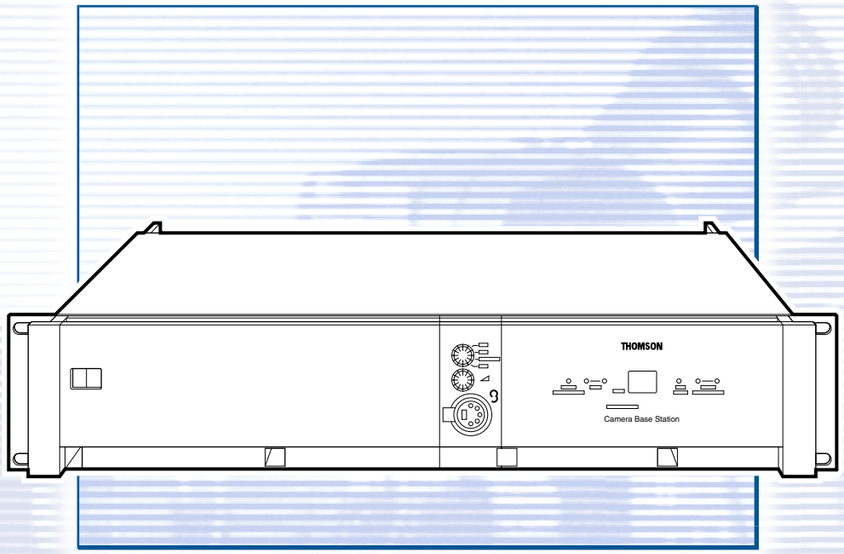
LDK 4502/00

Standard base unit HDTV

Service Manual

LDK 4502/00

Standard base unit HDTV



Service Manual

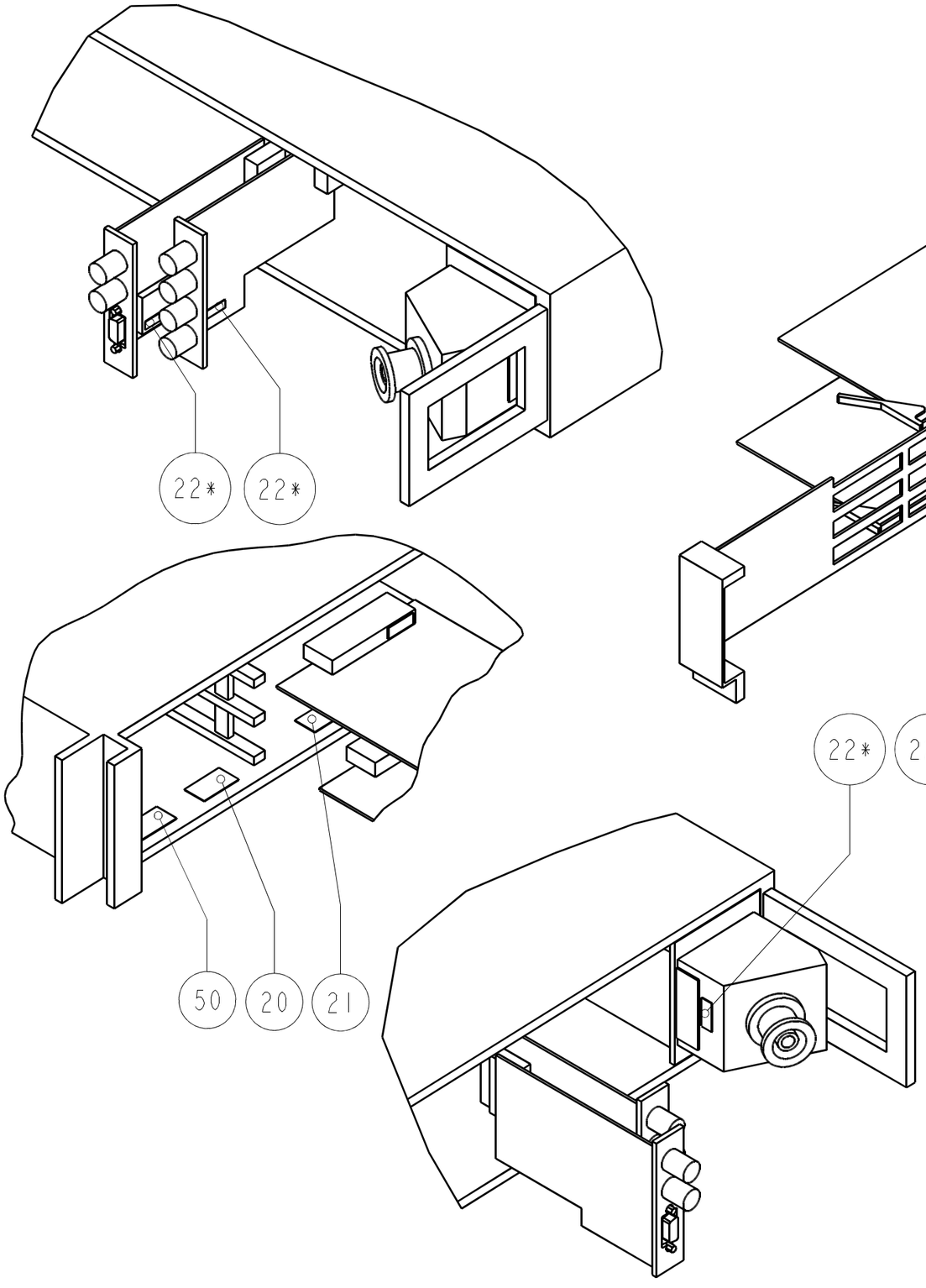
3922 496 48991

3922 496 48991

THOMSON MULTI MEDIA
BROADCAST SOLUTIONS

THOMSON MULTI MEDIA
BROADCAST SOLUTIONS

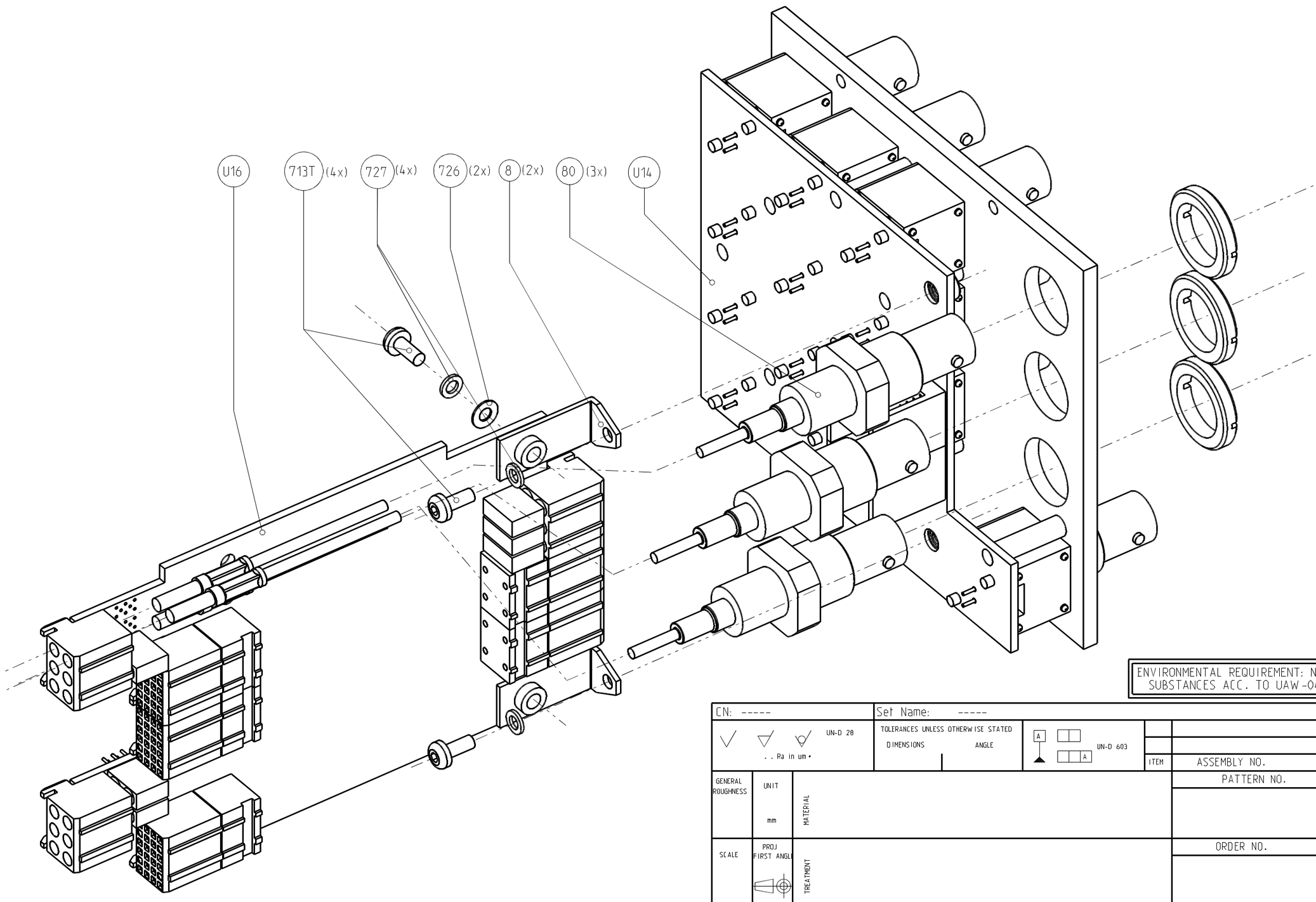
PHILIPS



ENVIRONMENTAL REQUIREMENT: NO BANNED SUBSTANCES ACC. TO UAW-0470/075

CN: -----	Set Name: -----				
UN-D 28 . . Ra in um .	TOLERANCES UNLESS OTHERWISE STATED DIMENSIONS ANGLE	UN-D 603			
			ITEM	ASSEMBLY NO.	QUANT.
GENERAL ROUGHNESS	UNIT mm	MATERIAL		PATTERN NO.	
SCALE	PROJ FIRST ANGLE	TREATMENT		ORDER NO.	QUANT.
CLASS NO. 2XX000	Standard Base Unit HDTV		8926 450 20001		
archived					
NAME Mouthaan	SUPERS xxxx xxx xxxx	3		110-02	A3
EH CHECK	DATE 2001-07-11		PHILIPS ELECTRONICS N.V.		

PHILIPS



ENVIRONMENTAL REQUIREMENT: NO BANNED SUBSTANCES ACC. TO UAW-0470/075

CN: -----	Set Name: -----		
UN-D 28 . . Ra in um .	TOLERANCES UNLESS OTHERWISE STATED DIMENSIONS ANGLE	UN-D 603	ITEM ASSEMBLY NO. QUANT.
GENERAL ROUGHNESS	UNIT mm	MATERIAL	PATTERN NO.
SCALE	PROJ FIRST ANGLE	TREATMENT	ORDER NO. QUANT.
CLASS NO. 2XX000 archived ....-..-.. ....-..-..	Standard Base Unit HDTV	8926 450 20001	2001-11-21
NAME Mouthaan EH CHECK	SUPERS xxxx xxx xxxx DATE 2001-11-05	3	110-03 A3

PHILIPS ELECTRONICS N.V.

POWER	Audio Inter-com	Signal Inter-conn.	Trans mission Output	Sub board	Sync Encoder Board	Video Output	Fm Transceiver/ EXT/TP TX/rec.	HP-LP Filter	Video Receiver	Front End	Data Board	Aux Receiver	Smart Card Option	Head-set option	Signal Conn. Board	DSC Interface / Subboard	DSC Input Option / Sub board	Monitoring Option / Subboard	DSC Interface / Subboard	Power Supply	Power Supply	Power Supply	HP-LP Filter
	X301	X301B	X302	X302B	X303	X304	X305	X305B	X306	X306B	X307	X307B	X308	X310	X311	X321	X322	X323	X324	X420	X421	X422	X540
0VA	C25		C25	C25	C25	C25	B5,C5,C25	B5,C5	B5,C5,C25	B5,C5	B5,C5,C25	B5,C5	B5,C5,C25	C25		A3,4,B3,4,C3,4,D3,4	C3,D3	C3,D3				A1,B1,C1,D1	
0VD	C26		C26	C26	C26	C26	B1,C26	B1	B1,C26	B1	B1,C26	B1	B1,C26	C26		A9,10,B9,10,C9,10,D9,10	C7,8	C7,8			A2,4,B2,4,C2,4,D2,4	D5	
0VD SENSE																						D5	
HOUSING																							
+3.3V	D25		D25	D25	D25	D25	B3,D25	B3	B3,D25	B3	B3,D25	B3	B3,D25	D25			D6,7	D6,7	C1,D1		A3,B3,C3,D3	B4	
+3.3V SENSE																						B4	
+5V	B26		B26	B26	B26	B26	B26,C4	C4	B26,C4	C4	B26,C4	C4	B26,C4	B26			D10	D10	B1		A5,B5,C5,D5		
+5VD	D26		D26	D26	D26	D26	B2,D26	B2	B2,D26	B2	B2,D26	B2	B2,D26	D26			B1,2	B1,2	C6,D6		A1,B1,C1,D1	C4	
+5VD SENSE																						C4	
+5VOLT	C3	C3									B26,C18				B15								
RETURN +5VOLT	B21														B14								
-5V	A26		A26	A26	A26	A26	A26,B4	B4	A26,B4	B4	A26,B4	B4	A26,B4	A26			D11	D11	B6		A6,B6,C6,D6		
+12V RS232	C24	C24									C24		C24		A5								
+15V	B25		B25	B25	B25	B25	B25,C6	C6	B25,C6	C6	B25,C6	C6	B25,C6	B25								A2,B2,C2,D2	
-15V	A25		A25	A25	A25	A25	A25,B6	B6	A25,B6	B6	A25,B6	B6	A25,B6	A25								A3,B3,C3,D3	
TRIAX CORE																				A1,B1,C1,D1			A6,B6,C6,D6
TRIAX SCREEN																				A5,B5,C5,D5			A2,B2,C2,D2
SAFETY GROUND																				A6,B6,C6,D6			A1,B1,C1,D1
SPARE RS232	B17	B17									B13		B13		B1								
REAR HOUSING															A6,14,B18,C1								

	M	o	t	h	e	r	~	B	o	a	r	d
	ZC1	ZC2	ZC3	ZC4	ZC5	ZC6	ZC7	ZC8	ZC9	ZC10	ZC11	ZC12
0VA	2	2	2	2	2	2	2	2	2	2	2	2
HOUSING	1	1	1	1	1	1	1	1	1	1	1	1

A10	bus
A1	output
D12	input
A25	input
A7	input/output

DIG VIDEO	Trans mission Output DSC X207	DSC Interface X207B	Trans mission Output DSC X208	DSC Interface X208B	Video Output /Option Slot X210	Video Output /Option Slot X212	Audio Inter- com X301	Signal Inter- conn. X301B	Trans mission Output X302	Sub board X302B	Sync Encoder Board X303	Video Output /Option Slot X304	Fm Transceiver/EXT/TP TX/rec. X305	Video Receiver X306	Data Board X307	Smart Card Option X308	Head-set option X310	Monitoring Option / Subboard X323	DSC Interface X331
656-0									A23	A23	A23	A23						A15	
656-0 RET									A24	A24	A24	A24						A16	
656-1									B22	B22	B22	B22						B18	
656-1 RET									B21	B21	B21	B21						B17	
656-2									A21	A21	A21	A21						C17	
656-2 RET									A22	A22	A22	A22						C18	
656-3									B20	B20	B20	B20						D18	
656-3 RET									B19	B19	B19	B19						D17	
656-4									A19	A19	A19	A19						B15	
656-4 RET									A20	A20	A20	A20						B16	
656-5									B18	B18	B18	B18						C16	
656-5 RET									B17	B17	B17	B17						C15	
656-6									A17	A17	A17	A17						D15	
656-6 RET									A18	A18	A18	A18						D16	
656-7									B16	B16	B16	B16						B14	
656-7 RET									B15	B15	B15	B15						B13	
656-8									A15	A15	A15	A15						C13	
656-8 RET									A16	A16	A16	A16						C14	
656-9									B14	B14	B14	B14						D14	
656-9 RET									B13	B13	B13	B13						D13	
656 CLOCK							B24	B24	B24	B24	B24	B24	B24	B24	B24	B24	B24	A18	
656 CLOCK RET							B23	B23	B23	B23	B23	B23	B23	B23	B23	B23	B23	A17	
656 PLUS-0									C23	C23	C23	C23							
656PLUS-0 RET									C24	C24	C24	C24							
656 PLUS-1									D22	D22	D22	D22							
656 PLUS-1 RET									D21	D21	D21	D21							
656 PLUS-2									C21	C21	C21	C21							
656 PLUS-2 RET									C22	C22	C22	C22							
656 PLUS-3									D20	D20	D20	D20							
656 PLUS-3 RET									D19	D19	D19	D19							
656 PLUS-4									C19	C19	C19	C19							
656 PLUS-4 RET									C20	C20	C20	C20							
656 PLUS-5									D18	D18	D18	D18							
656 PLUS-5 RET									D17	D17	D17	D17							
656 PLUS-6									C17	C17	C17	C17							
656 PLUS-6 RET									C18	C18	C18	C18							
656 PLUS-7									D16	D16	D16	D16							
656 PLUS-7 RET									D15	D15	D15	D15							
656 PLUS-8									C15	C15	C15	C15							
656 PLUS-8 RET									C16	C16	C16	C16							
656 PLUS-9									D14	D14	D14	D14							
656PLUS-9 RET									D13	D13	D13	D13							
656 PLUS CLOCK							D24	D24	D24	D24	D24	D24	D24	D24	D24	D24	D24		
656 PLUS CLOCK RET							D23	D23	D23	D23	D23	D23	D23	D23	D23	D23	D23		
DSC A1																			C1
DSC A1 RET																			C2,D1,2
DSC A2																			A2
DSC A2 RET																			A1,B1,2
DSC A3																			D3
DSC A3 RET																			C3,4,D4
DSC B1																			B4
DSC B1 RET																			A3,4,B3
DSC B2																			A6
DSC B2 RET																			A5,B5,6
DSC B3																			D6
DSC B3 RET																			C5,6,D5
DSC OUT						2													
DSC TRANS	**1**	1																	
DSC USER A			**1**	1															
DSC USER B			**2**	2															
OPTION VIDEO 1																			D8
OPTION VIDEO 1 RET																			D7
OPTION VIDEO 2																			D10
OPTION VIDEO 2 RET																			D9
OPTION VIDEO 3																			D12
OPTION VIDEO 3 RET																			D11
PHASE 1					1														
PHASE 2					2														
PHASE 3						1													
							A10	bus											
							A1	output											
							D12	input											
							D11	input											
							A7	input/output											

CONTROL	Audio Inter-com X301	Signal Inter-conn. X301B	Trans mission Output X302	Sub board X302B	Sync Encoder Board X303	Sub board X303B	Video Output / Option Slot X304	Sub board X304B	Fm Transceiver / EXT/TP TX/rec. X305	HP-LP Filter X305B	Video Receiver X306	Front End X306B	Data Board X307	Aux Re-ceiver X307B	Smart Card Option X308	Head-set Option X310	Signal Conn. Board. X311	DSC Input Option / Sub board X322	Monitoring Option / Subboard X323	DSC Inter-face / Sub board X324	Power Supply X422
A-INT	A9	A9											A15			A9					
A-SCL	A8	A8											A14			A8					
A-SDA	A7	A7											A13			A7					
B-INT			A9	A9									A18							B4	
B-SCL			A8	A8									A17							B3	
B-SDA			A7	A7									A16							B2	
C-INT					A9	A9							A20					B5			
C-SCL					A8	A8							A19					B4			
C-SDA					A7	A7							A21					B3			
D-INT							A9	A9,B3					A24						B3		
D-SCL							A8	A8,B5					A23						B5		
D-SDA							A7	A7,B4					A22						B4		
E-INT											A9	A9	A9	A9							
E-SCL											A8	A8	A8	A8							
E-SDA											A7	A7	A7	A7							
F-INT									A9	A9			B10	B10							
F-SCL									A8	A8			B9	B9							
F-SDA									A7	A7			B8	B8							
G-INT													B11	B11	A9						
G-SCL													C11	C11	A8						
G-SDA													C10	C10	A7						
H-INT													C9	C9							D6
H-SCL													C8	C8							B5
H-SDA													C7	C7							C5
DATA 1	A15	A15											C13		C13		A15				
DATA N1	A16	A16											C14		C14		A16				
DATA 2	A17	A17											C15		C15		A17				
DATA N2	A18	A18											C16		C16		A18				
DATA BS CAM									A16				D11	D11							
DATA BS CAM RET									A15,17				D10	D10							
DATA CAM BS									A20				D9	D9							
DATA CAM BS RET									A19,21				D8	D8							
DATA LINK	A10	A10	A10	A10	A10	A10	A10	A10	A10	A10	A10	A10	A10	A10	A10	A10	A12	A10	A10		
DATA LINK N	A11	A11	A11	A11	A11	A11	A11	A11	A11	A11	A11	A11	A11	A11	A11	A11	A13	A11	A11		
MEASURING BUS	A1	A1	A1	A1	A1	A1	A1	A1	A1	A1	A1	A1	A1	A1	A1	A1		A1	A1	A1	
MASTER RESET	D12	D12	D12	D12	D12	D12	D12	D12	D12	D12	D12	D12	D12	D12	D12	D12		D12	D12		
RS-CTS	A22	A22											B20		B20		A4				
RS-DGND	A19	A19											B17		B17		A1				
RS-DSR	A20	A20											B18		B18		A2				
RS-DTR	B20	B20											B16		B16		B4				
RS-RTS	A21	A21											B19		B19		A3				
RS-RXD	B18	B18											B14		B14		B2				
RS-TXD	B19	B19											B15		B15		B3				
ATTENUATOR SW.											C9	C9	D3	D3							
CARRIER PRESENT											A19		C3	C3							
GAIN LOCK											C11	C11	D4	D4							
SPARE DATA 1													C19		C19						
SPARE DATA 2													C20		C20						

A10	bus
A1	output
D12	input
A19	input
A7	input/output

ANALOGUE VIDEO	Trans mission Output X302	Sub board X302B	Sync Encoder Board X303	Sub board X303B	Video Output / Option Slot X304	Sub board X304B	Fm Transceiver /EXT/TP TX/rec. X305	HP-LP Filter X305B	Video Receiver X306	Front End X306B	Data Board X307	Aux Receiver X307B	DSC Interface / Subboard X321	DSC Input Option / Subboard X322	Monitoring Option / Subboard X323	DSC Interface / Subboard X324	DSC Interface X331			
B,B-Y USER	C9	C9											B2							
B,B-Y USER RET	C10	C10											B1							
(B-Y MON)					B9	B9			C1	C1					C6					
(B-Y MON RET)					B10	B10			C2	C2					C5					
B-Y OPTION					D8	D8			D10	D10										
B-Y OPTION RET					D7,9	D7,9			D11	D11										
B-Y TRANS	C1	C1							D21											
B-Y TRANS RET	C2	C2							C20,21,22,D20,22											
B-Y USER	D10	D10											C1							
B-Y USER RET	D11	D11											C2							
G,Y USER	C5	C5											D5							
G,Y USER RET	C6	C6											D6							
R,R-Y USER	C7	C7											A1							
R,R-Y USER RET	C8	C8											A2							
(R-Y MON)					C11	C11			D4	D4					C9					
(R-Y MON RET)					C10	C10			D3	D3					C10					
R-Y OPTION					D5	D5			D8	D8								A10	bus	
R-Y OPTION RET					D4,6	D4,6			D9	D9										
R-Y TRANS	D2	D2							D18									A1	output	
R-Y TRANS RET	D1	D1							C17,18,19,D17,19											
R-Y USER	D8	D8											D7					D12	input	
R-Y USER RET	D9	D9											D8					C2	input	
(Y-MON)					C9	C9			D2	D2					C11			A7	input/output	
(Y-MON RET)					C8	C8			D1	D1					B11					
Y-OPTION					D2	D2			D6	D6										
Y-OPTION RET					D1,3	D1,3			D5,7	D5,7										
Y TRANS	D4	D4							D15											
Y TRANS RET	D3,5	D3,5							C14,15,16,D14,16											
Y USER	D6	D6											D2							
Y USER RET	D7	D7											D1							
AUX1 VIDEO	B4	B4	A13								C1	C1								
AUX1 VIDEO RET	B5	B5	A14								C2	C2								
AUX2 VIDEO									A21		D5	D5								
AUX2 VIDEO RET									A20,22		D6	D6								
BLACKBURST			B4	B4									A8							
BLACKBURST RET			B3	B3									A7							
BLACKBURST SELECT			B11	B11												C5				
CVBS1			D2	D2									D12				C11			
CVBS1 RET			D1,5	D1,5	B2								D11				C12			
CVBS2			D3	D3	B1	B1														
CVBS2 RET					B2	B2														
CVBS3			D4	D4											D1					
CVBS3 RET															D2					
EXT. 1 MON.			C9	C9											D4					
EXT. 1 MON. RET			C10	C10											D5					
EXT. 2 MON.			C11	C11											D8					
EXT. 2 MON. RET															D9					
EXT 1 VIDEO			D8	D8										D4						
EXT 1 VIDEO RET			D9	D9										D5						
EXT 2 VIDEO			D10	D10										D1						
EXT 2 VIDEO RET			D11	D11										D2						
EXT. VIDEO CAM			D6	D6			D5	D5												
EXT. VIDEO CAM RET			D7	D7			D4,6	D4,6												
HV-LOCK	B3	B3	C13				C7	C7												
KEY VIDEO	B1	B1							D13											
KEY VIDEO RET	B2	B2							C13											
GENLOCK VIDEO			B6	B6									B5				A9			
GENLOCK VIDEO RET			B5	B5									B6				A10			
AUX VIDEO																D5				
AUX VIDEO RET																D4				
AUX VIDEO SELECT			C8	C8												C3				
REF VIDEO																	A11			
REF VIDEO RET																	A12			
AUX VIDEO USER					D10	D10	C1	C1			D2	D2				D3				
AUX VIDEO USER RET					D11	D11	C2	C2			D1	D1				D2				
TEXT BLACK			B10	B10											B10					
TEXT RET			B9	B9											B9					
TEXT WHITE			B8	B8											B8					
TEXT VIDEO MON			C7	C7											C2					
TEXT VIDEO			C5	C5									C8				C9			
TEXT VIDEO RET			C6	C6									C7		C1		C10			
TP VIDEO			C1	C1									A6				B7			
TP VIDEO RET			C2	C2									A5				B8			
TP/AUX VIDEO OUT																	B10			
TP/AUX VIDEO OUT RET																	B9			
TP VIDEO CAM			B2	B2			D2	D2												
TP VIDEO CAM RET			B1	B1			D1,3	D1,3												
VIDEO 1					C2	C2							C11							
VIDEO 1 RET					C1	C1							C12							
VIDEO 2					C4	C4							B12							
VIDEO 2 RET					C3	C3							B11							
VIDEO 3					C6	C6							A11							
VIDEO 3 RET					C5	C5							A12							

AUDIO	Audio Intercom X301	Signal Inter-conn. X301B	Fm Transceiver/EX T/TP TX/rec. X305	HP-LP Filter X305B	Headset option X310	Signal Conn. Board X311	Option Tuchel X574	Option XLR5 X574
AUDIO 1	B1	B1	D18					
AUDIO 1 RET	B2	B2	D17,D19					
AUDIO 1 OUT+	D1	D1				D13		
AUDIO 1 OUT-	D2	D2				D14		
AUDIO 1 OUT SHIELD	D3	D3				D15		
AUDIO 2	D7	D7	D21					
AUDIO 2 RET	D8	D8	D20,D22					
AUDIO 2 OUT+	D4	D4				D16		
AUDIO 2 OUT-	D5	D5				D17		
AUDIO 2 OUT SHIELD	D6	D6				D18		
+SENSE AUD 1	C1	C1				C14		
-SENSE AUD 1	C2	C2				C15		
+SENSE AUD 2	C4	C4				C17		
-SENSE AUD 2	C5	C5				C18		

INTERCOM	Audio Intercom X301	Signal Inter-conn. X301B	Fm Transceiver/EX T/TP TX/rec. X305	HP-LP Filter X305B	Headset option X310	Signal Conn. Board X311	Option Tuchel X574	Option XLR5 X574
CAM MIC	C21	C21	C23		C21			
CAM MIC RET	C20	C20	C22,24		C20			
ENG IN +	D16	D16				D7		
ENG IN -	D17	D17				D8		
SHIELD ENG	D15	D15			D6	D6		
ENG OUT +	C14	C14			D4	C3		
ENG OUT -	C15	C15			D5	C4		
SHIELD ENG	C13	C13			D6	C2		
ENG TO CAM	C8	C8	D10	D10	C1,D16			
ENG TO CAM RET	C9	C9	D11	D11	C2,D17			
MIC BS	C11	C11			B22			
MIC BS RET	C10	C10	C10		B21			
MIC BS SW			C9		C8			
MIC BS RET					C9			
PRIVATE DATA IN	A24	A24				A10		
PRIVATE DATA IN RET	A23	A23				A9		
PRIVATE DATA OUT	B22	B22				B16		
PRIVATE DATA OUT RET	B21	B21				B17		
PROD IN +	D9	D9				D1		
PROD IN -	D10	D10				D2		
SHIELD PROD	D11	D11			D3	D3		
PROD OUT +	D13	D13			D1	D4		
PROD OUT -	D14	D14			D2	D5		
PROD TO CAM	B3	B3	D14		B3,D9			
PROD TO CAM RET	B4	B4	D13,15		B4,D10			
PROGR IN +	D19	D19				D10		
PROGR IN -	D20	D20				D11		
SHIELD PROGR	D18	D18				D9		
PROGR TO CAM	D22	D22	D8	D8	D19,22			
PROGR TO CAM RET	D21	D21	D7,9	D7,9	D20,21			
TRACKER/FLOOR MIC	C23	C23	C16		C23			
TRACKER/FLOOR MIC RET	C22	C22	C15,17		C22			
MICR							3	2
MICR RET							4	1
TEL LEFT							1	4
TEL RET							2,6	3
TEL RIGHT							5	5

A10	bus	
A1	output	
D12	input	
D8	input	
A7	input/output	

BOUNDARY SCAN	Audio Inter-com	Signal Inter-conn.	Trans mission Output	Sub board	Sync Encoder Board	Sub board	Video Output / Option Slot	Sub board	Fm Transceiver / EXT/TP TX/rec.	HP-LP Filter	Video Receiver	Front End	Data Board	Aux Receiver	Smart Card Option	Headset option	DSC Input Option / Sub board	Moni-toring Option / Sub board	DSC Inter-face / Sub board
	X301	X301B	X302	X302B	X303	X303B	X304	X304B	X305	X305B	X306	X306B	X307	X307B	X308	X310	X322	X323	X324
SCK	B10	B10	B10	B10			C13		B10	B10	B10	B10				B10			
SDI	A13	A13	A13	A13			A13		A13		A13					A24			
SDO	A14	A14	A14	A14			A14		A14		A14					A21			
SWS	B11	B11	B11	B11			C14		B11	B11	B11	B11				B11			
TCK	A3	A3	A3	A3	A3	A3	A3	A3	A3	A3	A3	A3	A3	A3	A3	A3	A3	A3	A3
TDA					A5	A5	A6	A6											
TDB			A5	A5	A6	A6													
TDC			A6	A6												A5			
TDD	A5	A5														A6			
TDE	A6	A6							B8	B8									
TDF									A5	A5									
TDG									A6	A6	B8	B8							
TDH											A5	A5							
TDI											A6	A6	D7	D7					
TDJ													A5	A5					
TDK													A6	A6	A5				
TDL							B8	B8							A6				A5
TDM																	A5		A6
TDN																	A6	A5	
TDO							A5	A5										A6	
TMS	A2	A2	A2	A2	A2	A2	A2	A2	A2	A2	A2	A2	A2	A2	A2	A2	A2	A2	A2
TWE	B7	B7	B7	B7	B7	B7	B7	B7	B7	B7	B7	B7	B7	B7	B7	B7	B7	B7	B5
NTRST	A4	A4	A4	A4	A4	A4	A4	A4	A4	A4	A4	A4	A4	A4	A4	A4	A4	A4	A4
	A10		bus																
	A1		output																
	D12		input																
	B7		input																
	A7		input/output																

SIGNAL-LING

	Audio Inter-com X301	Signal Inter-conn. X301B	Trans mission Output X302	Data Board X307	Signal Conn. Board X311
AN 0	C6	C6		B21	C10
AN 1	C7	C7		B22	C11
AUDIO 1 LEVEL	B15	B15		C21	B11
AUDIO 2 LEVEL	B16	B16		C22	B12
BALANCE AUDIO 1					C13
BALANCE AUDIO 2					C16
CALL EXT	B5	B5		D15	B5
CALL EXT RET	B6	B6		D16	B6
CALL TO EXT	B8	B8		D17	B7
CALL TO EXT RET	B9	B9		D18	B8
ISO EXT	C19	C19		D21	C8
ISO EXT RET	C18	C18		D22	C7
PREVIEW TO EXT	B13	B13		D19	B9
PREVIEW TO EXT RET	B14	B14		D20	B10
ON AIR EXT	C17	C17		D13	C6
ON AIR EXT RET	C16	C16		D14	C5
	A10		bus		
	A1		output		
	D12		input		
	C19		input		
	A7		input/output		

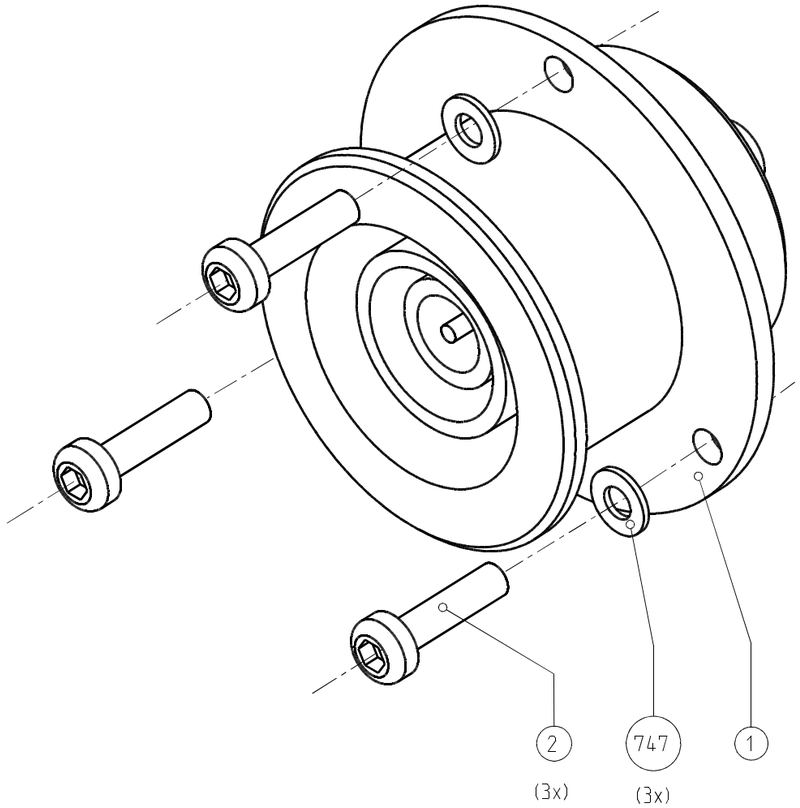
SYSTEM

	Audio Inter-com X301	Signal Inter-conn. X301B	Trans mission Output X302	Sub board X302B	Sync Encoder Board X303	Sub board X303B	Video Output / Option Slot X304	Sub board X304B	Fm Trans-ceiver / EXT/TP TX/rec. X305	HP-LP Filter X305B	Video Receiver X306	Front End X306B	Data Board X307	Aux Receiver X307B	Smart Card Option X308	Headset option X310	DSC Input Option / Sub board X322	Moni-toring Option / Sub board X323	Power Supply X422
FRAME SYNC	C12	C12	C12	C12	C12	C12	C12	C12	C12	C12	C12	C12	C12	C12	C12	C12		C12	
H-DRIVE	A12	A12	A12	A12	A12	A12	A12	A12	A12	A12	A12	A12	A12	A12	A12	A12		A12	
V-DRIVE	B12	B12	B12	B12	B12	B12	B12	B12	B12	B12	B12	B12	B12	B12	B12	B12		B12	
MAINS FREQ.					C14														D4
FRAME SYNC EXT																	C11		
H-DRIVE EXT																	C9		
V-DRIVE EXT																	C10		
	A10	bus																	
	A1	output																	
	D12	input																	
	B12	input																	
	A7	input/output																	

TRANS-MISSION

	Fm Trans-ceiver / EXT/TP TX/rec. X201	HP-LP Filter X201B	Fm Trans-ceiver / EXT/TP TX/rec. X202	HP-LP Filter X202B	HP-LP Filter X204	Video Receiver X205	Front End X205B	Front End X214	Front End X215	Front End X216	Aux Receiver X225	Aux Receiver X226	HP-LP Filter X244	Trans mission Output X302	Sub board X302B	Video Output / Option Slot X304	Fm Transceiver / EXT/TP TX/rec. X305	Video Receiver X306	Front End X306B
AGC R-Y/B-Y																		C8	C8
AGC Y																		C7	C7
SYSTEM AGC B-Y														C4	C4	B11		B18	
SYSTEM AGC R-Y/B-Y														B6	B6	B6		B17	
SYSTEM AGC Y														C3	C3	C7		B16	
INTERCOM\HVLOCK\DATA TX			1	1															
AUDIO/INTERCOM RX			2	2															
EXT/TP TX	2	2																	
HF-VIDEO					x			x											
HF-VIDEO G						2	1												
HF-VIDEO R/B						1	2												
HF-AUX VIDEO									x		x								
HF-AUX VIDEO USER										x		x							
SDINT-DATA														B8			A24		
TRIAX													x						
	A10	bus																	
	A1	output																	
	D12	input																	
	B12	input																	
	A7	input/output																	

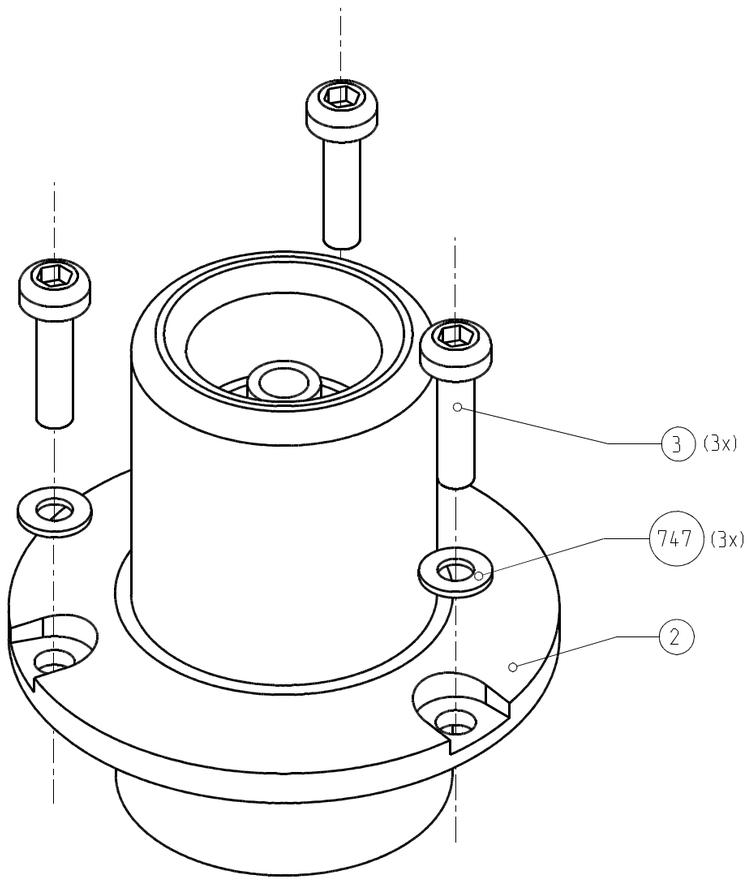
PHILIPS



ENVIRONMENTAL REQUIREMENT: NO BANNED SUBSTANCES ACC. TO UAW-0470/075

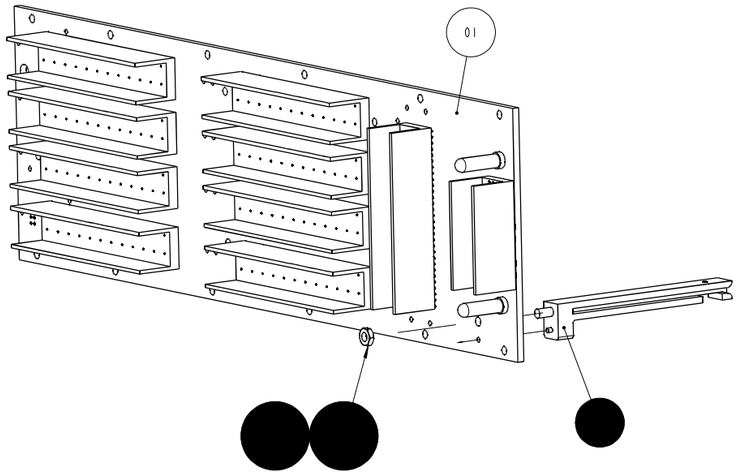
CN: -----	Set Name: -----				
UN-D 28 . . Ra in um •	TOLERANCES UNLESS OTHERWISE STATED DIMENSIONS / ANGLE	UN-D 603			
			ITEM	ASSEMBLY NO.	QUANT.
GENERAL ROUGHNESS	UNIT mm	MATERIAL		PATTERN NO.	
SCALE	PROJ FIRST ANGLE	TREATMENT		ORDER NO.	QUANT.
CLASS NO. 2XX000	Triax connector assy Fischer		3922 407 30530		
archived					
NAME Mouthaan	SUPERS xxxx xxx xxxx	1		110 - 1	A4
EH CHECK	DATE 2001-10-17	© PHILIPS ELECTRONICS N.V.			

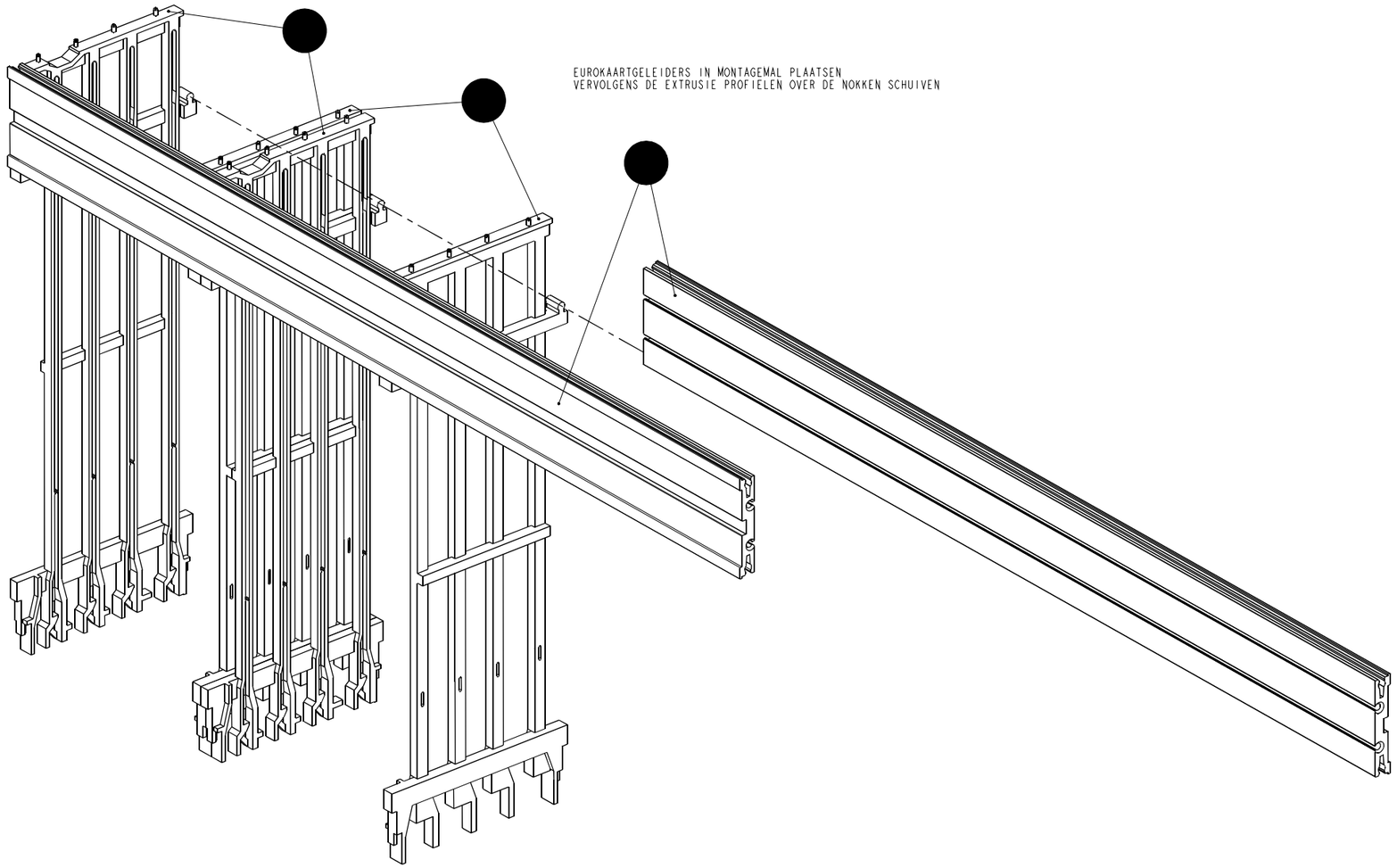
PHILIPS



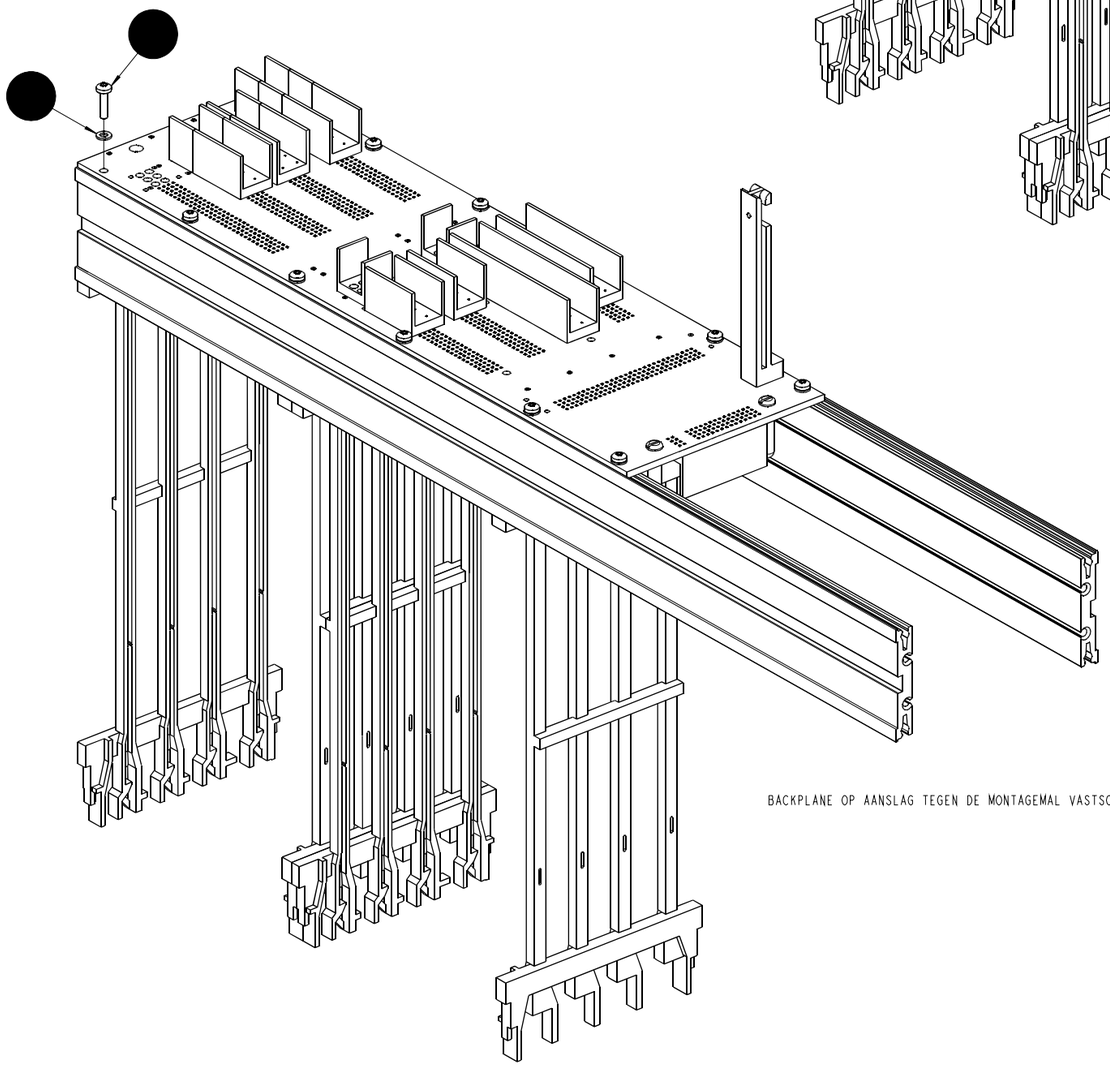
ENVIRONMENTAL REQUIREMENT: NO BANNED SUBSTANCES ACC. TO UAW-0470/075

CN: -----	Set Name: -----			
UN-D 28 . . Ra in um •	TOLERANCES UNLESS OTHERWISE STATED DIMENSIONS / ANGLE	UN-D 603	ITEM	ASSEMBLY NO. / QUANT.
GENERAL ROUGHNESS / UNIT mm / MATERIAL				PATTERN NO.
SCALE / PROJ FIRST ANGLE / TREATMENT				ORDER NO. / QUANT.
CLASS NO. 2XX000 archived ....-..-.. ....-..-..	Triax connector assy trilock	3922 407 30550		
NAME Mouthaan	SUPERS xxxx xxx xxxx	1	110 - 1	A4
EH / CHECK	DATE 2001-10-16	© PHILIPS ELECTRONICS N.V.		

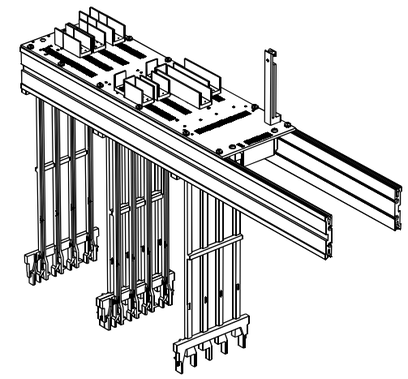




EUROKAARTGELEIDERS IN MONTAGEMAL PLAATSEN
VERVOLGENS DE EXTRUSIE PROFIELEN OVER DE NOKKEN SCHUIVEN



BACKPLANE OP AANSLAG TEGEN DE MONTAGEMAL VASTSCHROEVEN

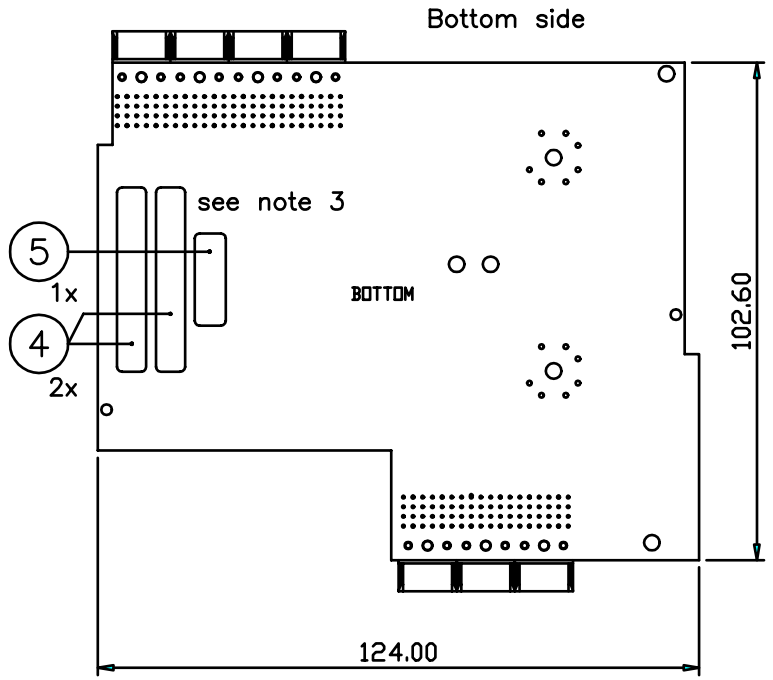


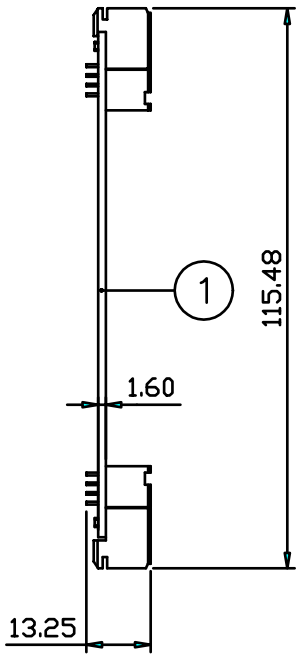
THOMSON nr. 3922 407 33510 blad 112-01

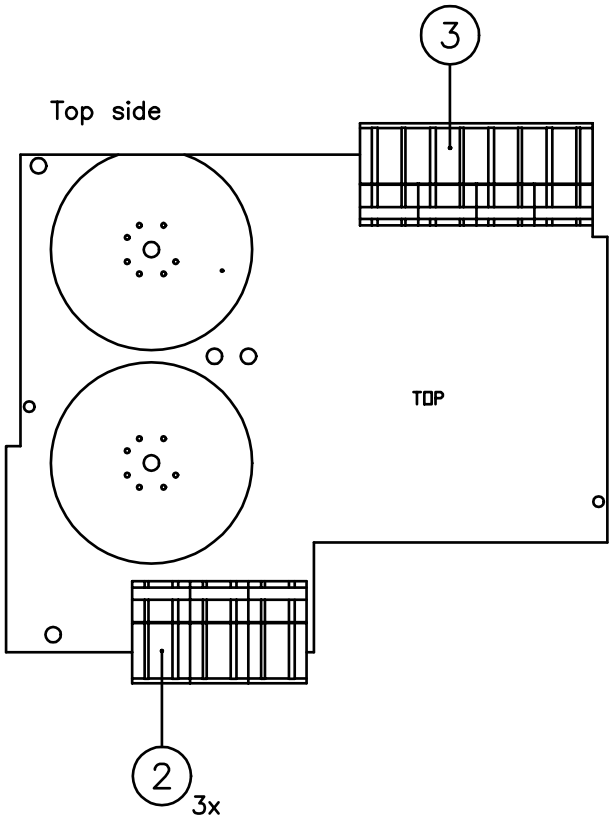
Ruwheid:	Eenheid : Millimeter (mm)				
		08	20-02-2002	GvdH	Tekst op tekening gewijzigd naar aangewezenen THOMSON
Algemene Toleranties : Lineair: ±0.3 < 300 mm ±0.5 > 300 mm Hoek :	Amerikaanse proj.	NO.	DATUM	DOOR	WIJZIGING
		TEKEN- EN FABRIKAGEVOORSCHRIFTEN VOLGENS MINKELS TEKENNORM			
MINKELS BASICALLY TO MOUSE ELECTRONICS		Benaming: BACKPLANE SPARE DVS BASESTATION			
Eigendom van Minkels B.V.		Tekeningnummer : 004NC-012-0B			
Get. W.v.d.W.	Datum :12-Mar-01	Formaat : A1	Schaal : 1/1	Bladnr. :1/1	

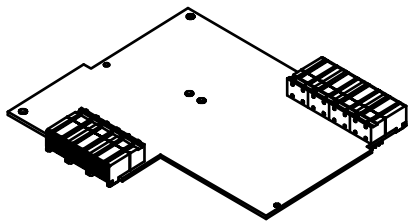
MODEL NAAM : 004NC012_PROCESS

PRODUCT NUMBER
53015-001







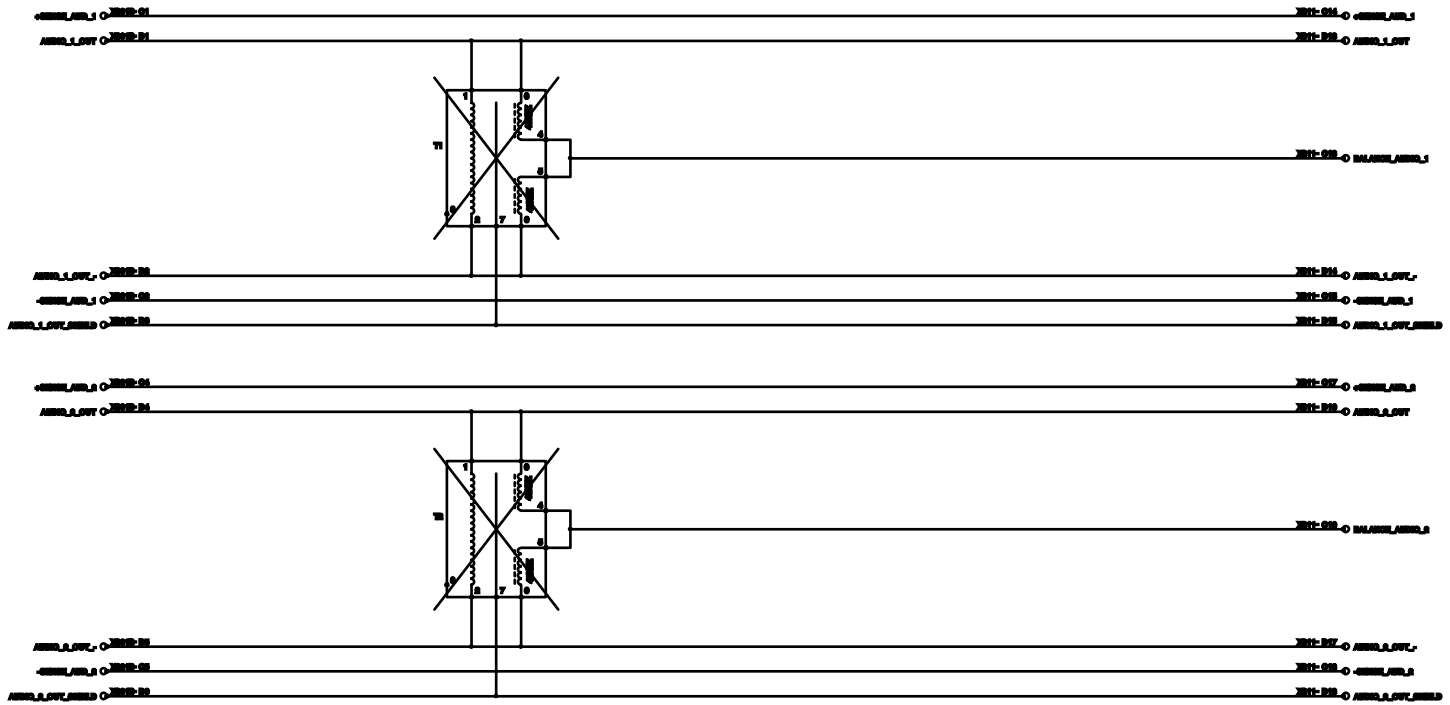

SCALE 1:2

ENVIRONMENTAL REQUIREMENT: NO BANNED SUBSTANCES ACC. TO UAW-0470/075

mat'l. code				tolerances unless otherwise specified				INSPECTION COPY	ELECTRONICS www.fciconnect.com
ltr	ecn no	dr	date						
A	H90672	BLJ	991217	linear				projection	title: Signal interconn. B.S. assy
B	H00239	BLJ	000524						
				angles					
				dr	B.LIBREGTS	991217		mm	product family: pcb assy's / code: 210
				engr	B.Libregts	991217			size: A3 / dwg no: 53015 / sheet: 2 of –
				chr	B.Paagman	991217		scale 1:1	
				appd	B.Libregts	991217			
sheet index	revision sheet								

form A3

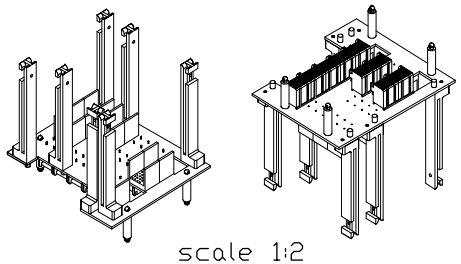
FCI Partnumber	Customer Partnumber
53015 - 001	3922 406 5777.1



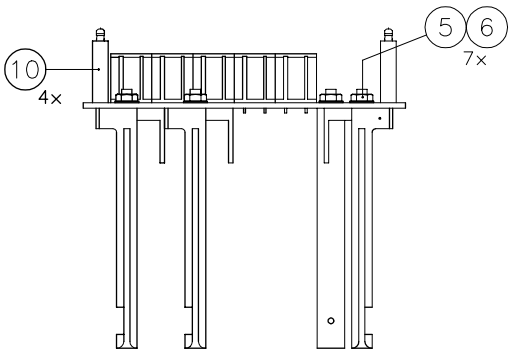
COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED

mat'l code				CIRCUIT DIAGRAM			SMTC COPY	FCI ELECTRONICS www.fciconnect.com
ltr	ecn no	dr	date					title Signal Interconn. B.S. Assy
A	H10343	EBR	21-09-01					
				dr	E.Brinkhof	21-09-01		product family Backplane / CODE 210
				engr	B.Libregts	21-09-01		size A3 / dwg no 53015 / sheet 3 of -
				chr	R.Bijnevelt	21-09-01		
				appd	B.Paagman	21-09-01		
sheet index	revision							
	revision							

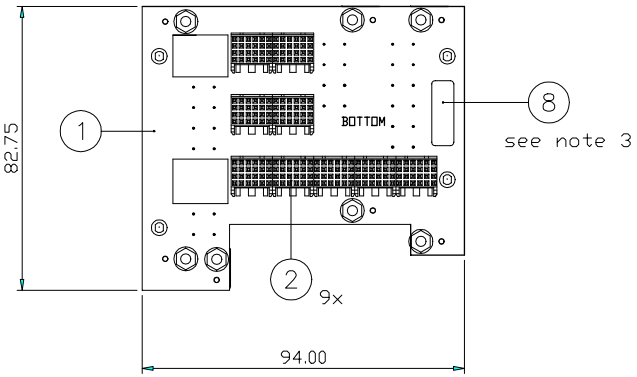
Product number
53017-001

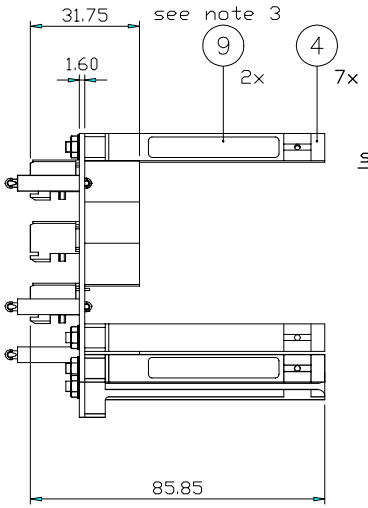


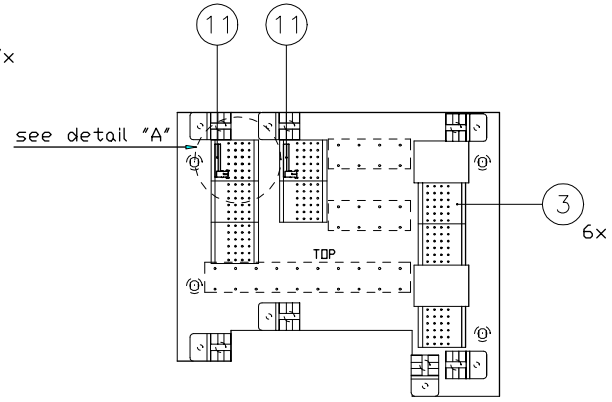
scale 1:2



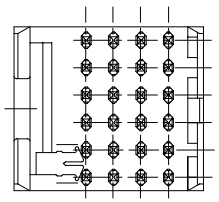
Bottomside board







Topside board

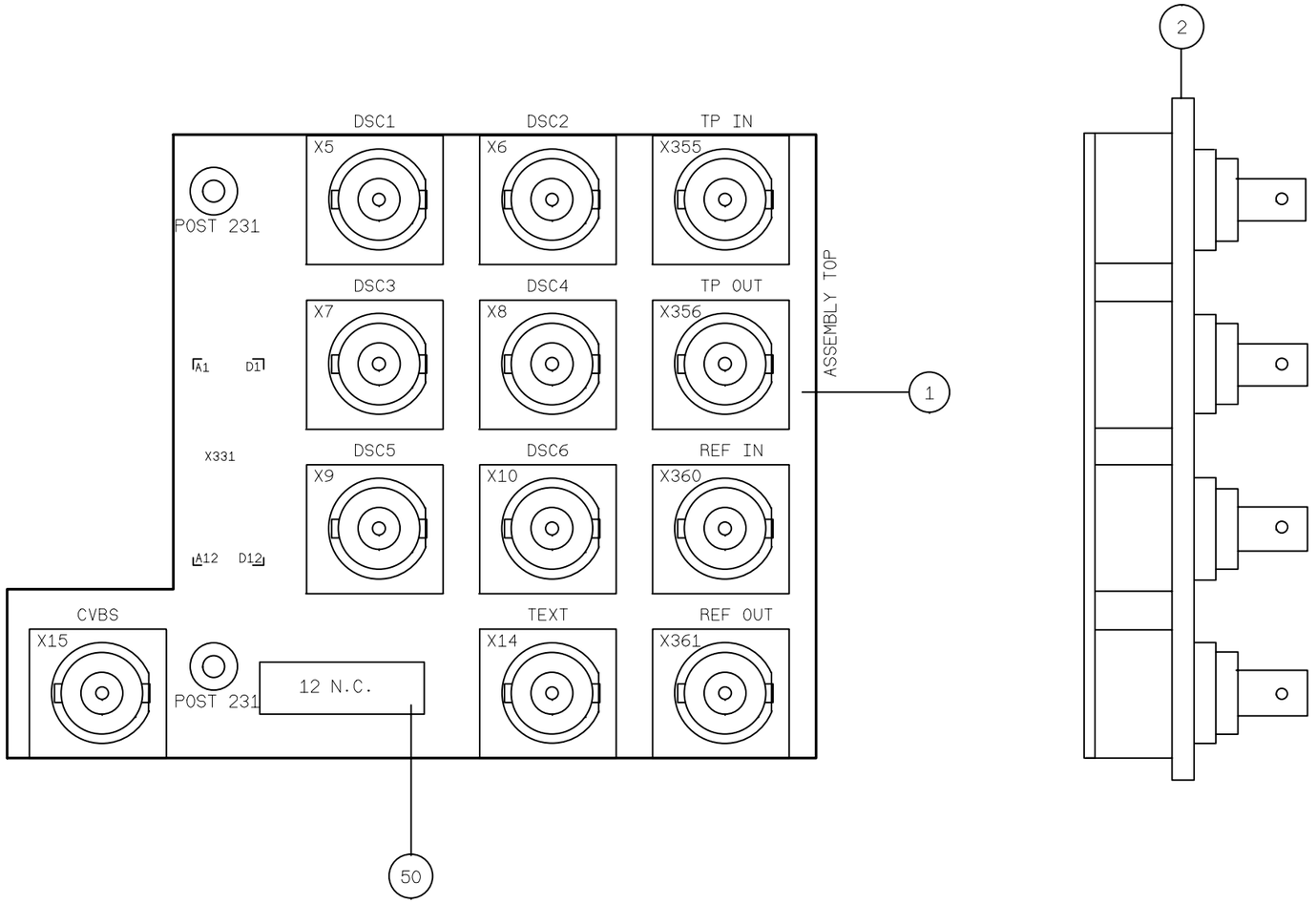


Detail "A" (4 : 1),
showing shorting clip
shorting pos.5 and pos.6
in items 11.

ENVIRONMENTAL REQUIREMENT: NO BANNED SUBSTANCES ACC. TO UAW-0470/075

mat'l code				tolerances unless otherwise specified			INSPECTION COPY	ELECTRONICS www.fciconnect.com
ltr	ecn no	dr	date					title: Subboard PHILIPS
A	H90674	BLI	991217	linear			projection	
B	H00125	BLI	000330					
C	H00239	BLI	000524	angles			mm	product family: backplane; code: 210
D	H00371	BLI	000830	dr B.LIBREGTS 991217				size: A2; dwg no: 53017
				engr B.Libregts 991217			scale 1:1	sheet: 2 of –
				chr B.Paagman 991217				
				appd B.Libregts 991217				
sheet index	revision sheet							

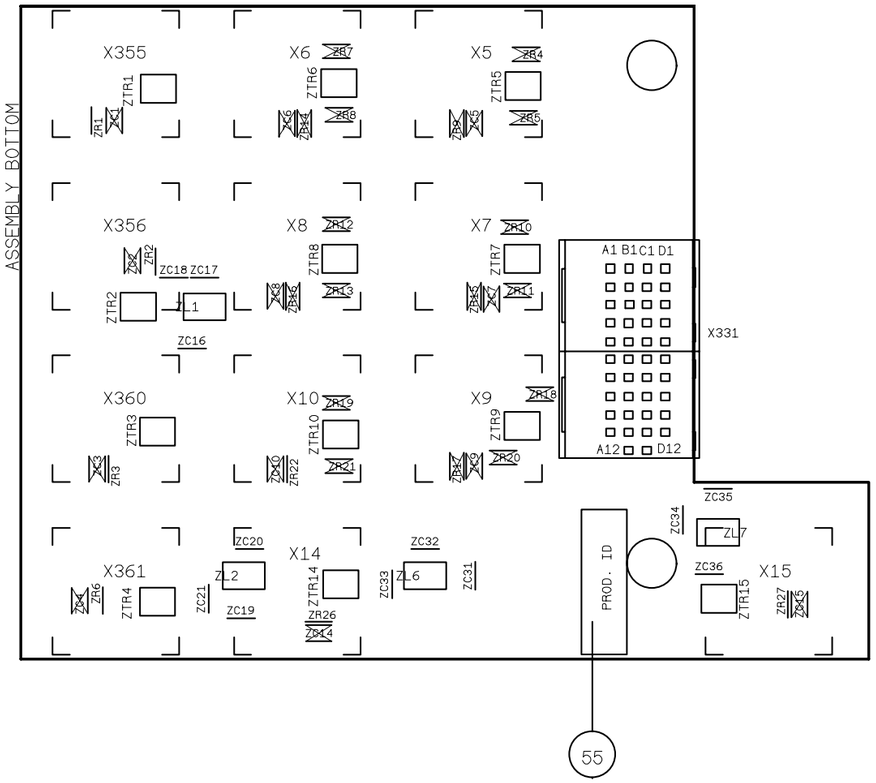
form A2



COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED.

STATUS:	~~0~~	~~1~~	~~2~~	3	4	5	6	7	8	9
	10	11	12	13	14	15	16	17	18	19

ASS. 12NC: 3922 406 88840 ASS. NAME: BNC CONNECTOR BRD HD BS	
PCB 12NC: 3922 411 88841	
ASSEMBLY	CURR. DATE: 02-03-26
DRAWING	PREV. DATE: 02-03-13
NAME: J.v.d.Logt	ORG. DATE: 20-09-21
PROPERTY OF:	4 SH | SHEET 110-1
THOMSON MULTIMEDIA BROADCAST SOLUTIONS - BREDA - THE NETHERLANDS	



COMPONENTS MARKED WITH A
CROSS ARE NOT MOUNTED

STATUS:	0	1	2	3	4	5	6	7	8	9
	10	11	12	13	14	15	16	17	18	19

ASS. 12NC: 3922 406 88840
ASS. NAME: BNC CONNECTOR BRD HD BS

PCB 12NC: 3922 411 88841

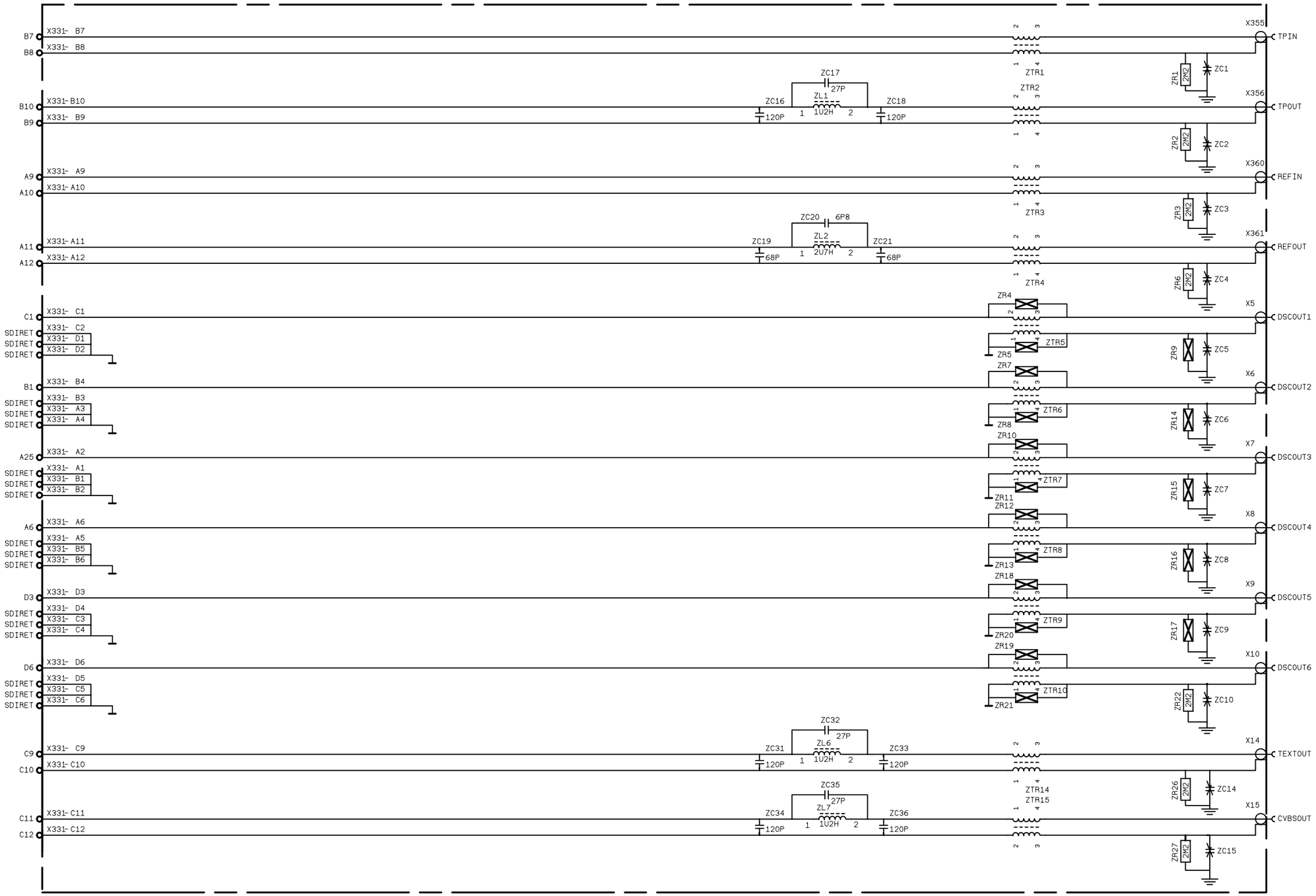
ASSEMBLY DRAWING

CURR. DATE: 02-03-26
PREV. DATE: 02-03-13
.ORG. DATE: 20-09-21

NAME:J.v.d.Lost

4 SH | SHEET 110-2

PROPERTY OF:
THOMSON MULTIMEDIA BROADCAST SOLUTIONS
- BREDA - THE NETHERLANDS



COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED

STATUS	X	X	X	3	4	5	6	7	8	9
	10	11	12	13	14	15	16	17	18	19

ASS. No: 3922 406 88840
ASS.NAME:BNC CONNECTOR BRD HD BS

PCB No: 3922 411 88841

CIRCUIT DIAGRAM

CURR. DATE:02-03-26

PREV. DATE:02-03-13

NAME: J.v.d.Logt

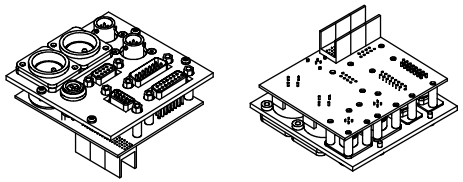
ORG. DATE: 20-09-21

PROPERTY OF:

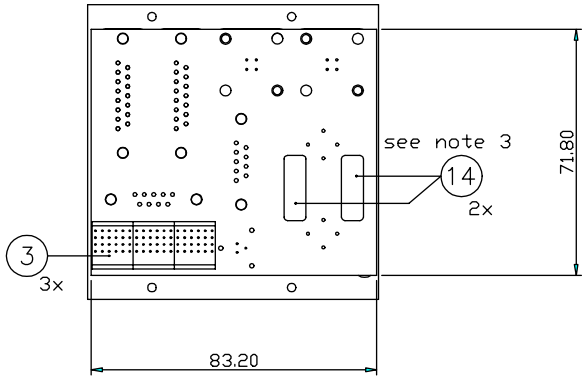
1 SH SHEET: 130-1

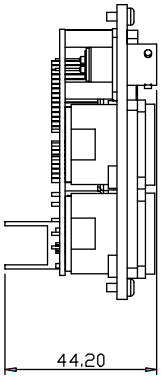
THOMSON MULTIMEDIA BROADCAST SOLUTIONS
BREDA - THE NETHERLANDS

PRODUCT NUMBER
53016-001

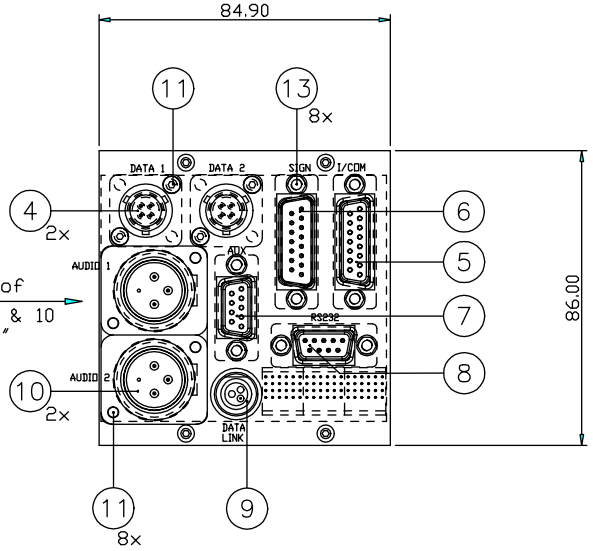


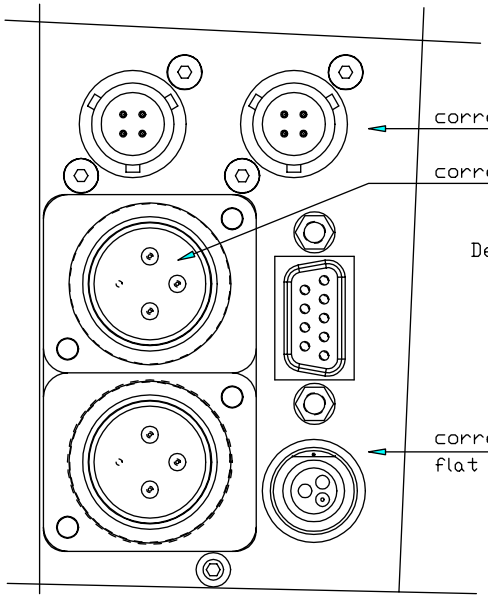
SCALE 1:2

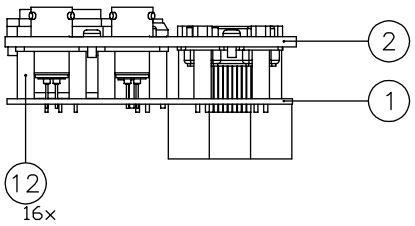




for mounting of
connectors 4, 9 & 10
see detail "A"







ENVIRONMENTAL REQUIREMENT: NO BANNED SUBSTANCES ACC. TO UAW-0470/075

ltr	ecn no	dr	date
A	H90673	BLI	991217
B	H00124	BLI	000330
C	H00239	BLI	000524

mat'l code: --

tolerances unless otherwise specified
linear
angles

dr	B.Libregts	991217
engr	B.LIBREGTS	991217
chr	B.Paagman	991217
appd	B Libregts	991217

INSPECTION COPY
projection
mm
scale 1:1 (2:1)

FCI ELECTRONICS www.fciconnect.com

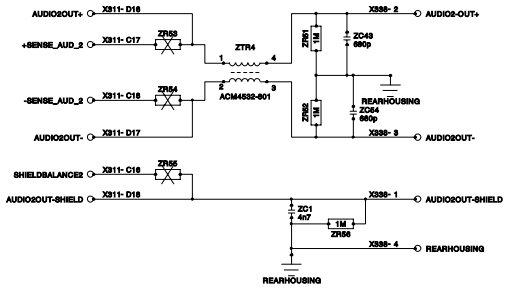
title: SIGNAL connector board

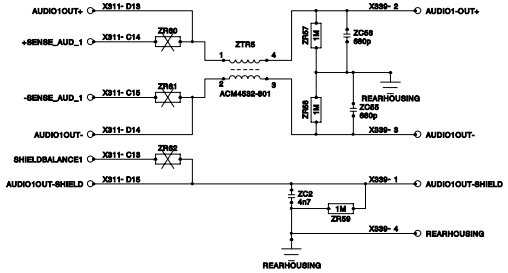
product family: backplane
code: 210
size: A2
dwg no: 53016
sheet: 2 of -

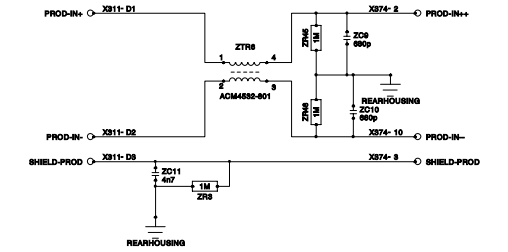
sheet index | revision sheet

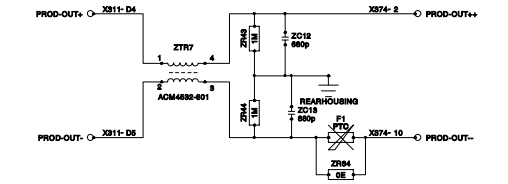
form A2

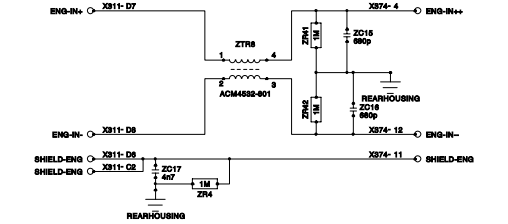
FCI Partnumber	Customer Partnumber
53016 - 001	3922 406 8822.1

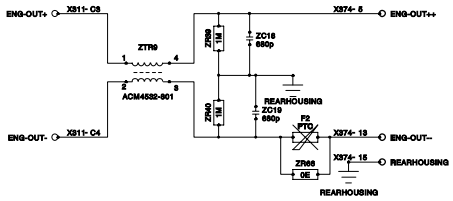


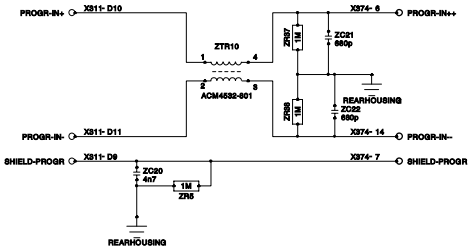


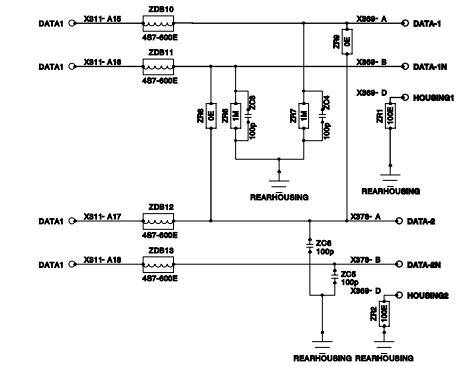






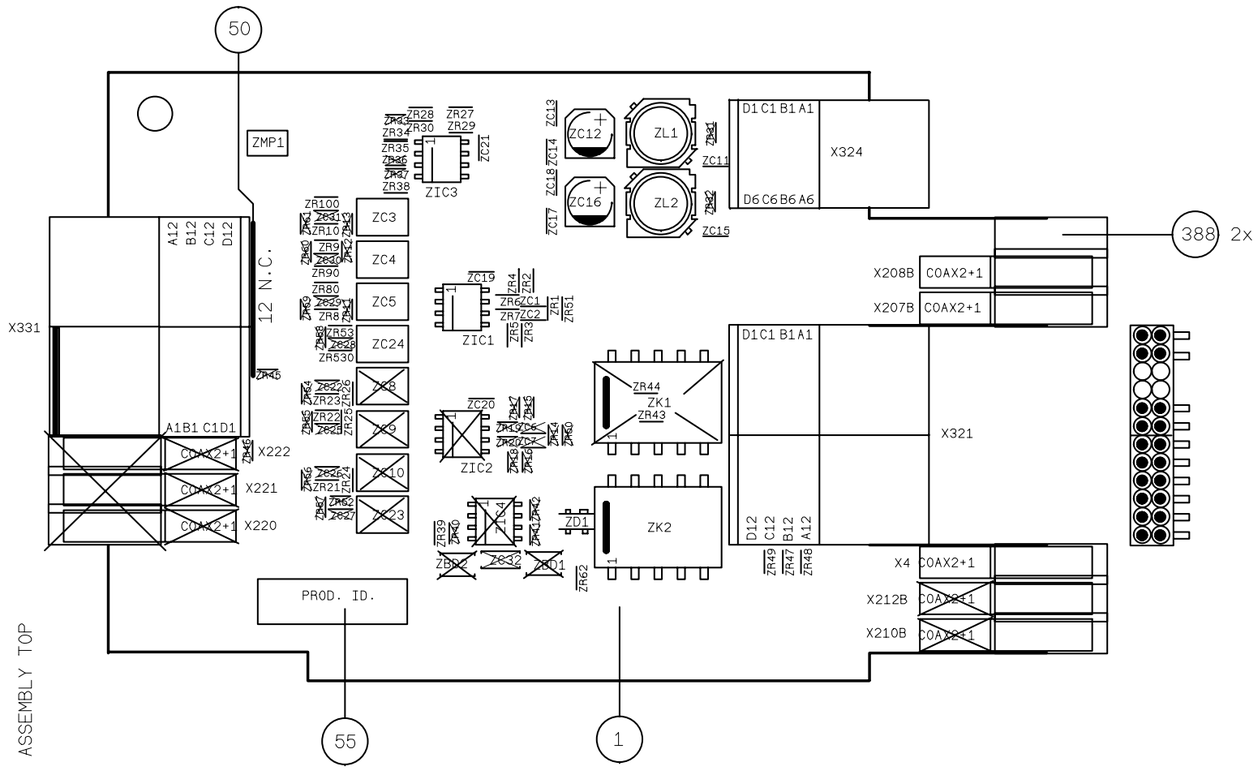






COMPONENTS MARKED WITH A
CROSS ARE NOT MOUNTED

mat'l code				CIRCUIT DIAGRAM	SMTC COPY	FCI ELECTRONICS www.fciconnect.com
ltr	ecn no	dr	date			title: Signal Connector Brd Assy
A	H10342	EBR	21-09-01			
				dr E.Brinkhof 21-09-01		product family: Backplane / CODE: 210
				engr B.Libregts 21-09-01		size: A3 / dwg no: 53016
				chr R.Bijnevelt 21-09-01		sheet: 3 of -
				appd B.Paagman 21-09-01		
sheet index	revision					
	revision					



COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED.

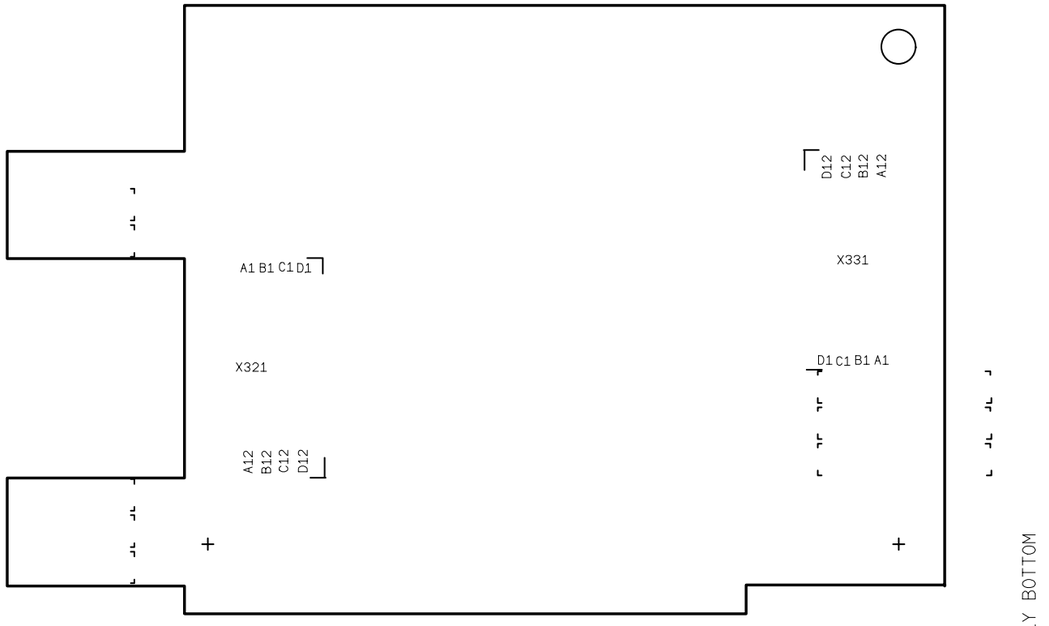
STATUS:	0	1	2	3	4	5	6	7	8	9
	10	11	12	13	14	15	16	17	18	19

ASS. 12NC: 3922 406 88830
ASS. NAME: DSC INTERFACE BOARD

PCB 12NC: 3922 411 88831

ASSEMBLY DRAWING	CURR. DATE: 02-02-14
	PREV. DATE: 01-11-12
NAME:J.v/d LOGT	ORG. DATE: 01-11-12
	4 SH SHEET 110-1

PROPERTY OF:
THOMSON MULTIMEDIA BROADCAST SOLUTIONS
- BREDA - THE NETHERLANDS



ASSEMBLY BOTTOM

COMPONENTS MARKED WITH A
CROSS ARE NOT MOUNTED

STATUS:	0	1	2	3	4	5	6	7	8	9
	10	11	12	13	14	15	16	17	18	19

ASS. 12NC: 3922 406 88830
ASS. NAME: DSC INTERFACE BOARD

PCB 12NC: 3922 411 88831

ASSEMBLY DRAWING	CURR. DATE: 02-02-14
	PREV. DATE: 01-11-12
NAME:J.v/d LOGT	ORG. DATE: 01-11-12
	4 SH | SHEET 110-2

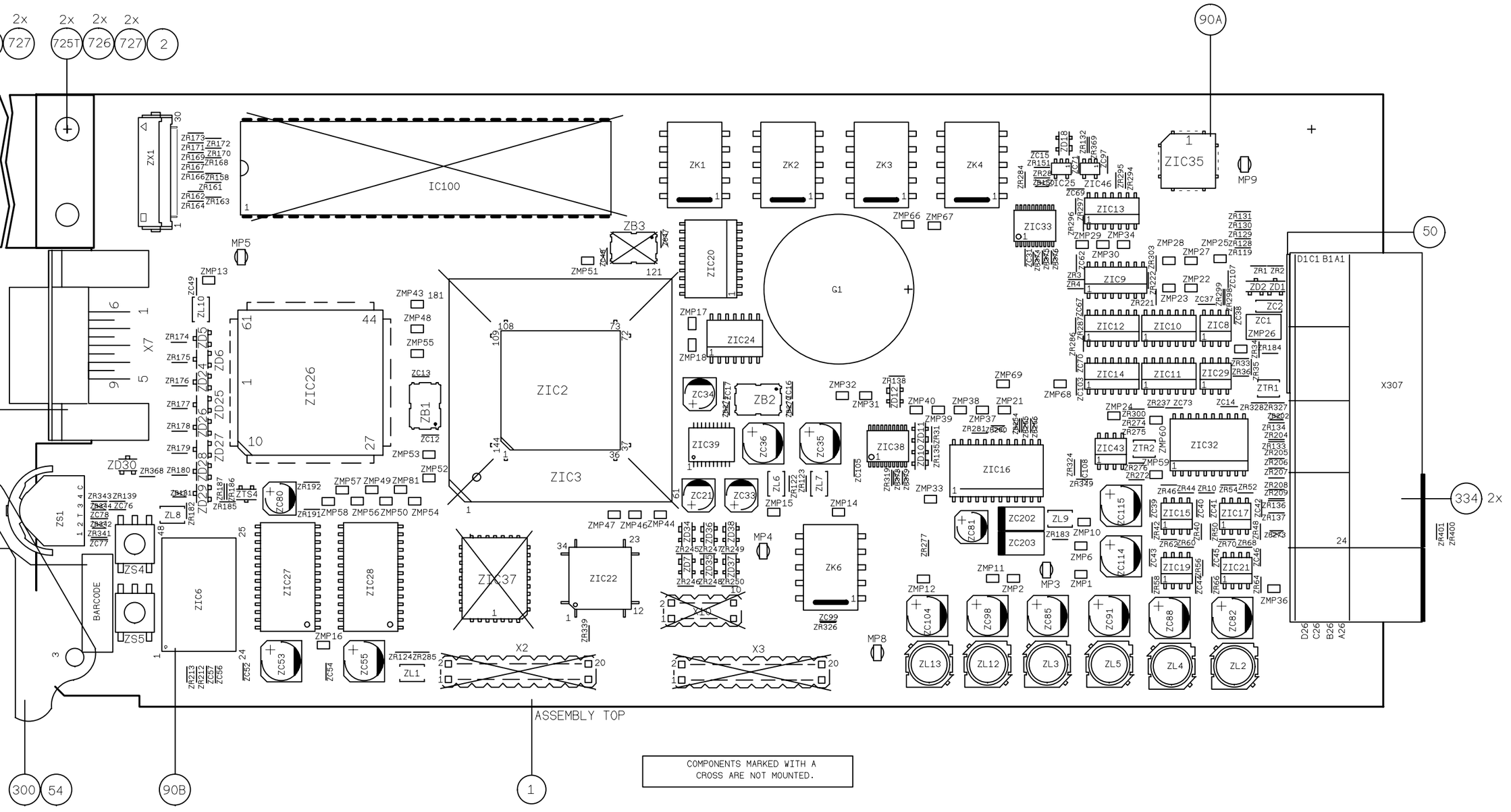
PROPERTY OF:
THOMSON MULTIMEDIA BROADCAST SOLUTIONS
- BREDA - THE NETHERLANDS

DSC-USER-A
X208B-2
X208B-1
0V
ZMP1
+5VDIG
ZR17
ZR18
ZC6
ZR14
ZR50
ZR15
ZR16
ZC7
REF-A
ZIC2
CLC007
DSC BUFFER
ZR19
ZR20
7 IN+
6 IN-
Q0 1
Q0N 2
Q1 3
Q1N 4
ZC8
ZC9
ZC10
ZC23
Y user
ZR24
B-Y user
R-Y user
0E0
ZR26
ZR25
ZC22
ZR54
ZR23
ZC25
ZR55
ZR22
ZC26
ZR56
ZR21
ZC27
ZR57
ZR52
ZR46
DSC-A3
DSC-A2
DSC-A1
DSC-USER-B
X207B-2
X207B-1
ZR4
18K
ZR5
ZC1
22N
ZR6
ZR7
100E
ZR1
150E
ZR51
ZR2
22K
ZR3
ZC2
22N
REF-B
ZIC1
CLC007
DSC BUFFER
ZC3
ZC4
ZC5
ZC24
1U
G.Y user
ZR11
B.B-Y user
R.R-Y user
ZR13
ZR12
ZC31
ZR61
ZR100
470E
75E
ZR10
ZC30
ZR60
ZR90
ZR9
ZC29
ZR59
ZR80
ZR8
ZC28
ZR58
ZR53
ZR530
ZR45
DSC-B3
DSC-B2
DSC-B1
TP SELECT
TP-VIDEO
AUXVIDEO-USER
TP-VIDEO-RET
AUXVIDEO-USERRET
ZK1
ZR43
ZR44
TP/AUXVIDEO-OUT
TP/AUXVIDEO-OUTR
AUXVIDEO-SELECT
TQ2SA-5V
ZD1
BAS28
BLACKBURS-SELECT
ZK2
+5VD
ZR32
ZL2
22UH
ZC15
22N
22UF
ZC16
ZC17
ZC18
100P
ZC19
ZC20
ZIC1
ZIC2
+5VDIG
VIDEO SELECT
REF-VIDEO-RET
REF-VIDEO
ZR62
75E
BLACKBURST
ZR39
ZR42
ZR40
ZR41
ZIC4
AD8041AR
BUFF-GENL-VIDEO
ZBD1
ZBD2
HF70-60E
+5VB
-5VB
ZC32
+3V3DIG
ZIC3
PCF8582C
ZR29
ZR30
100K
ZR27
ZR28
B-SCL
B-SDA
A0
A1
A2
SCL
SDA
PTC
ZR31
+3.3V
ZL1
ZC11
ZC12
ZC13
ZC14
ZC21
X210B
X221
X220
X212B
X222
COAX2
X331 - A1
X331 - A2
X331 - A3
X331 - A4
X331 - A5
X331 - A6
X331 - A7
X331 - A8
X331 - A9
X331 -A10
X331 -A11
X331 -A12
DSC-A2 RET
DSC-A2
DSC-B1 RET
DSC-B1
DSC-B2 RET
DSC-B2
GENL-VIDEO
GENL-VID-RET
REF-VIDEO
REF-VIDEO-RET
X331 - B1
X331 - B2
X331 - B3
X331 - B4
X331 - B5
X331 - B6
X331 - B7
X331 - B8
X331 - B9
X331 -B10
X331 -B11
X331 -B12
TP-VIDEO
TP-VIDEO-RET
TP/AUXVIDEO-OUTR
TP/AUXVIDEO-OUT
X331 - C1
X331 - C2
X331 - C3
X331 - C4
X331 - C5
X331 - C6
X331 - C7
X331 - C8
X331 - C9
X331 -C10
X331 -C11
X331 -C12
DSC-A1 RET
DSC-A3 RET
DSC-B3 RET
TEXT-VIDEO
TEXT-VIDEO-RET
CVBS-1
CVBS-1-RET
X331 - D1
X331 - D2
X331 - D3
X331 - D4
X331 - D5
X331 - D6
X331 - D7
X331 - D8
X331 - D9
X331 -D10
X331 -D11
X331 -D12
DSC-A3
DSC-B3
VIDEO-1-RET
VIDEO-1-A
VIDEO-2-RET
VIDEO-2-A
VIDEO-3-RET
VIDEO-3-A
R-R-Y-USER
R-R-Y-USER
R.R-Y USER RET
NO PINS
TP-VIDEO-RET
TP-VIDEO
BLACKBURST-RET
BLACKBURST
VIDEO-3
VIDEO-3-RET
ZR48
VIDEO-3-A
B-Y-USER
B-Y USER RET
TEXT-VIDEO-RET
TEXT-VIDEO
VIDEO-1
VIDEO-1-RET
ZR49
VIDEO-1-A
MEASURING-BUS
TMS
TCK
NTRST
TDL
TDM
+5V
B-SDA
B-SCL
B-INT
TWE
-5V
B.B-Y USER RET
B.B-Y USER
BUFF-GENL-VIDEO
GENL-VID-RET
BLACKBURST-RET
REF-VIDEO-RET
PSHORT
VIDEO-2-RET
VIDEO-2
ZR47
VIDEO-2-A
Y-USER RET
Y-USER
G-Y-USER
G-Y USER RET
R-Y-USER
R-Y USER RET
CVBS-1-RET
CVBS-1
+3.3V
AUXVIDEO-SELECT
BLACKBURST-SELEC
+5VD
AUXVIDEO-USERRET
AUXVIDEO-USER
AUXVIDEO-RET
AUXVIDEO
NOT USED COMPONENTS

COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED

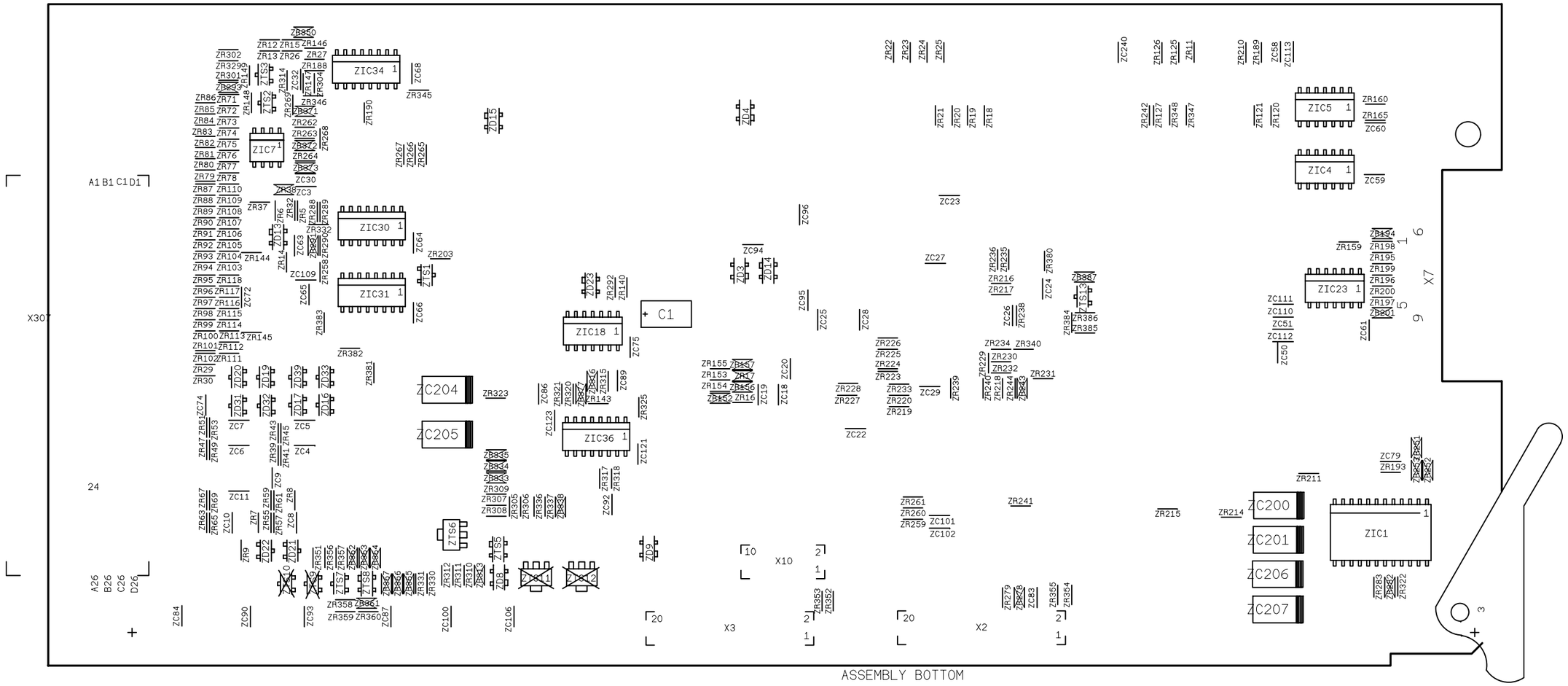
STATUS	X	X	2	3	4	5	6	7	8	9
	10	11	12	13	14	15	16	17	18	19

ASS. No: 3922 406 88830
ASS.NAME:DSC INTERFACE BOARD
PCB No: 3922 411 88831
CIRCUIT DIAGRAM
CURR. DATE: 02-02-14
PREV. DATE: 01-11-12
NAME: J.v/d LOGT
ORG. DATE: 01-11-12
PROPERTY OF:
1 SH SHEET: 130-1
THOMSON MULTIMEDIA BROADCAST SOLUTIONS
BREDA - THE NETHERLANDS



STATUS:	0	1	2	3	4	5	6	7	8	9
	10	11	12	13	14	15	16	17	18	19

ASS. 12NC: 3922 406 87680 ASS. NAME: DATA BOARD BS	
PCB 12NC: 3922 411 87684	
ASSEMBLY DRAWING	CURR. DATE: 01-12-19
	PREV. DATE: 01-11-02
NAME: R.V.GEEL	ORG. DATE: 99-03-05
	4 SH | SHEET 110-1
PROPERTY OF: PHILIPS DIGITAL VIDEO SYSTEMS BV - BREDA - THE NETHERLANDS	



COMPONENTS MARKED WITH A
CROSS ARE NOT MOUNTED

STATUS:	0	1	2	3	4	5	6	7	8	9
	10	11	12	13	14	15	16	17	18	19

ASS. 12NC: 3922 406 87680
ASS. NAME: DATA BOARD BS

PCB 12NC: 3922 411 87684

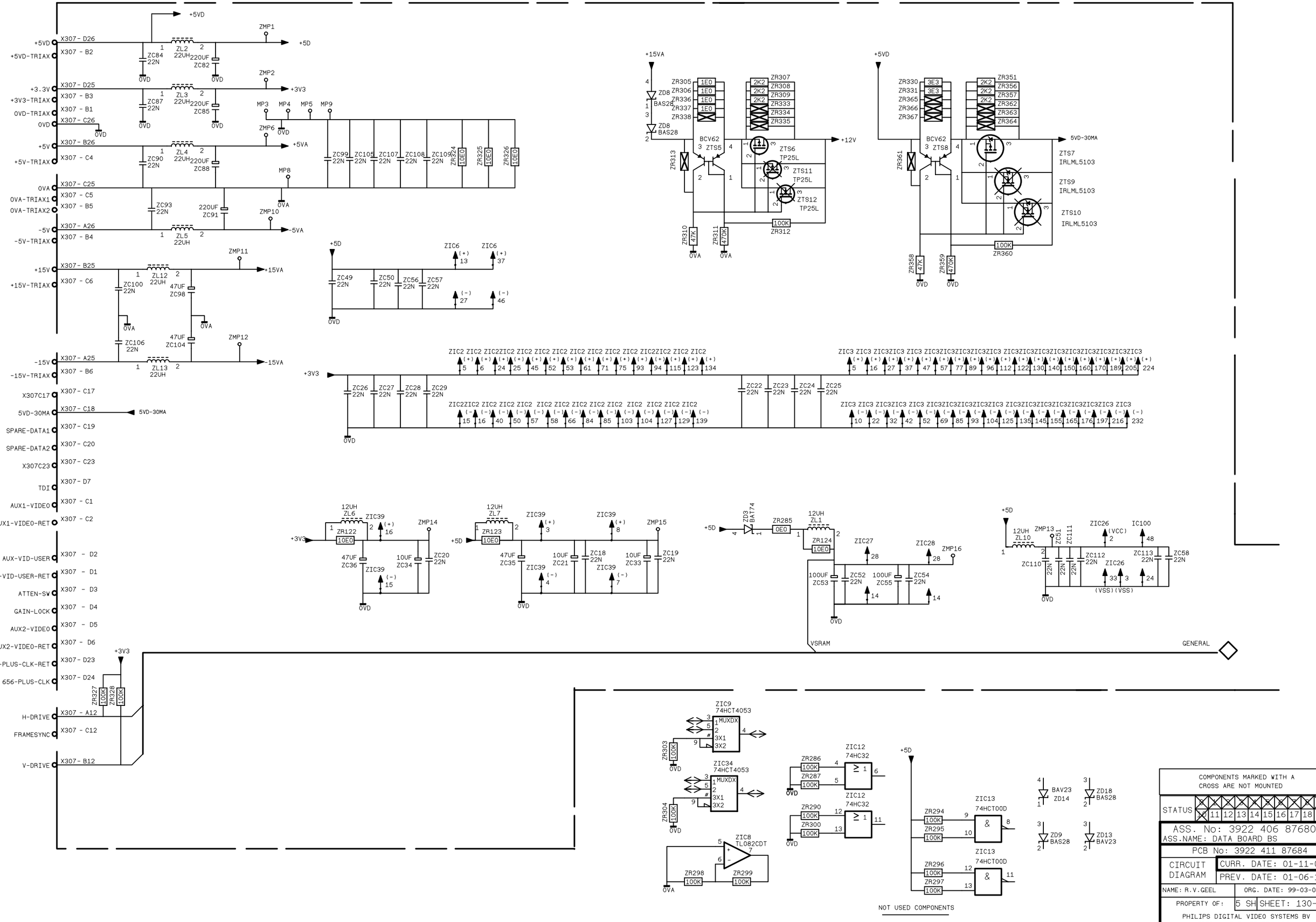
ASSEMBLY DRAWING

CURR. DATE: 01-12-19
PREV. DATE: 01-11-02
ORG. DATE: 99-03-05

NAME: R.V.GEEL

4 SH | SHEET 110-2

PROPERTY OF:
PHILIPS DIGITAL VIDEO SYSTEMS BV
- BREDA - THE NETHERLANDS



COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED

STATUS	X	X	X	X	X	X	X	X	X	X
	X	11	12	13	14	15	16	17	18	19

ASS. No: 3922 406 87680
ASS.NAME: DATA BOARD BS

PCB No: 3922 411 87684

CIRCUIT DIAGRAM — CURR. DATE: 01-11-02 — PREV. DATE: 01-06-18

NAME: R.V.GEEL — ORG. DATE: 99-03-05

PROPERTY OF: — 5 SH SHEET: 130-1

PHILIPS DIGITAL VIDEO SYSTEMS BV
BREDA - THE NETHERLANDS

DATA-CAM-BS
DATA-CAM-BS-RET
X307 - D9
X307 - D8
ZC1 1U
ZC2 100N
ZR1 470K
ZR2 470K
BAT17
ZD1
ZD2
BAT17
-5VA
+5VA
ZIC8 TL082CDT
ZMP21
ZR4 10K
ZR3 10K
+5D
ZIC9 74HCT4053
MUXDX
3X1
3X2
74HCT4053
ZIC9
OVD
ZR5 100K
ZIC10 74HC08
ZIC14 PC74HC04
ZIC10 74HC08
ZMP22
ZIC14 PC74HC04
ZD13 BAT23
ZR6 68K
ZIC10 74HC08
100P ZC3
OVD
CARRIER-PRESENT
HEADCTR
GTXD
ZMP23
ZIC10 74HC08
ZR32 10K
+5D
ZIC29 LTC485CS8
EN1
EN2
ZMP24
ZIC14 PC74HC04
ZIC12 74HC32
ZMP28
ZIC11 74HC08
ZIC14 PC74HC04
ZIC11 74HC08
ZIC14 PC74HC04
ZIC11 74HC08
PRIVATE
DENN
HEADCTR
GRXD
ZR34 33K
ZR33 33K
OVD
+5D
ZMP25 ZMP26
ZR35 22E
ZR36 22E
ZD16 BZX84-5V1
ZD17 BZX84-5V1
ZD31 BZX84-5V1
ZD32 BZX84-5V1
OVD
ZTR1
ZMP27
ZR37 100E
ZR38
OVD
ZIC9 74HCT4053
MUXDX
HEADCTR
X307 -C15 DATA2
X307 -C16 DATAN2
X307 -C14 DATA-N1
X307 -C13 DATA-1
X307 -D11 DATA-BS-CAM
X307 -D10 DATA-BS-CAM-RET
X307 -D17 CALL-TO
X307 -D18 CALL-TO-RET
X307 -D19 PREV-TO
X307 -D20 PREV-TO-RET
X307 -D12 MASTER-RSTN
ZR184 0E0
OVD

GENERAL
IIC-BUSSES
PROC-IO
ADDRESS-BUS

MEAS-SIGNAL
AUDIO-1
AUDIO-2
ANA-0
ANA-1
X307- A1
X307 - C21
X307 - C22
X307- B21
X307- B22

ZIC20 74HC374
ENA-RELAY
RELAY1
PROC-AD0
PROC-AD1
PROC-AD2
PROC-AD3
PROC-AD4
PROC-AD5
PROC-AD6
PROC-AD7
BAS28 ZD4
TQ2SA-5V
ZK1
ZK2
BAS28 ZD9
ZK6
BAS28 ZD15
ZK3
BAS28 ZD15
ZK4
TQ2SA-5V
MONOSTABLE
ZK1
CALL-TO-RET
ZK2
PREV-TO-RET
PREV-TO
ZK6
MEASURE
MEAS-SIGNAL
TEST RS232
TEST RS232

V-IIC
ZR302 2K2
ZR329 2K2
ZR258 2K2
100K
SCL
SDA
IIC-ENN
ZMP37
ZMP38
ZMP39
ZR293
1E0
+3V3
ZR301
ZIC30 74HCT4051
MUXDX
IIC0
IIC1
IIC2
IIC-ENN
SDA
ZR103 4K7
ZR104 4K7
ZR105 4K7
ZR106 4K7
ZR107 4K7
ZR108 4K7
ZR109 4K7
ZR110 4K7
ZR87 0E0
ZR88 0E0
ZR89 0E0
ZR90 0E0
ZR91 0E0
ZR92 0E0
ZR93 0E0
ZR94 0E0
ZIC31 74HCT4051
ZR111 4K7
ZR112 4K7
ZR113 4K7
ZR114 4K7
ZR115 4K7
ZR116 4K7
ZR117 4K7
ZR118 4K7
ZR95 0E0
ZR96 0E0
ZR97 0E0
ZR98 0E0
ZR99 0E0
ZR100 0E0
ZR101 0E0
ZR102 0E0
SCL
ZR71 4K7
ZR72 4K7
ZR73 4K7
ZR74 4K7
ZR75 4K7
ZR76 4K7
ZR77 4K7
ZR78 4K7
INTN0 100E ZR79 A-INTN
INTN1 100E ZR80 B-INTN
INTN2 100E ZR81 C-INTN
INTN3 100E ZR82 D-INTN
INTN4 100E ZR83 E-INTN
INTN5 100E ZR84 F-INTN
INTN6 100E ZR85 G-INTN
INTN7 100E ZR86 H-INTN
ZR291
100K ZR332
STRAL
ZMP40
ZIC12 74HC32
ZIC14 PC74HC04
ZR289 100E
ZR288 100K
ZTS1 IRLML2803
SCL
OVD

+5D ZIC9 ZIC30 ZIC31
ZC62 22N
ZC64 22N
ZC66 22N
ZIC10 ZIC11 ZIC12 ZIC14 ZIC29 ZIC20
ZC63 22N
ZC65 22N
ZC67 22N
ZC70 22N
ZC72 22N
ZC95 22N
ZC96 22N
ZIC29
ZIC8
+5VA
ZC37 22N
OVA
ZC38 22N
-5VA
ZIC8

X307 -A13 A-SDA
X307 -A14 A-SCL
X307 -A15 A-INTN
X307 -A16 B-SDA
X307 -A17 B-SCL
X307 -A18 B-INTN
X307 -A19 C-SCL
X307 -A20 C-INTN
X307 -A21 C-SDA
X307 -A22 D-SDA
X307 -A23 D-SCL
X307 -A24 D-INTN
X307 - A7 E-SDA
X307 - A8 E-SCL
X307 - A9 E-INTN
X307 - B8 F-SDA
X307 - B9 F-SCL
X307 -B10 F-INTN
X307 -C10 G-SDA
X307 -C11 G-SCL
X307 -B11 G-INTN
X307 - C7 H-SDA
X307 - C8 H-SCL
X307 - C9 H-INTN

CALL-EXT
CALL-EXT-RET
X307- D15
X307- D16
ZR134 2K2
ZR133 2K2
ZD10 BAV23
ZR135 470K
CALL-IN
ZD10 BAV23
ZMP33

ON-AIR-EXT
ON-AIR-EXT-RET
X307- D13
X307- D14
ZR29 2K2
ZR30 2K2
ZD11 BAV23
ZR31 470K
AIR-IN
ZD11 BAV23
ZMP32

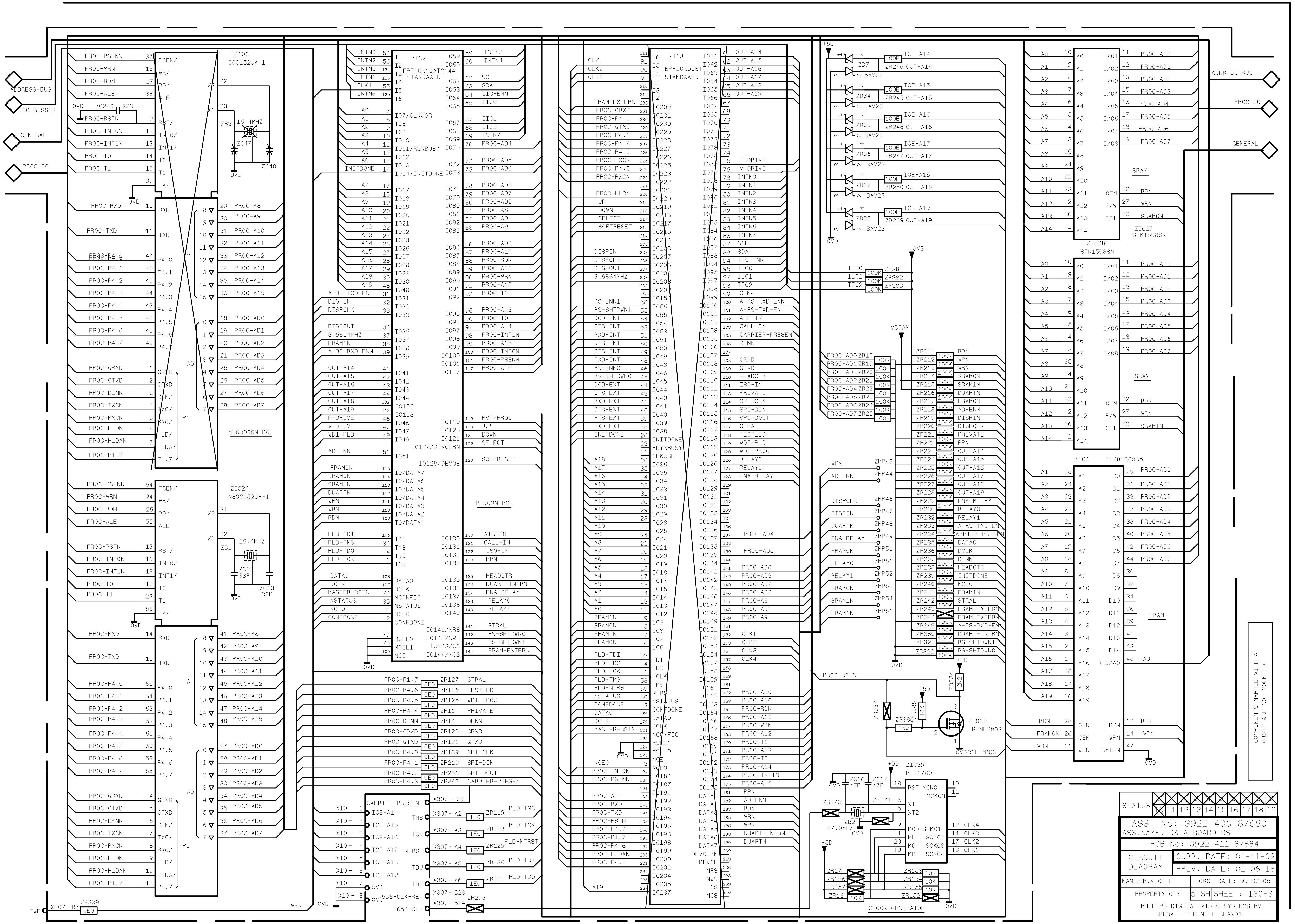
ISO-EXT
ISO-EXT-RET
X307- D21
X307- D22
ZR136 2K2
ZR137 2K2
ZD12 BAV23
ZR138 470K
ISO-IN
ZD12 BAV23
ZMP31

FRAM1N
FRAMON
INITDONE
MASTER-RSTN
ZR352 1E0
ZR353 1E0
X3 - 1
X3 - 2 INITREADY
X3 - 3 RESETN
X3 - 4 A19
X3 - 5 A18
X3 - 6 A17
X3 - 7 A16
X3 - 8 RDN
X3 - 9 WRN
X3 - 10 PROC-PSENN
X3 - 11 PROC-ALE
X3 - 12 PROC-AD7
X3 - 13 PROC-AD6
X3 - 14 PROC-AD5
X3 - 15 PROC-AD4
X3 - 16 PROC-AD3
X3 - 17 PROC-AD2
X3 - 18 PROC-AD1
X3 - 19 PROC-AD0
X3 - 20 OVD
ZR354 1E0
ZR355 1E0
X2 - 1
X2 - 2 TEST1
X2 - 3 TEST2
X2 - 4 A15
X2 - 5 A14
X2 - 6 A13
X2 - 7 A12
X2 - 8 A11
X2 - 9 A10
X2 - 10 A9
X2 - 11 A8
X2 - 12 A7
X2 - 13 A6
X2 - 14 A5
X2 - 15 A4
X2 - 16 A3
X2 - 17 A2
X2 - 18 A1
X2 - 19 A0
X2 - 20 OVD

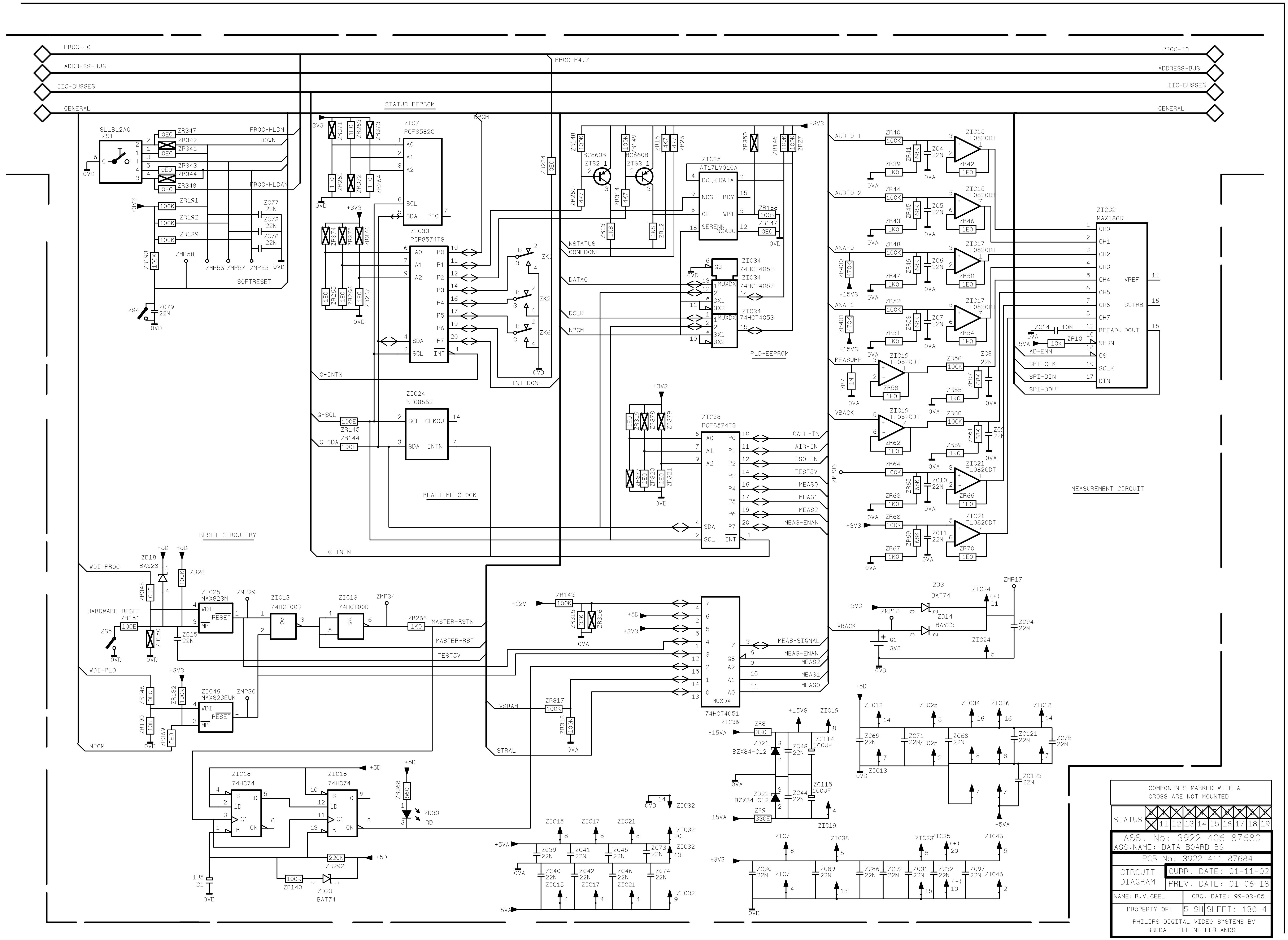
COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED

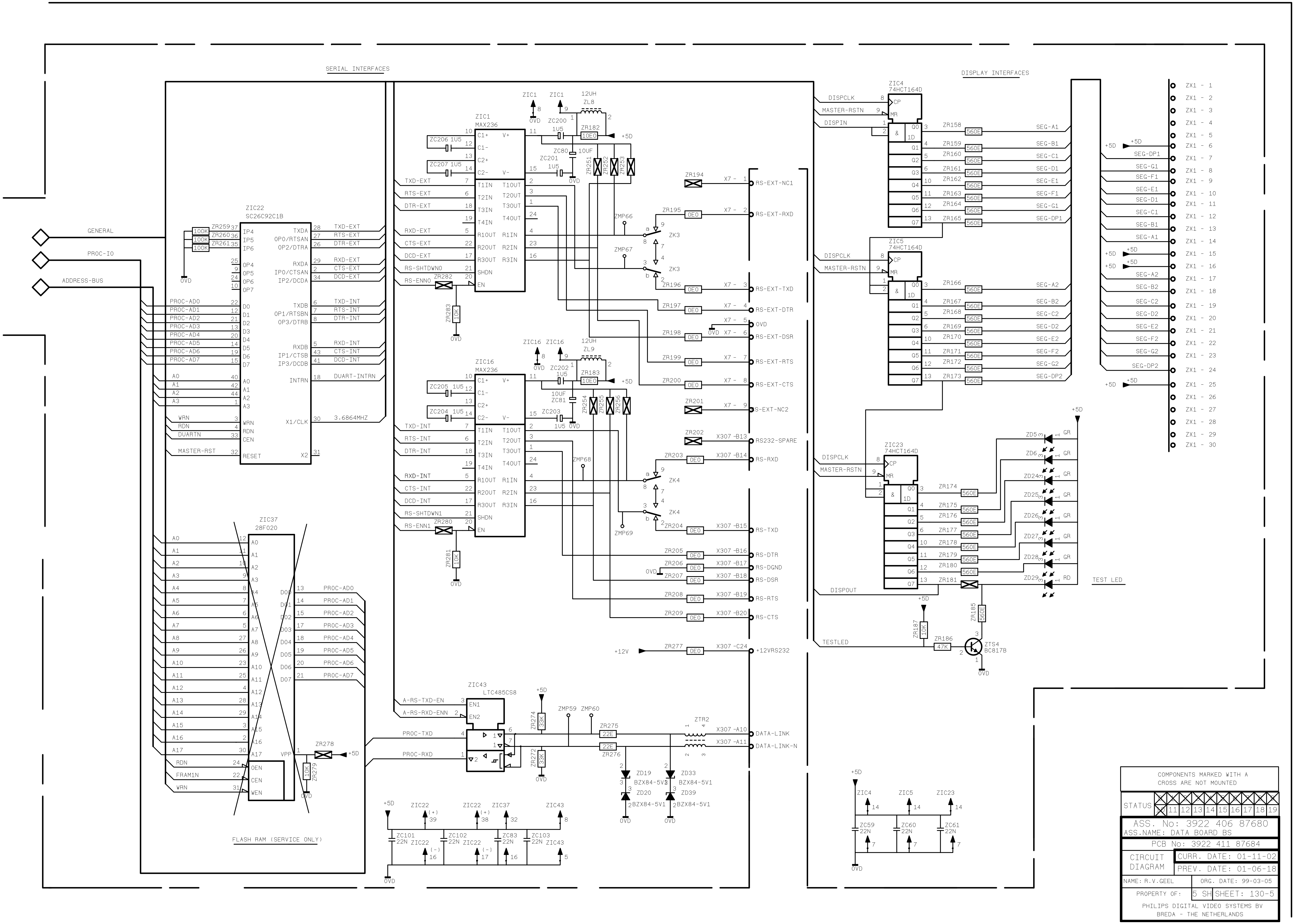
STATUS	10	11	12	13	14	15	16	17	18	19
	X	X	X	X	X	X	X	X	X	X

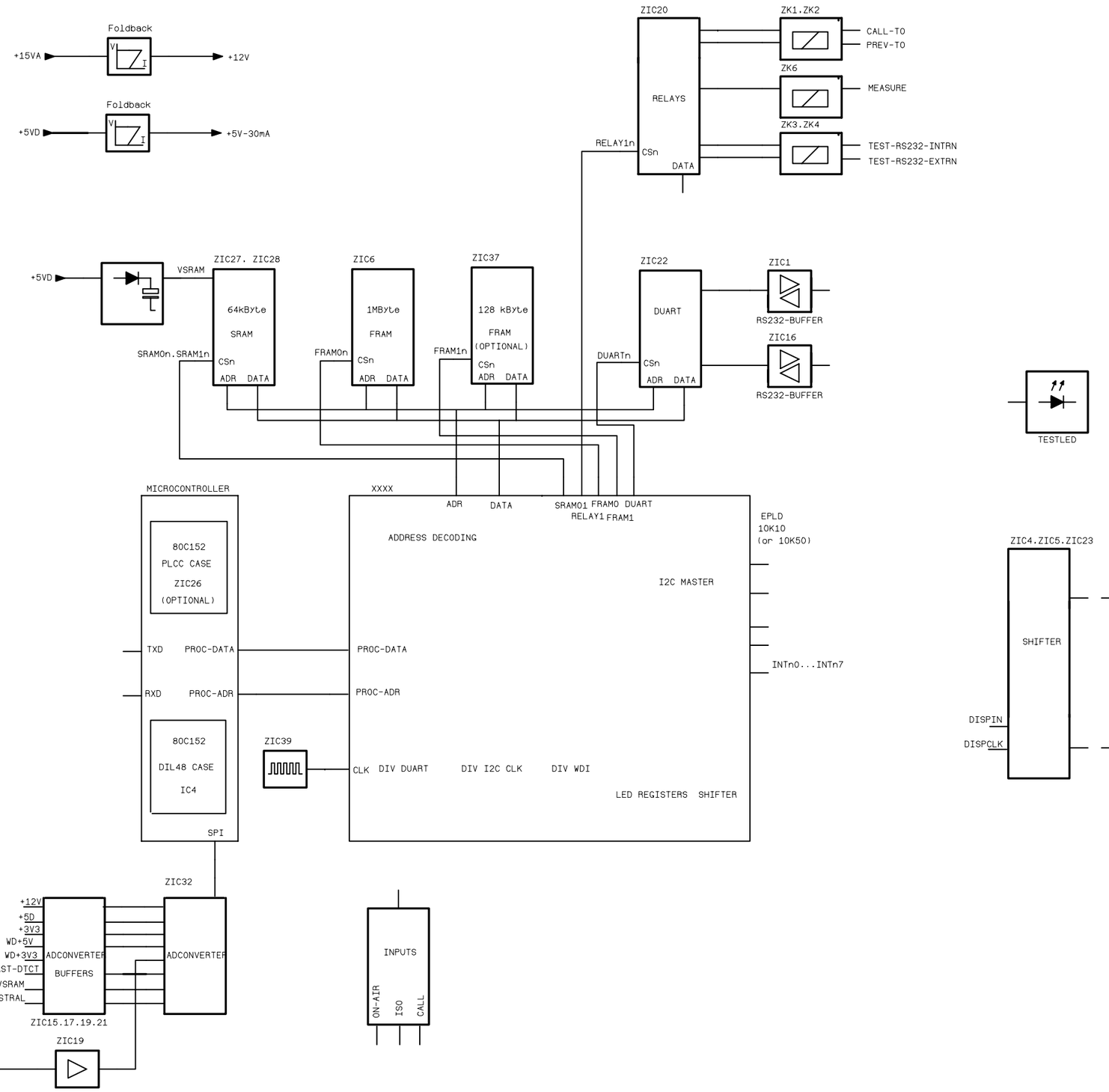
ASS. No: 3922 406 87680
ASS.NAME: DATA BOARD BS
PCB No: 3922 411 87684
CIRCUIT DIAGRAM
CURR. DATE: 01-11-02
PREV. DATE: 01-06-18
NAME: R.V.GEEL
ORG. DATE: 99-03-05
PROPERTY OF:
5 SH SHEET: 130-2
PHILIPS DIGITAL VIDEO SYSTEMS BV
BREDA - THE NETHERLANDS



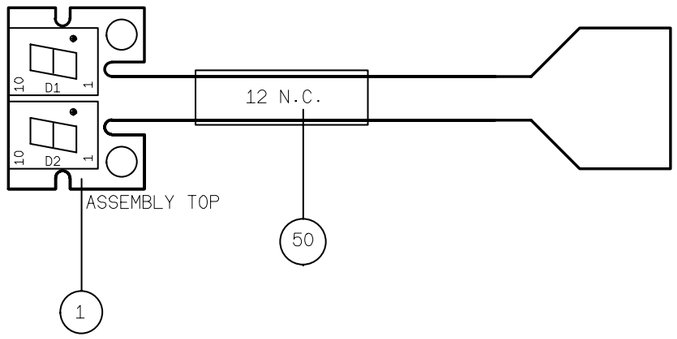
ADDRESS-BUS
IIC-BUSSES
GENERAL
PROC-IO
IC100 80C152JA-1
MICROCONTROL
ZIC26 N80C152JA-1
ZIC2 EPF10K10ATC144 STANDAARD
PLDCONTROL
ZIC3 EPF10K50ST STANDAARD
ZIC28 STK15C88N
ZIC27 STK15C88N
SRAM
ZIC6 TE28F800B5
FRAM
ZTS13 IRLML2803
ZIC39 PLL1700
CLOCK GENERATOR
16.4MHZ
27.0MHZ
COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED
STATUS 10 11 12 13 14 15 16 17 18 19
ASS. No: 3922 406 87680
ASS.NAME: DATA BOARD BS
PCB No: 3922 411 87684
CIRCUIT DIAGRAM
CURR. DATE: 01-11-02
PREV. DATE: 01-06-18
NAME: R.V.GEEL
ORG. DATE: 99-03-05
PROPERTY OF:
5 SH SHEET: 130-3
PHILIPS DIGITAL VIDEO SYSTEMS BV
BREDA - THE NETHERLANDS


PROC-IO
ADDRESS-BUS
IIC-BUSSES
GENERAL
PROC-P4.7
STATUS EEPROM
REALTIME CLOCK
PLD-EEPROM
MEASUREMENT CIRCUIT
RESET CIRCUITRY
SOFTRESET
SLLB12AG ZS1
ZIC7 PCF8582C
ZIC33 PCF8574TS
ZIC24 RTC8563
ZIC35 AT17LV010A
ZIC34 74HCT4053
ZIC38 PCF8574TS
ZIC36 74HCT4051
ZIC32 MAX186D
ZIC15 TL082CDT
ZIC17 TL082CDT
ZIC19 TL082CDT
ZIC21 TL082CDT
ZIC25 MAX823M
ZIC46 MAX823EUK
ZIC13 74HCT00D
ZIC18 74HC74
ZTS2 BC860B
ZTS3 BC860B
PROC-HLDN
DOWN
PROC-HLDAN
NSTATUS
CONFDONE
DATA0
DCLK
NPGM
G-INTN
G-SCL
G-SDA
INITDONE
CALL-IN
AIR-IN
ISO-IN
TEST5V
MEAS0
MEAS1
MEAS2
MEAS-ENAN
MEAS-SIGNAL
AUDIO-1
AUDIO-2
ANA-0
ANA-1
MEASURE
VBACK
AD-ENN
SPI-CLK
SPI-DIN
SPI-DOUT
WDI-PROC
HARDWARE-RESET
WDI-PLD
MASTER-RSTN
MASTER-RST
VSRAM
STRAL
COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED
STATUS 10 11 12 13 14 15 16 17 18 19
ASS. No: 3922 406 87680
ASS.NAME: DATA BOARD BS
PCB No: 3922 411 87684
CIRCUIT DIAGRAM
CURR. DATE: 01-11-02
PREV. DATE: 01-06-18
NAME: R.V.GEEL
ORG. DATE: 99-03-05
PROPERTY OF:
5 SH
SHEET: 130-4
PHILIPS DIGITAL VIDEO SYSTEMS BV
BREDA - THE NETHERLANDS


SERIAL INTERFACES
DISPLAY INTERFACES
GENERAL
PROC-IO
ADDRESS-BUS
ZIC22
SC26C92C1B
ZIC1
MAX236
ZIC16
MAX236
ZIC37
28F020
FLASH RAM (SERVICE ONLY)
ZIC43
LTC485CS8
ZIC4
74HCT164D
ZIC5
74HCT164D
ZIC23
74HCT164D
TEST LED
ZTS4
BC817B
DATA-LINK
DATA-LINK-N
+12VRS232
RS-EXT-NC1
RS-EXT-RXD
RS-EXT-TXD
RS-EXT-DTR
RS-EXT-DSR
RS-EXT-RTS
RS-EXT-CTS
RS232-SPARE
RS-RXD
RS-TXD
RS-DTR
RS-DGND
RS-DSR
RS-RTS
RS-CTS
3.6864MHZ
COMPONENTS MARKED WITH A
CROSS ARE NOT MOUNTED
STATUS
ASS. No: 3922 406 87680
ASS.NAME: DATA BOARD BS
PCB No: 3922 411 87684
CIRCUIT
DIAGRAM
CURR. DATE: 01-11-02
PREV. DATE: 01-06-18
NAME: R.V.GEEL
ORG. DATE: 99-03-05
PROPERTY OF:
5 SH
SHEET: 130-5
PHILIPS DIGITAL VIDEO SYSTEMS BV
BREDA - THE NETHERLANDS

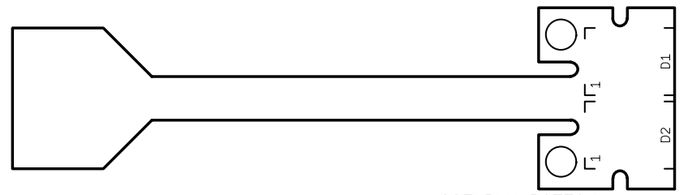


ASS. No: 3922 406 87680	
ASS.NAME: DATA BOARD BS	
BLOCK DIAGRAM	CURR. DATE: 01-01-30
	PREV. DATE: 00-10-31
NAME: R.V.GEEL	ORG. DATE: 00-06-19
PROPERTY OF:	1 SH SHEET: 136-1
PHILIPS DIGITAL VIDEOSYSTEMS BV BREDA - THE NETHERLANDS	



STATUS:	X	X	2	3	4	5	6	7	8	9
	10	11	12	13	14	15	16	17	18	19

ASS. 12NC: 3922 406 87840 ASS. NAME:DISPLAY DATABOARD	
PCB 12NC: 3922 411 87842	
ASSEMBLY	CURR. DATE: 00-11-07
DRAWING	PREV. DATE: 99-06-18
NAME:J HOMMEL	ORG. DATE: 99-06-18
PROPERTY OF:	4 SH | SHEET 110-1
PHILIPS DIGITAL VIDEO SYSTEMS b.v. - BREDA - THE NETHERLANDS	



ASSEMBLY BOTTOM

STATUS:	0	1	2	3	4	5	6	7	8	9
	10	11	12	13	14	15	16	17	18	19

ASS. 12NC: 3922 406 87840
ASS. NAME:DISPLAY DATABOARD

PCB 12NC: 3922 411 87842

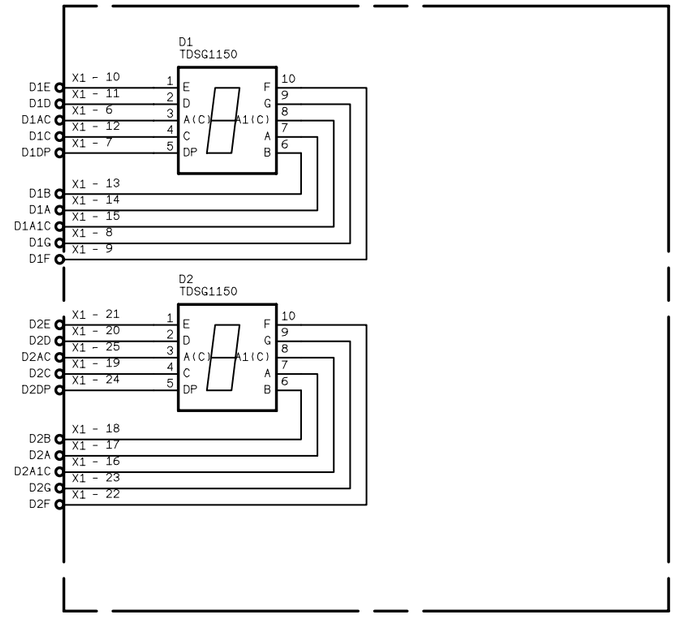
ASSEMBLY DRAWING

CURR. DATE: 00-11-07
PREV. DATE: 99-06-18
ORG. DATE: 99-06-18

NAME:J HOMMEL

4 SH SHEET 110-2

PROPERTY OF:
PHILIPS DIGITAL VIDEO SYSTEMS b.v.
- BREDA - THE NETHERLANDS



COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED

STATUS	X	X	2	3	4	5	6	7	8	9
	10	11	12	13	14	15	16	17	18	19

ASS. No: 3922 406 87840
ASS.NAME:DISPLAY DATABOARD

PCB No: 3922 411 87842

CIRCUIT DIAGRAM

CURR. DATE:00-11-07

PREV. DATE:99-06-18

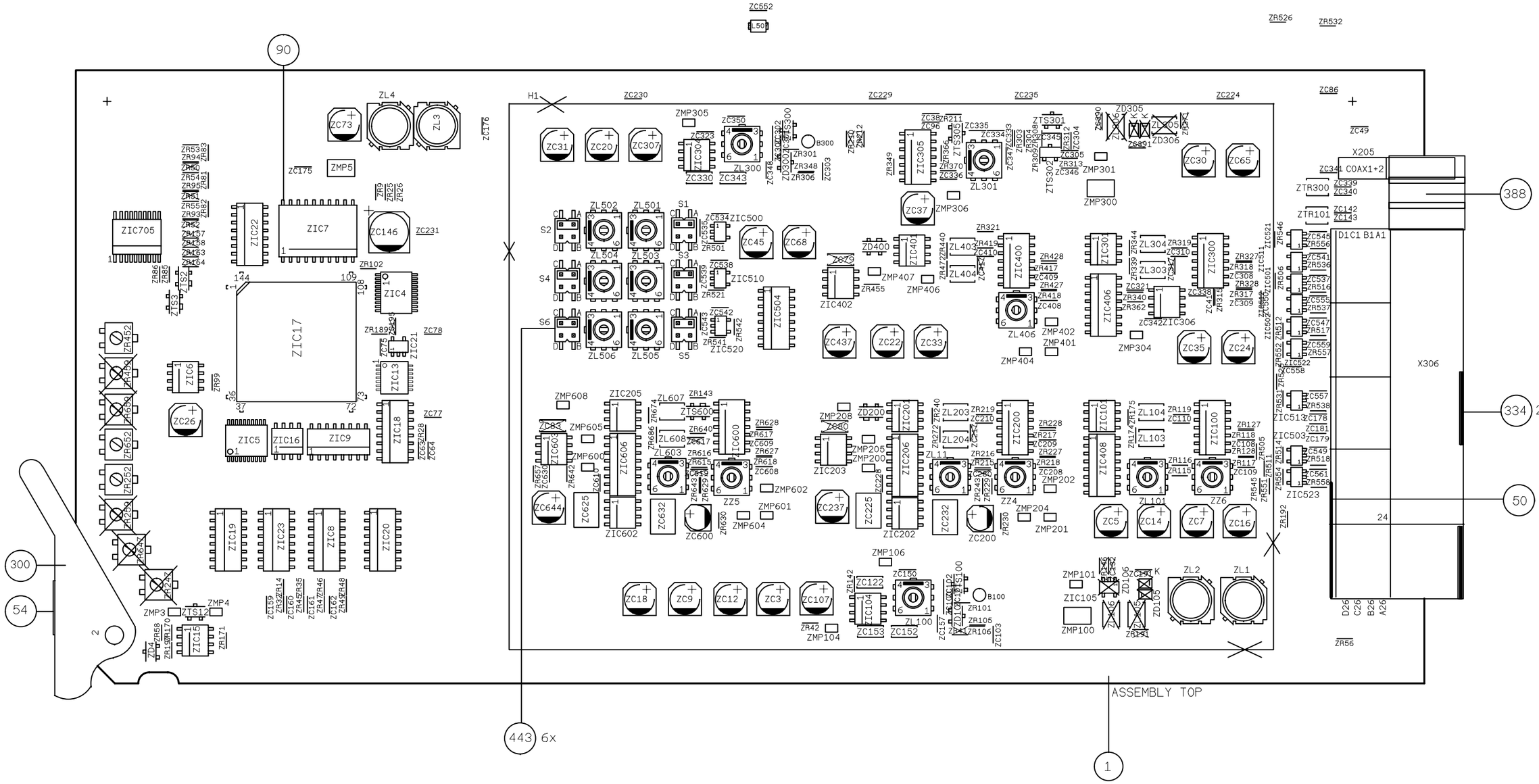
NAME: J HOMMEL

ORG. DATE: 99-6-18

PROPERTY OF:

1 SH SHEET: 130-1

PHILIPS DIGITAL VIDEO SYSTEMS b.v.
BREDA - THE NETHERLANDS



COMPONENTS MARKED WITH A
CROSS ARE NOT MOUNTED.

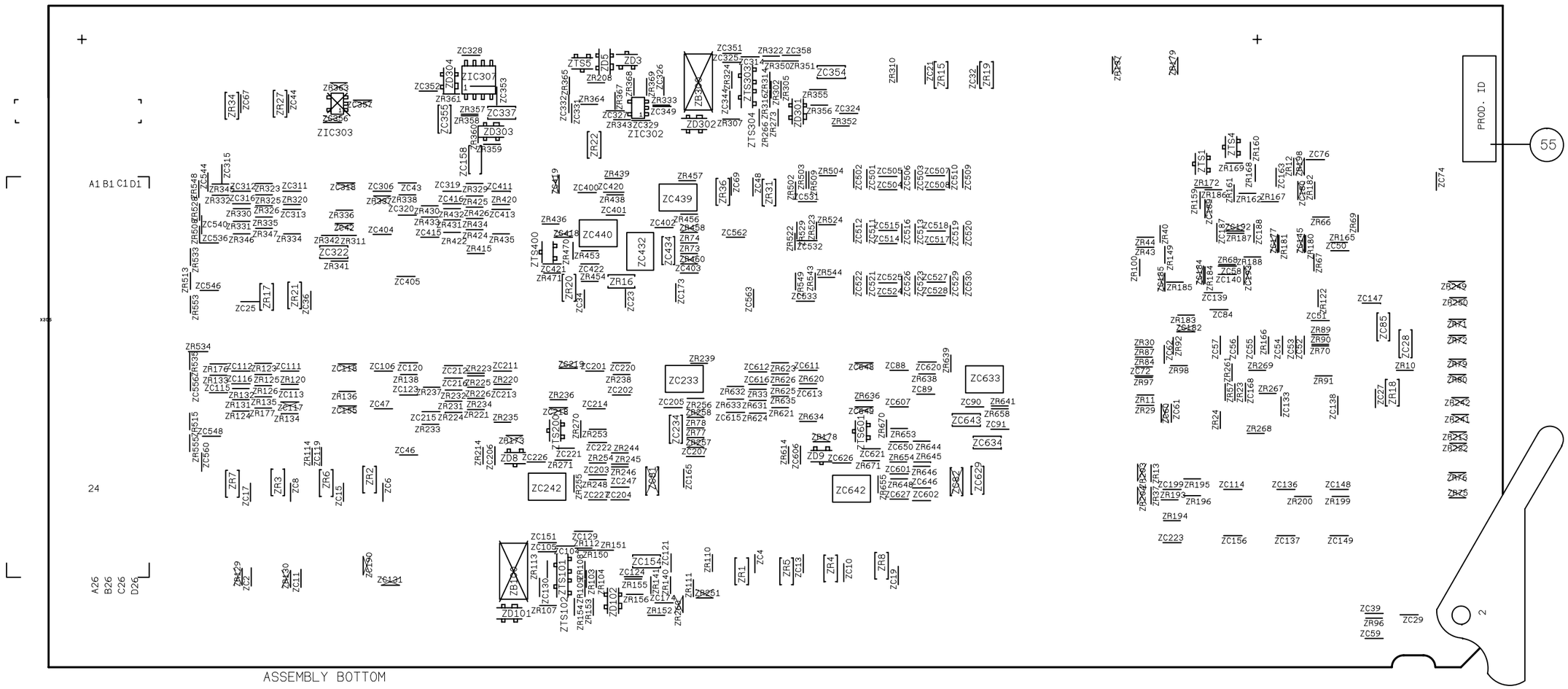
STATUS:	X	X	X	X	X	X	X	X	X	9
	10	11	12	13	14	15	16	17	18	19

ASS. 12NC: 3922 406 88620
ASS. NAME: VIDEO RECEIVER HD BS

PCB 12NC: 3922 411 88622

ASSEMBLY	CURR. DATE: 02-03-26
DRAWING	PREV. DATE: 01-08-14
NAME:J UITDEHAAG	ORG. DATE: 00-09-27
	4 SH SHEET 110-1

PROPERTY OF:
THOMSON MULTIMEDIA BROADCAST SOLUTIONS
- BREDA - THE NETHERLANDS



COMPONENTS MARKED WITH A
CROSS ARE NOT MOUNTED

STATUS:	8	X	2	3	4	5	6	7	8	9
	10	11	12	13	14	15	16	17	18	19

ASS. 12NC: 3922 406 88620
ASS. NAME: VIDEO RECEIVER HD BS

PCB 12NC: 3922 411 88622

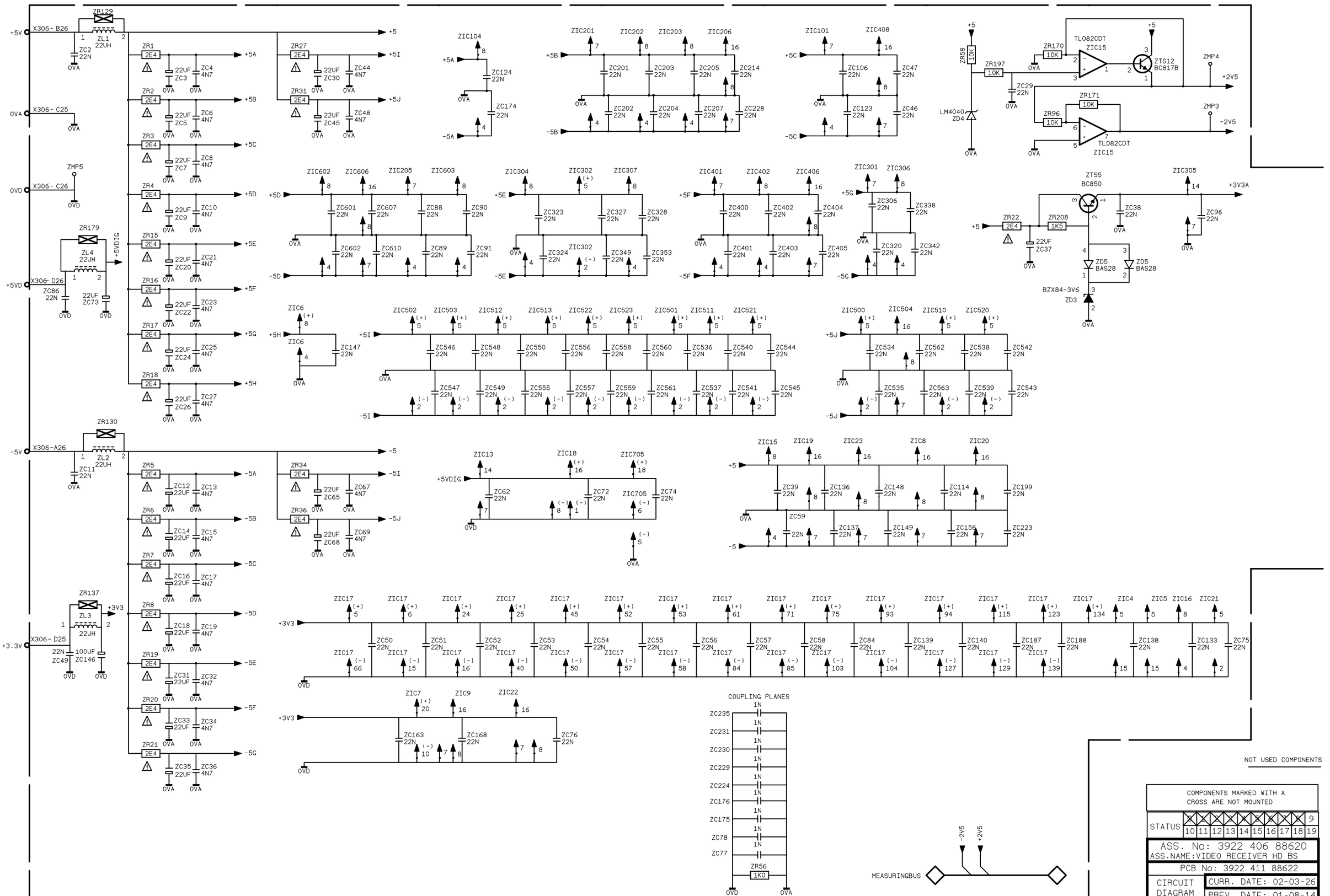
ASSEMBLY DRAWING

CURR. DATE: 02-03-26
PREV. DATE: 01-08-14
ORG. DATE: 00-09-27

NAME: J UITDEHAAG

4 SH | SHEET 110-2

PROPERTY OF:
THOMSON MULTIMEDIA BROADCAST SOLUTIONS
- BREDA - THE NETHERLANDS


+5V
X306- B26
ZR129
ZL1 22UH
ZC2 22N
0VA
+5
0VA
X306- C25
ZMP5
0VD
X306- C26
ZR179
ZL4 22UH
+5VDIG
+5VD
X306- D26
ZC86 22N
22UF ZC73
ZR130
-5V
X306-A26
ZL2 22UH
ZC11 22N
-5
ZR137
ZL3 22UH
+3V3
+3.3V
X306- D25
22N ZC49
100UF ZC146
ZR1 2E4 +5A
ZR2 2E4 +5B
ZR3 2E4 +5C
ZR4 2E4 +5D
ZR15 2E4 +5E
ZR16 2E4 +5F
ZR17 2E4 +5G
ZR18 2E4 +5H
ZC1 22UF ZC3 4N7
ZC4 4N7
ZC5 22UF ZC6 4N7
ZC7 22UF ZC8 4N7
ZC9 22UF ZC10 4N7
ZC20 22UF ZC21 4N7
ZC22 22UF ZC23 4N7
ZC24 22UF ZC25 4N7
ZC26 22UF ZC27 4N7
ZR27 2E4 +5I
ZR31 2E4 +5J
ZC30 22UF ZC44 4N7
ZC45 22UF ZC48 4N7
ZR5 2E4 -5A
ZR6 2E4 -5B
ZR7 2E4 -5C
ZR8 2E4 -5D
ZR19 2E4 -5E
ZR20 2E4 -5F
ZR21 2E4 -5G
ZC12 22UF ZC13 4N7
ZC14 22UF ZC15 4N7
ZC16 22UF ZC17 4N7
ZC18 22UF ZC19 4N7
ZC31 22UF ZC32 4N7
ZC33 22UF ZC34 4N7
ZC35 22UF ZC36 4N7
ZR34 2E4 -5I
ZR36 2E4 -5J
ZC65 22UF ZC67 4N7
ZC68 22UF ZC69 4N7
ZIC104
ZC124 22N
ZC174 22N
ZIC201 ZIC202 ZIC203 ZIC206
ZC201 22N ZC203 22N ZC205 22N ZC214 22N
ZC202 22N ZC204 22N ZC207 22N ZC228 22N
ZIC101 ZIC408
ZC106 22N ZC47 22N
ZC123 22N ZC46 22N
ZR58 10K
LM4040 ZD4
ZR197 10K
ZC29 22N
ZR170 10K
TL082CDT ZIC15
ZTS12 BC817B
ZMP4 +2V5
ZR171 10K
ZR96 10K
ZMP3 -2V5
ZIC602 ZIC606 ZIC205 ZIC603
ZC601 22N ZC607 22N ZC88 22N ZC90 22N
ZC602 22N ZC610 22N ZC89 22N ZC91 22N
ZIC304 ZIC302 ZIC307
ZC323 22N ZC327 22N ZC328 22N
ZC324 22N ZC302 ZC349 22N ZC353 22N
ZIC401 ZIC402 ZIC406
ZC400 22N ZC402 22N ZC404 22N
ZC401 22N ZC403 22N ZC405 22N
ZIC301 ZIC306
ZC306 22N ZC338 22N
ZC320 22N ZC342 22N
ZTS5 BC850
ZR22 2E4
ZR208 1K5
22UF ZC37
ZC38 22N
ZD5 BAS28
ZD5 BAS28
BZX84-3V6 ZD3
ZIC305
ZC96 22N
+3V3A
ZIC6
ZC147 22N
ZIC502 ZIC503 ZIC512 ZIC513 ZIC522 ZIC523 ZIC501 ZIC511 ZIC521
ZC546 22N ZC548 22N ZC550 22N ZC556 22N ZC558 22N ZC560 22N ZC536 22N ZC540 22N ZC544 22N
ZC547 22N ZC549 22N ZC555 22N ZC557 22N ZC559 22N ZC561 22N ZC537 22N ZC541 22N ZC545 22N
ZIC500 ZIC504 ZIC510 ZIC520
ZC534 22N ZC562 22N ZC538 22N ZC542 22N
ZC535 22N ZC563 22N ZC539 22N ZC543 22N
ZIC13
ZC62 22N
ZIC18
ZC72 22N
ZIC705
ZC74 22N
ZIC15 ZIC19 ZIC23 ZIC8 ZIC20
ZC39 22N ZC136 22N ZC148 22N ZC114 22N ZC199 22N
ZC59 22N ZC137 22N ZC149 22N ZC156 22N ZC223 22N
ZIC17 ZIC4 ZIC5 ZIC16 ZIC21
ZC50 22N ZC51 22N ZC52 22N ZC53 22N ZC54 22N ZC55 22N ZC56 22N ZC57 22N ZC58 22N ZC84 22N ZC139 22N ZC140 22N ZC187 22N ZC188 22N ZC138 22N ZC133 22N ZC75 22N
ZIC7 ZIC9 ZIC22
ZC163 22N ZC168 22N ZC76 22N
COUPLING PLANES
ZC235 ZC231 ZC230 ZC229 ZC224 ZC176 ZC175 ZC78 ZC77 1N
ZR56 1KO
MEASURINGBUS
-2V5
+2V5
NOT USED COMPONENTS
COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED
STATUS
ASS. No: 3922 406 88620
ASS.NAME:VIDEO RECEIVER HD BS
PCB No: 3922 411 88622
CIRCUIT DIAGRAM
CURR. DATE: 02-03-26
PREV. DATE: 01-08-14
NAME: J UIJTDEHAAG
ORG. DATE: 00-09-14
PROPERTY OF:
8 SH
SHEET: 130-1
THOMSON MULTIMEDIA BROADCAST SOLUTIONS
BREDA - THE NETHERLANDS

UV56MC
SW56MC
112 MHZ OSCILLATOR
DIVIDER /2
BUFFER 56MHZ
LOCOSC(Y)
UFB56MC
HSYNC-AM
HF(Y)
HF(R-Y/B-Y)
HF-VIDEO-Y
HF-VIDEO-PR/PB
X205
DEMODULATOR PLL 56 MHZ
ZIC300 MC1496D
ZIC301 AD8014AR
ZIC302 AD8014ART
ZIC303 AD8014ART
ZIC304 TL082CDT
ZIC305 74LVC74AD
ZIC306 TL082CDT
ZIC307 LM358D
ZIC406 -74HCT4053
ZTS300 BFS19
ZTS301 BFT92
ZTS302 BFR92N
ZTS303 BFT92
ZTS304 BFR92N
ZTS305 BFR92N
ZTR300
ZTR101
ZB300 112MHZ
ZD300 BBY39
ZD301 BAS28
ZD302 BAS28
ZD303 BAS28
ZD304 BAS28
ZD304-1 BAS28
ZL300 220NH
ZL301 270NH
ZL303 2U7H
ZL304 2U7H
ZL305 12UH
ZL306 12UH
ZMP300
ZMP301
ZMP304
ZMP305
ZMP306
MEASURINGBUS
U0SC56MC
U0SC56MC2
56MC
NOT USED COMPONENTS

COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED									
STATUS	X	X	X	X	X	X	X	X	X	9
	10	11	12	13	14	15	16	17	18	19

ASS. No: 3922 406 88620	
ASS.NAME:VIDEO RECEIVER HD BS	
PCB No: 3922 411 88622	
CIRCUIT DIAGRAM	CURR. DATE: 02-03-26
	PREV. DATE: 01-08-14
NAME: J UIJTDEHAAG	ORG. DATE: 00-09-14
PROPERTY OF:	8 SH SHEET: 130-2
THOMSON MULTIMEDIA BROADCAST SOLUTIONS BREDA - THE NETHERLANDS	

WHM1A
WHM2A
CLAMPV
WHM1A
CLAMPV
WHM1A
WHM2A
CLAMPV
+5F
ZR435 2K2
+5F
ZR434 2K2
ZC420 2P7
ZR438 1K5
ZIC406 74HCT4053
MUXDX
3X1
3X2
+2V5
ZC434 100N
ZIC402 TL082CDT
ZMP407
ZR456 6K8
X306 - C7
AGC Y
ZR460 68K
ZR73 68K
ZR74 68K
ZR458 68K
ZC439 1U
ZR457 6K8
UAGCY
ZR71
ZR69 1KLIN
ZR72
WHM1A
22UF ZC437
ZC173 22N
DAC-AGC-Y
1U2H ZL403
ZC417
ZC419 OVA
ZR440 0E0
1U2H ZL404
ZC418 OVA
ZR472 0E0
BAS28 ZD400
ZD400 BAS28
AD8014AR ZIC401
ZMP406
ZL406 220NH
LOCOSC(Y)
ZC409 4N7
ZR417 75E
ZR415 75E
ZMP402
ZC408 4N7
ZR418 75E
ZMP401
ZR428 1K0
ZR427 1K0
ZR426 1K0
ZR425 1K0
ZIC400 MC1496D
ZR433 27K
ZR430 3K3
ZR431 1K2
ZR432 1K5
4N7 ZC415
ZR436 1K5
ZTS400 BC850
ZMP404
ZR471 100E
ZC421 4N7
ZR470 1K0
ZIC402 TL082CDT
ZC432 1U
ZC422 22N
ZR453 100K
ZR454 1K0
ZR455 1K0
ZR452 10KLIN
DAC-OFS-Y
+2V5
-2V5
OFFSET Y
ZIC406 74HCT4053
MUXDX
3X1
3X2
ZC440 1U
CLAMPV
ZR439 0E0
Y
HF(Y)
ZC411 4N7
ZR420 75E
ZR321 75E
4N7 ZC413
ZC410 4N7
ZR419 75E
75E ZR329
4N7 ZC319
ZR422 560E
ZR424 15E
4N7 ZC416
-5F
DEMODULATOR Y
SDA
SCL
SDA
SCL
System AGC Y
System AGC R-Y/B-Y
System AGC B-Y
X306-B16
X306-B17
X306-B18
ZC178 22N
ZC179 22N
ZC181 22N
+3V3
SDA
BSS83 ZTS2
OVD
+3V3
SCL
BSS83 ZTS3
OVD
ZIC705 MAX521C
REF3 OUT3
REF4 OUT4
OUT5
OUT6
OUT7
SDA
SCL
AD0
AD1
MAX521E ZIC705
+5VDIG
ZR85 4K7
ZR86 4K7
+2V5
ZR50 ZR94 8K2 ZR53 15K
ZR83 15K
DAC-AGC-Y
ZR51 ZR95 8K2 ZR54 15K
ZR81 15K
DAC-AGC-R-Y/B-Y
ZR52 ZR93 8K2 ZR55 15K
ZR82 15K
DAC-AGC-B-Y
ZR157 ZR158
DAC-CROSS-R-Y
ZR163 ZR164
DAC-CROSS-B-Y
ZIC705 MAX521A
REF0 OUT0
ZR249 ZR250
DAC-OFS-Y
ZIC705 MAX521B
REF1 OUT1
ZR213 ZR222
DAC-OFS-R-Y
ZIC705 MAX521C
REF2 OUT2
ZR241 ZR242
DAC-OFS-B-Y
UAGCY
MEASURINGBUS
MEASURINGBUS
DAC-OFS-R-Y
DAC-OFS-B-Y
DAC-AGC-R-Y/B-Y
DAC-AGC-B-Y
DAC-CROSS-R-Y
DAC-CROSS-B-Y

COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED

STATUS	X	X	X	X	X	X	X	X	X	9
	10	11	12	13	14	15	16	17	18	19

ASS. No: 3922 406 88620
ASS.NAME:VIDEO RECEIVER HD BS
PCB No: 3922 411 88622
CIRCUIT DIAGRAM
CURR. DATE: 02-03-26
PREV. DATE: 01-08-14
NAME: J UIJTDEHAAG
ORG. DATE: 00-09-14
PROPERTY OF:
8 SH
SHEET: 130-3
THOMSON MULTIMEDIA BROADCAST SOLUTIONS
BREDA - THE NETHERLANDS

LOCOSC(R-Y/B-Y)

HSYNC-QAM → HSYNC-QAM
UV112MC → UV112MC
SW112MC → SW112MC

+5A
ZC157 22N
ZC100 56P
ZC101 12P
ZC102 12P
220NH ZL100
ZR103 10E0
ZR104 1K0
ZR101 47E
ZTS100 BFS19
ZR108 100E
ZR109 100E
ZR112 680E
BFT92 ZTS101
ZTS102 BFR92N
ZR113 680E
ZC129 22N
ZC104 4N7
ZC105 4N7
ZC130 22N
-5A
0VA

B100 112MHZ
ZB100 112MHZ
ZD10 BBY39
ZR150 680E
ZMP106
ZR151 100E
ZC150 1N
ZR41
ZR105 100K
ZR106 100K
ZR107 100K
ZR110 10K
ZC103 56P
ZC107 22UF

SW112MC
ZR191
ZL105 12UH
ZD105 BA792
ZD106 BA792
ZL106 12UH
ZC190
ZC191
ZR146
ZIC105 AD8014ART
ZC131
ZC132
(+) (-)
112MC

ZMP100
ZMP101
ZR114 330E
ZC109 4N7
ZR117 75E
ZC108 4N7
ZR118 75E
ZC119 8P2
ZL101 220NH
ZR115 120E
ZR116 270E
ZZ6 RES112MHZ
ZC151 1N
PHASE SHIFT

ZIC100 MC1496D
ZC111 4N7
ZR120 75E
ZC113 4N7
ZC110 4N7
ZR119 75E
-5C

+5C
ZR134 2K2
ZR135 2K2
ZR128 1K0
ZR127 1K0
ZR126 1K0
ZR125 1K0
ZR133 27K
ZR176 3K3
ZR131 1K2
ZR132 1K5
4N7 ZC115
75E ZR123
4N7 ZC112
ZR124 560E
ZR177 15E
4N7 ZC116

BAS28 ZD102
BAS28 ZD101

ZC117
2U7H ZL103
2U7H ZL104
ZC155
ZC118
ZR174 0E0
ZR175 0E0
ZC120 2P7
ZR138 2K2
ZR136 2K2
ZIC101 AD8014AR

ZR251
ZR260
ZC153 220N
ZR152 68K
ZR153 3K3
ZR154 1K0
+2V5
ZC152 220N
ZIC104 TL082CDT
ZD102 ZD101
BAS28 BAS28
ZC154 220N
ZR156 8K2
ZR155 4K7
-2V5
112 MHZ OSCILLATOR

ZMP104
ZR111 10K
UFB112MC

UV112MC
ZR42 1K0
ZIC104 TL082CDT
ZR140 10K
ZC121 4N7
ZR142 10K
ZC122 100N
22K ZR141

ZIC408 -74HCT4053
G3
MUXDX
3X1
3X2
HSYNC-QAM

HF(R-Y/B-Y)

U0SC112
MEASURINGBUS
112MC
UFB112MC

COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED										
STATUS	X	X	X	X	X	X	X	X	X	9
	10	11	12	13	14	15	16	17	18	19

ASS. No: 3922 406 88620 ASS.NAME:VIDEO RECEIVER HD BS	
PCB No: 3922 411 88622	
CIRCUIT DIAGRAM	CURR. DATE: 02-03-26
	PREV. DATE: 01-08-14
NAME: J UIJTDEHAAG	ORG. DATE: 00-09-14
PROPERTY OF:	8 SH SHEET: 130-4
THOMSON MULTIMEDIA BROADCAST SOLUTIONS BREDA - THE NETHERLANDS	

WHM1A
WHM2A
CLAMPV
DAC-OFS-R-Y
DAC-OFS-B-Y
WHM1A
WHM2A
CLAMPV
UMP200
UMP600
ZMP200
DAC-CROSS-R-Y
UMP200
ZIC202 TL082CDT
ZR244 10K
ZR248 22K
ZC227 22N
ZC225 1U
ZC81
ZR246 470K
ZR245 22K
ZC247 22N
+2V5
ZR247 10KLIN
-2V5
-5B
ZR230 47K
ZC280
ZC200 4U7
ZR229 100K
ZR243 100K
ZD8 BBY39
ZR173
ZR214 330E
ZL11 330NH
ZC226 4N7
ZR215 270E
ZR216 120E
RES111MHZ
ZC209 4N7
ZR217 75E
ZR218 75E
ZC208 4N7
ZMP201
ZMP202
LOCOSC(R-Y/B-Y)
ZC206 4N7
HF(R-Y/B-Y)
ZC211 4N7
ZR220 75E
ZC213 4N7
MC1496D ZIC200
ZR223 75E
ZR224 560E
ZR221 15E
ZC212 4N7
ZC216 4N7
ZC210 4N7
ZR219 75E
ZIC206 -74HCT4053
G3
MUXDX
3X1
3X2
WHM2A
+5B
ZR235 2K2
ZR234 2K2
DEMODULATOR R-Y
ZC217
ZL203 2U7H
ZL204 2U7H
ZC219
ZC218
ZR240 0E0
ZR272 0E0
ZR228 1K0
ZR227 1K0
ZR226 1K0
ZR225 1K0
BAS28
ZD200
ZR233 27K
ZR237 3K3
ZR231 1K2
ZR232 1K5
ZC215 4N7
ZR236 2K2
ZTS200 BC850
ZR270 1K0
ZC220 0.68P
ZR238 2K2
AD8014AR ZIC201
ZIC206 74HCT4053
ZC234 100N
ZR257
ZR77 4K7
ZR78 68K
ZR258
ZIC203 TL082CDT
ZR256 6K8
ZC233 1U
ZC80
ZMP205
X306 - C8
AGC R-Y/B-Y
ZR76
ZR259 10KLIN
ZR75
ZC237 22UF
ZC165 22N
ZMP208
DAC-AGC-R-Y/B-Y
OFFSET R-Y
DAC-OFS-R-Y
ZMP204
ZC202 TL082CDT
ZR271 100E
ZC221 4N7
ZC232 1U
ZR254 1K0
ZC222 22N
ZR253 100K
ZR252 10KLIN
ZR255 1K0
ZC242 1U
ZR239 0E0
R-Y
ZMP600
DAC-CROSS-B-Y
UMP600
ZIC602 TL082CDT
ZR644 10K
ZR648 22K
ZC627 22N
ZC625 1U
ZC82
ZR646 470K
ZR645 22K
ZC646 22N
ZR647 10KLIN
ZR630 47K
ZC619
ZC600 4U7
ZR629 100K
ZR643 100K
ZD9 BBY39
ZR178
ZC606 4N7
ZL603 120NH
ZC626 4N7
ZR615 270E
ZR616 120E
ZC609 4N7
ZR617 75E
ZR618 75E
ZC608 4N7
ZR614 330E
ZZ5 RES112MHZ
ZMP601
ZMP602
ZIC600
MC1496D
ZR628 1K0
ZR627 1K0
ZR625 1K0
ZR626 1K0
ZC611 4N7
ZR620 75E
ZR143 75E
ZC613 4N7
ZR623 75E
ZR624 560E
ZR621 15E
ZC612 4N7
ZC616 4N7
ZR640 220E
BSD22 ZTS600
ZC644 22UF
ZIC606 -74HCT4053
WHM1A
+5B
ZR634 2K2
ZR635 2K2
DEMODULATOR B-Y
ZC617
ZL607 2U7H
ZL608 2U7H
ZC648
ZC649
ZR674 0E0
ZR686 0E0
ZR633 27K
ZR632 3K3
ZR631 1K2
ZR33 1K5
ZC615 4N7
ZR636 2K2
ZTS601 BC850
ZR670 1K0
ZC620 0.68P
ZR638 2K2
AD8014AR ZIC205
ZMP608
ZR639 0E0
B-Y
OFFSET B-Y
DAC-OFS-B-Y
ZMP604
ZC602 TL082CDT
ZR671 100E
ZC621 4N7
ZC632 1U
ZR654 1K0
ZR655 1K0
ZC650 22N
ZR653 100K
ZR652 10KLIN
ZC606 74HCT4053
ZC642 1U
CLAMPV
DAC-AGC-B-Y
ZR657 33K
ZC629 100N
ZC630 22N
ZR659 10KLIN
ZR79
ZR80
ZMP605
ZIC603 AD822
ZR641 470K
ZC643 100N
ZC633 1U
ZC83
ZR658 470K
ZR642 33K
ZC634 100N
WHM2A
DAC-AGC-B-Y
DAC-CROSS-R-Y
DAC-CROSS-B-Y
DAC-AGC-R-Y/B-Y
UMP200
UMP600
MEASURINGBUS

COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED

STATUS	X	X	X	X	X	X	X	X	X	9
	10	11	12	13	14	15	16	17	18	19

ASS. No: 3922 406 88620
ASS.NAME:VIDEO RECEIVER HD BS
PCB No: 3922 411 88622

CIRCUIT DIAGRAM	CURR. DATE: 02-03-26
	PREV. DATE: 01-08-14
NAME: J UIJTDEHAAG	ORG. DATE: 00-09-14
PROPERTY OF:	8 SH SHEET: 130-5

THOMSON MULTIMEDIA BROADCAST SOLUTIONS
BREDA - THE NETHERLANDS

WHM1A
WHM2A
CLAMPHOR

WHM1A
WHM2A
CLAMPHOR

R-Y

ZIC504
-74HCT4053
74HCT4053
BLANK(R-Y)

ZR501 1K0
ZC531 15P
ZR502 1K0
ZIC500 AD8014ART
ZR503 1K0
ZR509 27K
ZR504 75E

S1

15 MHZ LOWPASS FILTER

ZC505 33P
ZC504 5P6
ZL501 820NH
ZC508 100P
ZC507 56P
ZL502 470NH

ZC501 47P
ZC502 33P
ZC503 100P
ZC506 68P
ZC509 18P
ZC510 8P2

S2

ZR505 150E
ZR511 270E

ZIC501 AD8014ART
ZR506 1K0
ZR508 2K2
ZR516 75E
X306 - (R-Y mon)
X306 - D3 (R-Y mon ret)

R-Y option

ZIC502 AD8014ART
ZR512 1K0
ZR513 2K2
ZR517 75E
X306 - D8
X306 - D9 R-Y option ret

ZIC503 AD8014ART
ZR514 1K0
ZR515 2K2
ZR518 75E
X306 -D18 R-Y trans
X306 -D17
X306 -C18
X306 -C19
X306 -D19 R-Y trans ret

ZIC511 AD8014ART
ZR526 1K0
ZR528 1K0
ZR536 75E
X306 - D2 (Y-mon)
X306 - D1 (Y-mon ret)

ZIC512 AD8014ART
ZR532 1K0
ZR533 1K0
ZR537 75E
X306 - D6 Y-option
X306 - D5
X306 - D7 Y-option ret

ZIC513 AD8014ART
ZR534 470E
ZR535 1K0
ZR538 75E
X306 -D15 Y trans
X306 -D14
X306 -D16
X306 -C14
X306 -C15
X306 -C16 Y trans ret

Y

ZIC504
BLANK-Y

ZL507 3U3H
ZC552 1P
ZC532 1P2
ZR521 270E
ZR522 1K0
ZIC510 AD8014ART
ZR523 1K0
ZR529 27K
ZR524 75E

S3

30 MHZ LOWPASS FILTER

ZC515 3P3
ZC514 15P
ZL503 430NH
ZC518 22P
ZC517 56P
ZL504 220NH

ZC511 22P
ZC512 18P
ZC513 56P
ZC516 27P
ZC519 10P
ZC520 2P7

S4

ZR525 150E
ZR531 270E

ZIC521 AD8014ART
ZR546 1K0
ZR548 2K2
ZR556 75E
X306 - C1 (B-Y mon)
X306 - C2 (B-Y mon ret)

ZIC522 AD8014ART
ZR552 1K0
ZR553 2K2
ZR557 75E
X306 -D10 B-Y option
X306 -D11

B-Y option ret

ZIC523 AD8014ART
ZR554 1K0
ZR555 2K2
ZR558 75E
X306 -D21 B-Y trans
X306 -D22
X306 -C20
X306 -C21 B-Y trans ret
X306 -C22

B-Y

ZIC504
BLANK(B-Y)

ZR541 1K0
ZC533 15P
ZR542 1K0
ZIC520 AD8014ART
ZR543 1K0
ZR549 27K
ZR544 75E

S5

15 MHZ LOWPASS FILTER

ZC525 33P
ZC524 5P6
ZL505 820NH
ZC528 100P
ZC527 56P
ZL506 470NH

ZC521 47P
ZC522 33P
ZC523 100P
ZC526 68P
ZC529 18P
ZC530 8P2

S6

ZR545 150E
ZR551 270E

MEASURINGBUS

COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED

STATUS	X	X	X	X	X	X	X	X	9
	10	11	12	13	14	15	16	17	18	19

ASS. No: 3922 406 88620
ASS.NAME:VIDEO RECEIVER HD BS

PCB No: 3922 411 88622

CIRCUIT DIAGRAM
CURR. DATE: 02-03-26
PREV. DATE: 01-08-14

NAME: J UIJTDEHAAG
ORG. DATE: 00-09-14

PROPERTY OF:
8 SH SHEET: 130-6

THOMSON MULTIMEDIA BROADCAST SOLUTIONS
BREDA - THE NETHERLANDS

E-SDA
E-SCL
E-INT
X306-A7
X306-A8
X306-A9
ZR25 100E
ZR26 100E
ZR9 100E
BSCAN-SDA
BSCAN-SCL
INT
ZIC4
PCF8574TS
I2CLC
I2CNID
EPLD-ACTIVE
SELN56MC
SELN112MC
+3V3
ZR40 100K
ZR44 100K
ZR43 100K
OVD
ZIC17
EPF10K10ATI144
STANDAARD
6MHZ75
I2CNID
ZR269 4K7
ZR268 4K7
ZR267 4K7
ZR261 10K
ZIC9
-74HCT4053
ZR23 100K
ZR24 100K
ZR67 100K
SDA
SCL
ZIC16
PCF8582C
ZIC5
PCF8574TS
MEASURE-CONTROL
MS1
MS2
MS3
MCE1
MCE2
NPGM
NPCS
NP0E
ZR13 220K
ZR37 39K
ZR203 ZR204
ZIC20
74HCT4053D
ZC85 6N8
OVA
VMODE
SYNC-SEPERATOR
ZIC6
GS4981
RSET
VID-IN
CS
V
H
BP
ZR98 10K
PLL
ZIC18
74HCT9046A
COMPIN
SIGIN
RB
PC1/PCP
PC2
C1A
C1B
R1
R2
VCOIN
INH
DEM
VCO
ZC60 ZC61 56P
ZR29 22K
8K2
ZR11
ZR97 220K
ZR92 10K
ZR183
ZC182
BLANK-Y
ZR184
ZC184
HSYNC-QAM
HSYNC-AM
ZR185
ZC185
ZR66 10K
ZR30 10K
ZIC22
74HCT4053
DIS-DCLK
+5VDIG
ZIC13
74HCT74PW
ZC64 1N
ZR28 33K
ZC63 22N
6MHZ75
ZR87 1K0
ZR64 1K8
DCLK
Carrier Present
Aux2 Video
Aux2 Video ret
Aux2 Video ret
X306-A19
X306-A21
X306-A22
X306-A20
CARR-PRES
ZR122 100K
ZC28 100N
ZR10 75E
ZR102 100K
ZR100 100K
ZR99 100K
H-drive
V-drive
Frame sync
X306-A12
X306-B12
X306-C12
H-DRIVE
V-DRIVE
FRAMESYNC
ZR198
ZR12
ZR167 10K
ZR165 4K7
ZR166 4K7
FRAMESYNC
ZR89 10K
ZR90 10K
ZR91 10K
BSCAN1
BSCAN2
BSCAN-SDA
BSCAN-SCL
ZIC22
-74HCT4053
ZIC7
AT17LV256-10SI
DCLK DATA
CSN
OE
CASCN
PGMN
ZR161 1K8
ZR162 1K8
ZR172 100K
ZR169 100K
ZR168 4K7
ZR159 4K7
BC860B
ZTS4
BC860B
ZTS1
Configuration PROM
ZIC21
MAX823EUK
WDI
RESET
MR
ZR160 10K
ZR149 100K
WATCHDOG
NPGM
H-DRIVE
V-DRIVE
TDH
TMS
TDI
TCK
DATAO
DCLK
NCONFIG
NSTATUS
NCEO
CONFDONE
MSEL0
MSEL1
NCE
I0141/NRS
I0142/NWS
I0143/CS
I0144/NCS
I0122/DEVCLRN
I0128/DEVOE
I0/DATA7
I0/DATA6
I0/DATA5
I0/DATA4
I0/DATA3
I0/DATA2
I0/DATA1
I07/CLKUSR
I011/RDNBUSY
I014/INITDONE
UVEN
CON56MC
CON112MC
VMODE
DIS-DCLK
EPLD-ACTIVE
CLAMPHOR
CLAMPV
WHM1A
WHM2A
WATCHDOG
BLANK-Y
BLANK(B-Y)
BLANK(R-Y)
ZR189 ZC195
ZR188 ZC193
ZR187 ZC192
ZR186 ZC189
ZR182 ZC180
ZR181 ZC177
ZR180 ZC145
0E0
0VD
NTRST
TMS
TCK
TDH
TDI
X306-A4
X306-A2
X306-A3
X306-A5
X306-A6
ZR67
ZR68 ZR69
ZR70
1K0
MEASURINGBUS
BSCAN1
BSCAN2
+3V3
WHM1A
WHM2A
CLAMPHOR
CLAMPV
HSYNC-QAM
HSYNC-AM
UVEN
SELN56MC
SELN112MC
CON56MC
CON112MC
DIS-DCLK

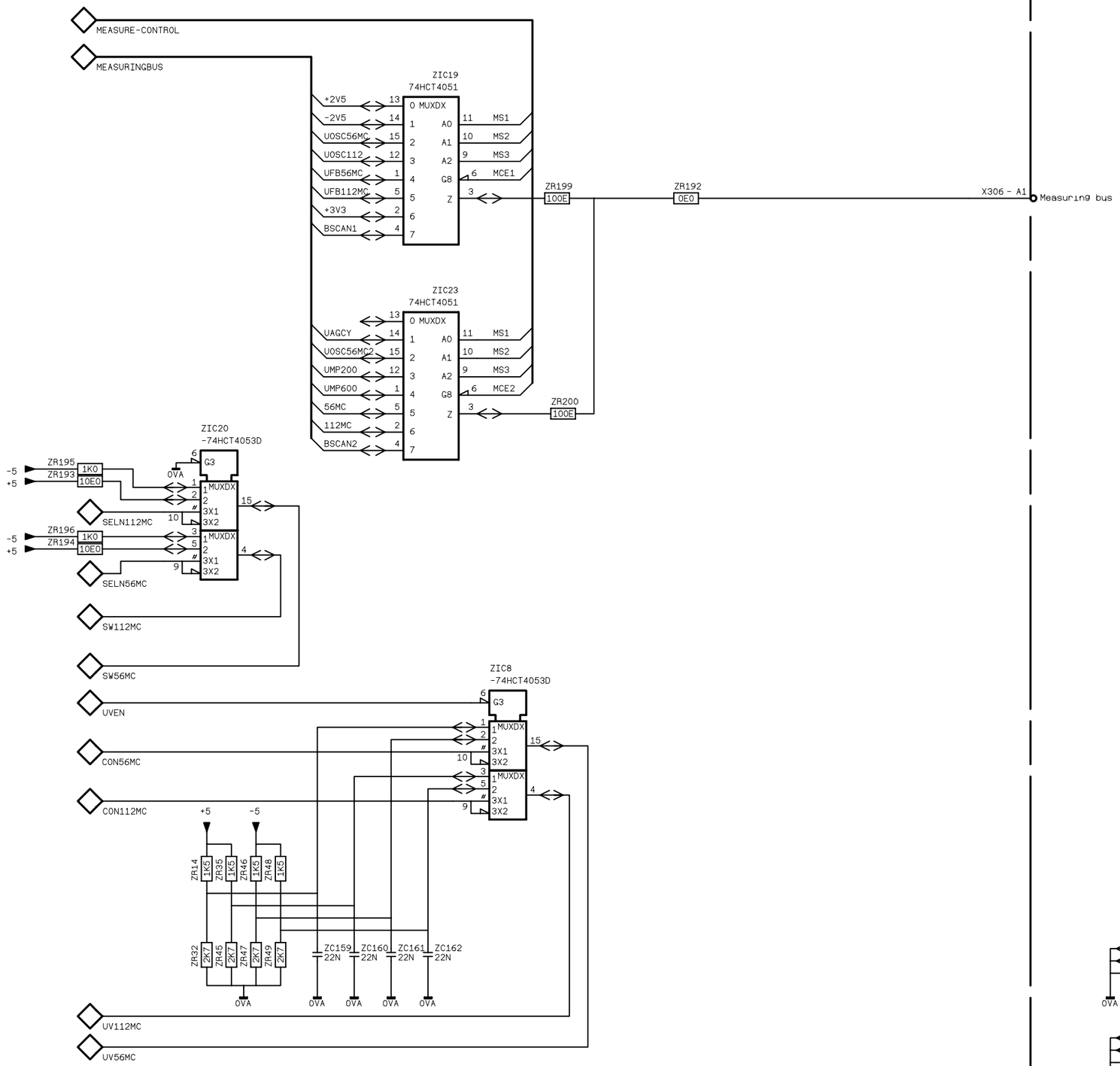
COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED

STATUS	X	X	X	X	X	X	X	X	X	9
	10	11	12	13	14	15	16	17	18	19

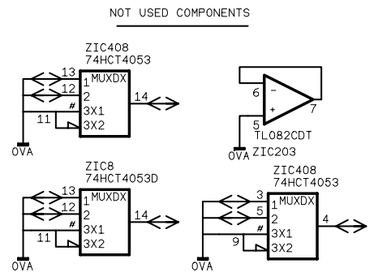
ASS. No: 3922 406 88620
ASS.NAME:VIDEO RECEIVER HD BS
PCB No: 3922 411 88622

CIRCUIT DIAGRAM	CURR. DATE: 02-03-26
	PREV. DATE: 01-08-14
NAME: J UIJTDEHAAG	ORG. DATE: 00-09-14
PROPERTY OF:	8 SH SHEET: 130-7

THOMSON MULTIMEDIA BROADCAST SOLUTIONS
BREDA - THE NETHERLANDS



NOT USED COMPONENTS



COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED

STATUS	X	X	X	X	X	X	X	X	X	9
	10	11	12	13	14	15	16	17	18	19

ASS. No: 3922 406 88620
ASS.NAME:VIDEO RECEIVER HD BS

PCB No: 3922 411 88622

CIRCUIT DIAGRAM

CURR. DATE: 02-03-26

PREV. DATE: 01-08-14

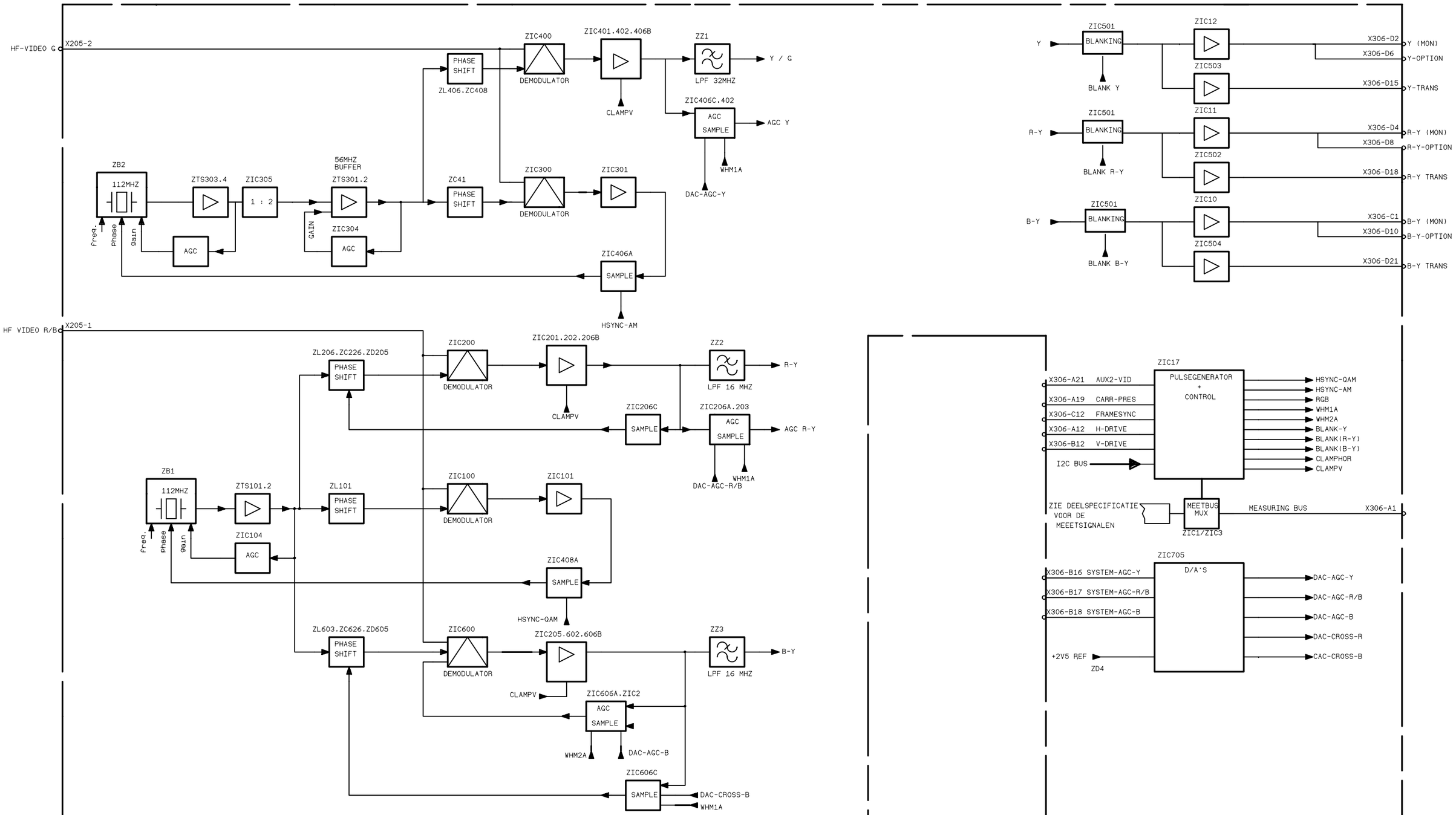
NAME: J UIJTDEHAAG

ORG. DATE: 00-09-14

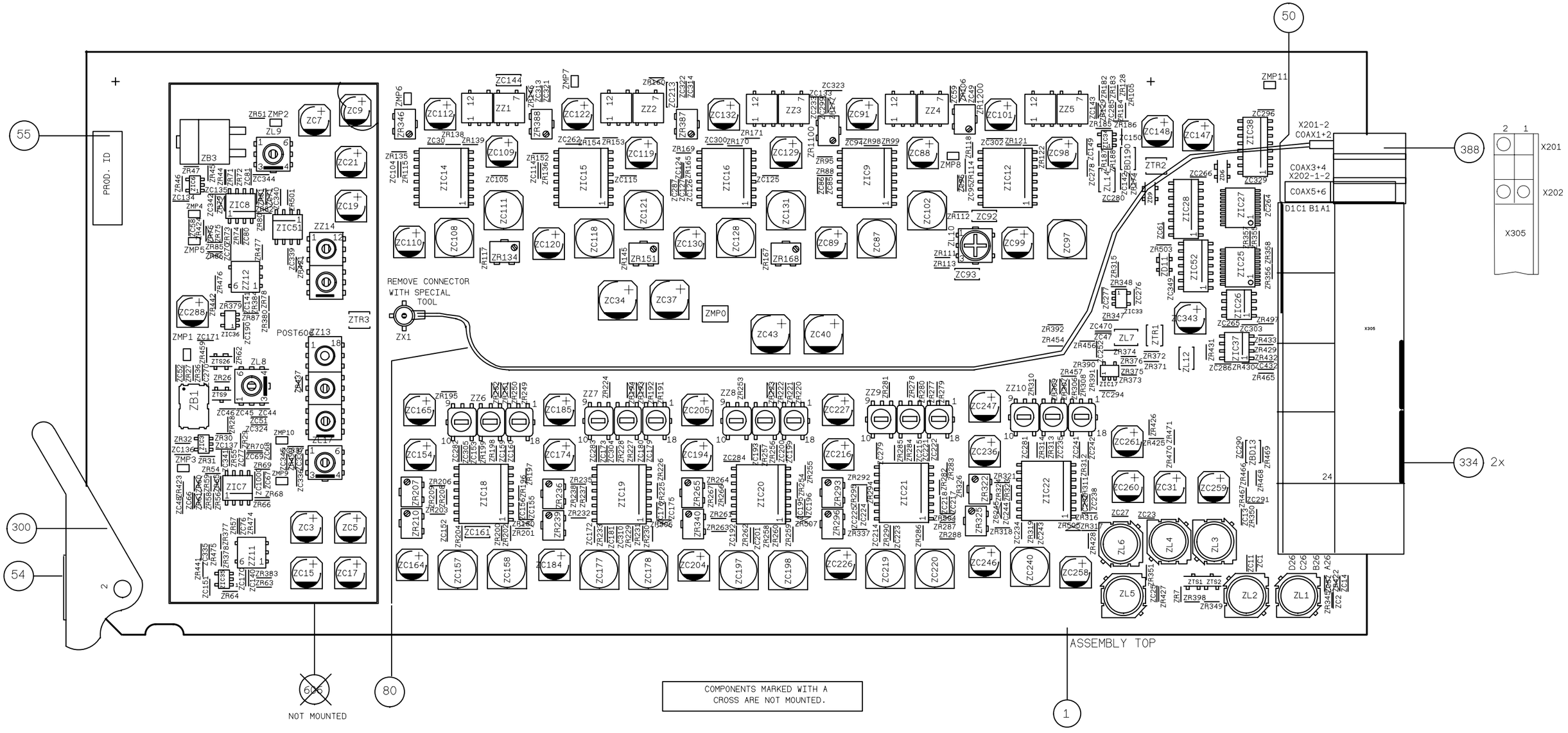
PROPERTY OF:

8 SH SHEET: 130-8

THOMSON MULTIMEDIA BROADCAST SOLUTIONS
BREDA - THE NETHERLANDS



ASS. No: 3922 406 88620	
ASS.NAME:VIDEO RECEIVER HD BS	
BLOCK DIAGRAM	CURR. DATE: 00-10-30
	PREV. DATE: 99-04-16
NAME: UIJTDEHAAG	ORG. DATE: 98-12-08
PROPERTY OF:	1 SH SHEET: 136-1
THOMSON MULTIMEDIA BROADCAST SOLUTIONS BREDA - THE NETHERLANDS	



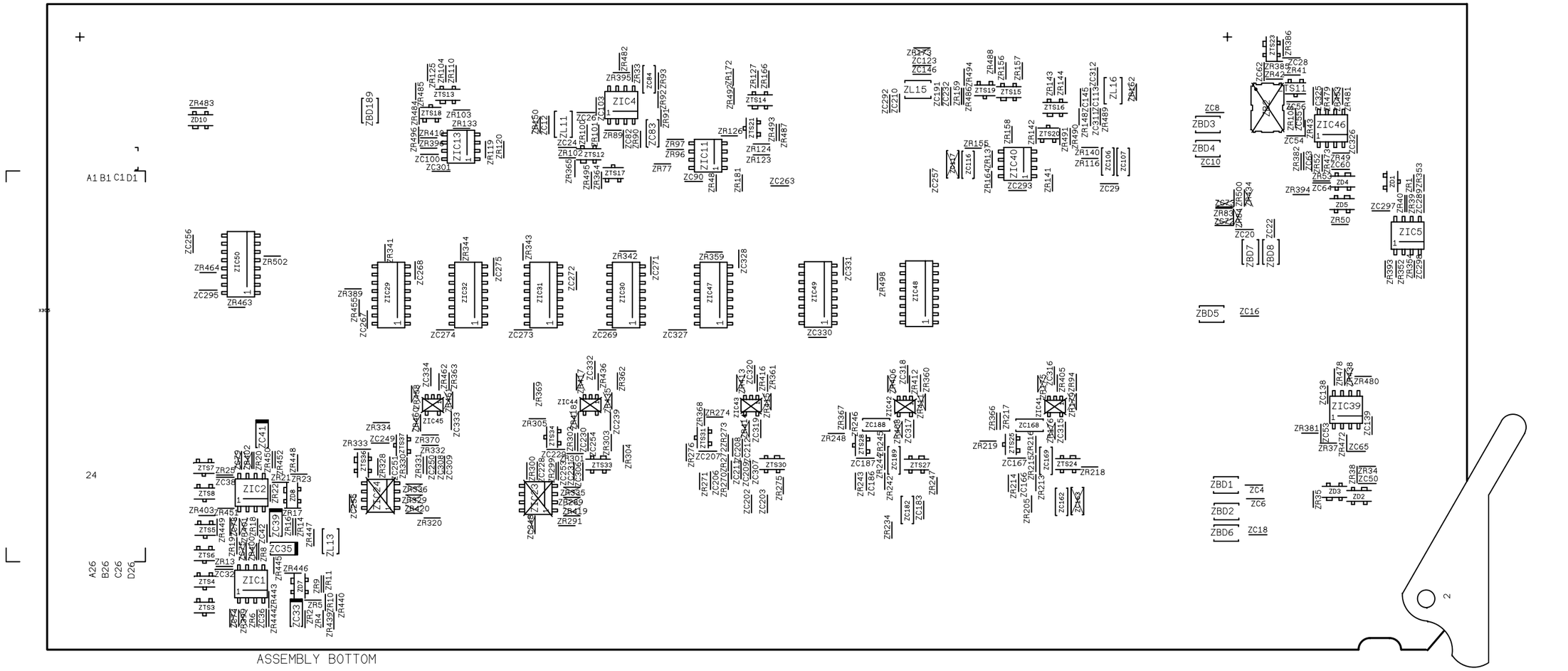
STATUS:	0	1	2	3	4	5	6	7	8	9
	10	11	12	13	14	15	16	17	18	19

ASS. 12NC: 3922 406 89900
ASS. NAME: FM TRANSCEIVER TP HD

PCB 12NC: 3922 411 87704

ASSEMBLY	CURR. DATE: 02-03-28	
DRAWING	PREV. DATE: 02-03-28	
NAME Bellsterveld	ORG. DATE: 02-03-28	
PROPERTY OF:	4 SH	SHEET 110-1

THOMSON MULTIMEDIA BROADCAST SOLUTIONS
- BREDA - THE NETHERLANDS



COMPONENTS MARKED WITH A
CROSS ARE NOT MOUNTED

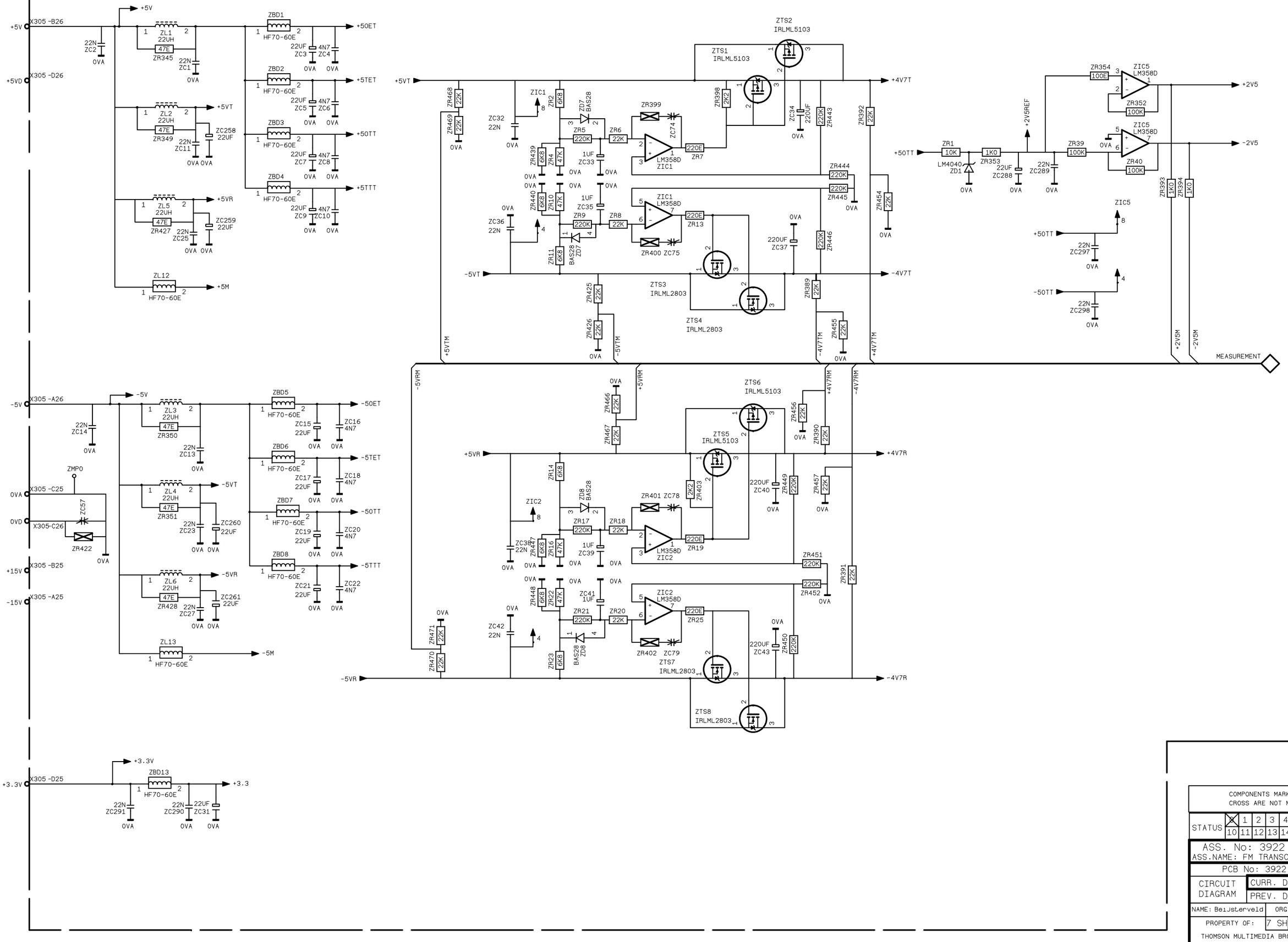
STATUS:	0	1	2	3	4	5	6	7	8	9
	10	11	12	13	14	15	16	17	18	19

ASS. 12NC: 3922 406 89900
ASS. NAME: FM TRANSCEIVER TP HD

PCB 12NC: 3922 411 87704

ASSEMBLY DRAWING	CURR. DATE: 02-03-28	
	PREV. DATE: 02-03-28	
NAME Beijsterveld	ORG. DATE: 02-03-28	
PROPERTY OF:	4 SH	SHEET 110-2

THOMSON MULTIMEDIA BROADCAST SOLUTIONS
- BREDA - THE NETHERLANDS



COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED

STATUS	X	1	2	3	4	5	6	7	8	9
	10	11	12	13	14	15	16	17	18	19

ASS. No: 3922 406 89900
ASS.NAME: FM TRANSCEIVER TP HD

PCB No: 3922 411 87704

CIRCUIT DIAGRAM

CURR. DATE: 02-03-28

PREV. DATE: 02-03-28

NAME: Beijsterveld

ORG. DATE: 02-03-28

PROPERTY OF:

7 SH SHEET: 130-1

THOMSON MULTIMEDIA BROADCAST SOLUTIONS
BREDA - THE NETHERLANDS

11 MHz oscillator

11 MHz 2 Vtt

Extern Video AM-modulator

33 MHZ DIP

Cable compensation (6dB/6-16MHz)

Modulation depth ext. video

TP oscillator

2 Vtt

Telepromter Video AM-modulator

Modulation depth telepromter video

EXTVIDEOCAM-RET

EXTVIDEOCAM

EXTVIDEOCAM-RET

TPVIDEOCAM-RET

TPVIDEOCAM

TPVIDEOCAM-RET

MEASUREMENT

DATA

EXT/TPTX

COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED

STATUS: X 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19

ASS. No: 3922 406 89900
ASS.NAME: FM TRANSCEIVER TP HD

PCB No: 3922 411 87704

CIRCUIT DIAGRAM — CURR. DATE: 02-04-24 — PREV. DATE: 02-03-28

NAME: Beijsterveld — ORG. DATE: 02-03-28

PROPERTY OF: — 7 SH — SHEET: 130-2

THOMSON MULTIMEDIA BROADCAST SOLUTIONS
BREDA - THE NETHERLANDS

1913 KHz Transmitter

4000 KHz Transmitter

adj. 1913 kHz carrierfrequency

adj. 4000 kHz carrierfrequency

9565 KHz DIP

ZZ4 LPF1913KHZ

ZZ5 LPF4000KHZ

NOT USED COMPONENTS

COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED

STATUS	X	1	2	3	4	5	6	7	8	9
	10	11	12	13	14	15	16	17	18	19

ASS. No: 3922 406 89900
ASS.NAME: FM TRANSCEIVER TP HD

PCB No: 3922 411 87704

CIRCUIT DIAGRAM
CURR. DATE: 02-03-28
PREV. DATE: 02-03-28

NAME: Beijsterveld
ORG. DATE: 02-03-28

PROPERTY OF:
7 SH SHEET: 130-3

THOMSON MULTIMEDIA BROADCAST SOLUTIONS
BREDA - THE NETHERLANDS

ENGTOCAM
ENGTOCAMRET
MICBS
PRODTOCAM
PRODTOCAMRET
PRODTOCAMRET
PROGTOCAM
PROGTOCAMRET
PROGTOCAMRET
MEASUREMENT
DATA
FMTXSIGNALS
ENGMOD
PRODMOD
PROGMOD
MEASUREMENT
DATA
AIRX
RX
INT\HV\DATATX
AUDIO/INTCMRX
X202-1
X202-1-2
X202-2
adj.freq. deviation
100 kHz Transmitter
adj. 100 kHz carrierfrequency
209 kHz Transmitter
adj. 209 kHz carrierfrequency
915 kHz Transmitter
adj. 915 kHz carrierfrequency
700 KHZ DIP
1045 KHZ DIP
2766 KHZ PEAKING
28 MHz DIP
TMP100F
TRANSMITTEROFF
TMP209F
TMP915F
LPF209IN
LPF100IN
LPF915IN

COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED									
STATUS	X	1	2	3	4	5	6	7	8	9
	10	11	12	13	14	15	16	17	18	19

ASS. No: 3922 406 89900 ASS.NAME: FM TRANSCEIVER TP HD	
PCB No: 3922 411 87704	
CIRCUIT DIAGRAM	CURR. DATE: 02-03-28
	PREV. DATE: 02-03-28
NAME: Beijsterveld	ORG. DATE: 02-03-28
PROPERTY OF:	7 SH SHEET: 130-4
THOMSON MULTIMEDIA BROADCAST SOLUTIONS BREDA - THE NETHERLANDS	

145 kHz FM receiver

302 kHz FM receiver

632 kHz FM receiver

de-emphases 75us

7kHz o -2dB

60kHz o -2dB

FREQ. 145 kHz

FREQ. 302 kHz

FREQ. 632 kHz

MEASUREMENT

DATA

RX

COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED

STATUS	X	1	2	3	4	5	6	7	8	9
	10	11	12	13	14	15	16	17	18	19

ASS. No: 3922 406 89900
ASS.NAME: FM TRANSCEIVER TP HD

PCB No: 3922 411 87704

CIRCUIT DIAGRAM	CURR. DATE: 02-03-28
	PREV. DATE: 02-03-28
NAME: Beijsterveld	ORG. DATE: 02-03-28
PROPERTY OF:	7 SH SHEET: 130-5

THOMSON MULTIMEDIA BROADCAST SOLUTIONS
BREDA - THE NETHERLANDS

1323 kHz receiver

2766 kHz receiver

de-emphases 75us

60kHz o -2dB

150kHz o -2dB

FREQ. 1323 kHz

FREQ. 2766 kHz

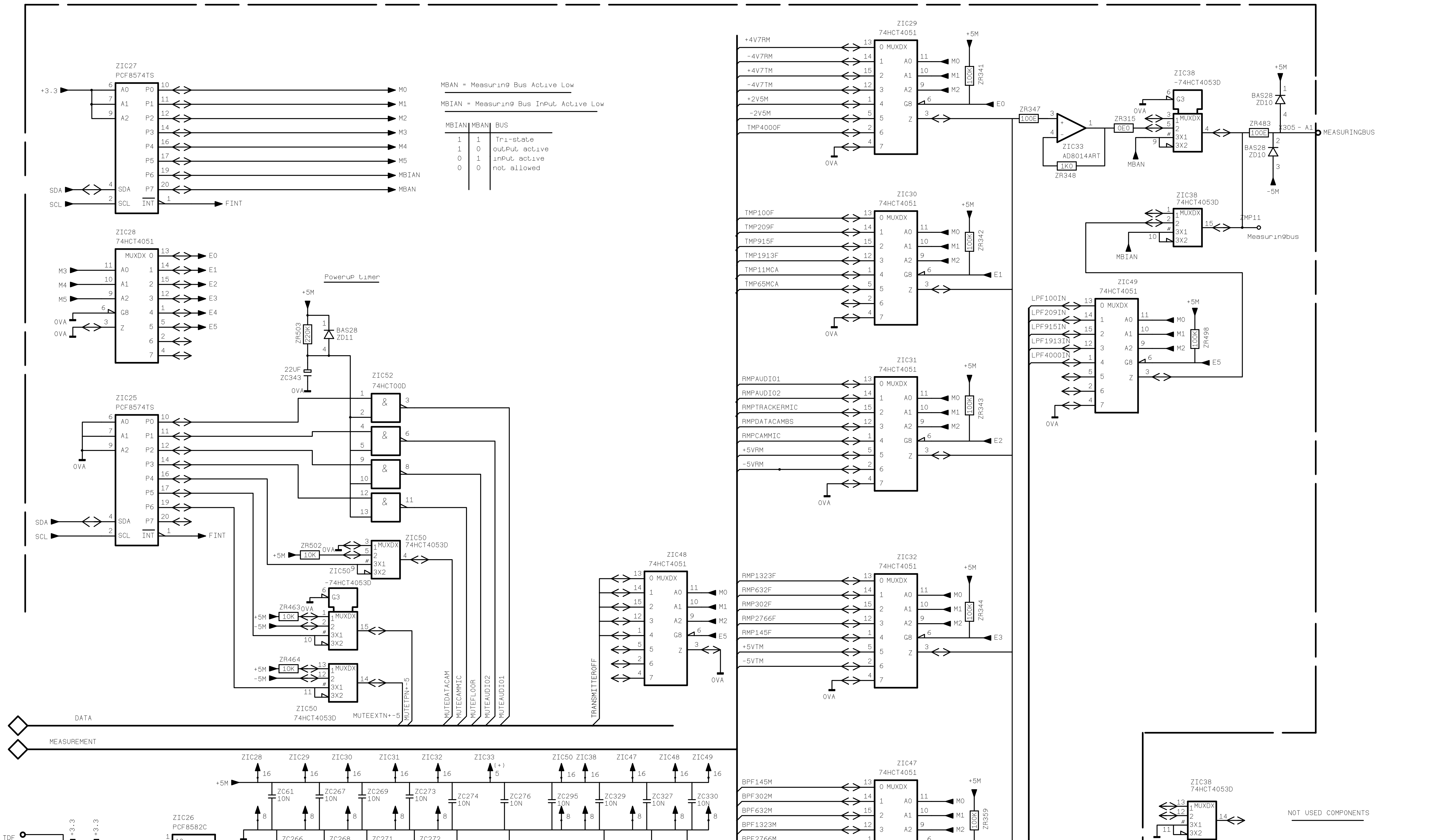
NOT USED COMPONENTS

DATA

MEASUREMENT

RX

COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED	
STATUS	X 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
ASS. No: 3922 406 89900	
ASS.NAME: FM TRANSCEIVER TP HD	
PCB No: 3922 411 87704	
CIRCUIT DIAGRAM	CURR. DATE: 02-03-28
	PREV. DATE: 02-03-28
NAME: Beijsterveld	ORG. DATE: 02-03-28
PROPERTY OF:	7 SH SHEET: 130-6
THOMSON MULTIMEDIA BROADCAST SOLUTIONS BREDA - THE NETHERLANDS	



COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED

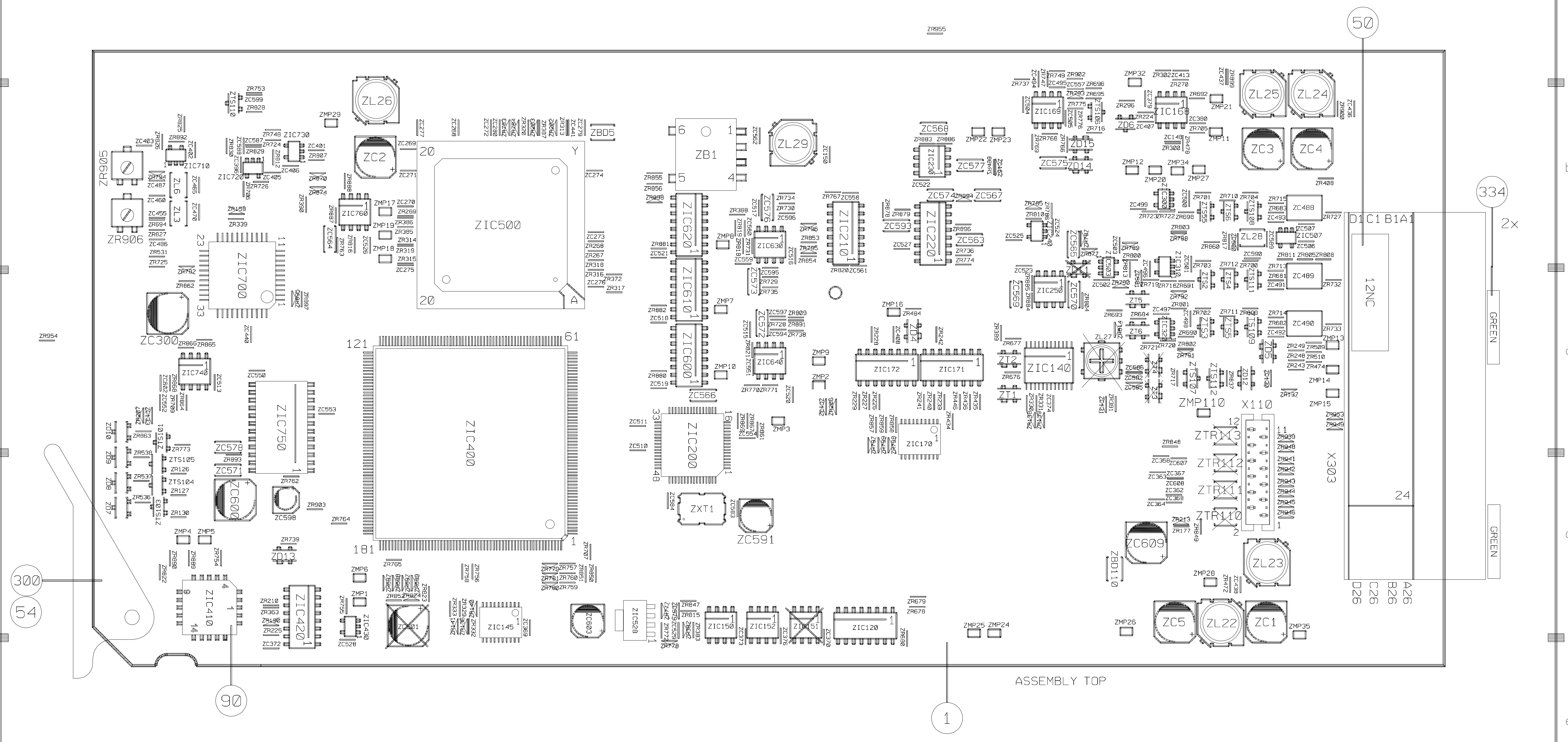
STATUS	1	2	3	4	5	6	7	8	9
10	11	12	13	14	15	16	17	18	19

ASS. No: 3922 406 89900
ASS.NAME: FM TRANSCEIVER TP HD
PCB No: 3922 411 87704

CIRCUIT DIAGRAM
CURR. DATE: 02-03-28
PREV. DATE: 02-03-28
NAME: Beijsterveld
ORG. DATE: 02-03-28
PROPERTY OF: 7 SH SHEET: 130-7

THOMSON MULTIMEDIA BROADCAST SOLUTIONS
BREDA - THE NETHERLANDS

THOMSON MULTIMEDIA BROADCAST SOLUTIONS



STATUS : 08

ASS. 12NC: 3922 406 88731
ASS. NAME: sync encoder hd bs
PCB 12NC.: 3922 411 88732

ASSEMBLY TOP SCALE 1.5:1	CURR. DATE: 02-05-27 PREV. DATE: 02-02-05 ORG. DATE: 00-08-15
PROPERTY OF : THOMSON MULTIMEDIA BROADCAST SOLUTIONS - BREDA - THE NETHERLANDS	SHEET: 110-1

THOMSON MULTIMEDIA BROADCAST SOLUTIONS

ZIC330

ZIC350

ZIC110

ZBD6

ZBD3

ZIC527

PROD ID 55

ASSEMBLY BOTTOM

STATUS : 08	
ASS. 12NC: 3922 406 88731 ASS. NAME: sync encoder hd bs	
PCB 12NC.: 3922 411 88732	
ASSEMBLY BOTTOM SCALE 1.5:1	CURR. DATE: 02-05-27 PREV. DATE: 02-02-05 ORG. DATE: 00-08-15
PROPERTY OF : THOMSON MULTIMEDIA BROADCAST SOLUTIONS – BREDA – THE NETHERLANDS	SHEET: 110–2

THOMSON MULTIMEDIA BROADCAST SOLUTIONS

EPLD (400)

+5L ZR382 0E
+3L ZR383 0E
ZC529 22n
ZIC528 LP3961-2V5 VIN VOUT SDN ERRORN GND
ZR772 10K
ZR778
ZR815 1K → MB_2V5EPLD
+2V5EPLD
ZR777
ZC579
ZR847 0E
ZC603 10uF
ZC533 ZC534 ZC531 ZC532 ZC537 ZC538 ZC535 ZC536 22n
ZC605 22n
ZC541 ZC542 ZC539 ZC540 ZC545 ZC546 ZC543 ZC544 ZC604 ZC606 22n
0L

ZIC400 EPF10K50E VCCINT VCCIO GNDINT CKLK
5 27 47 96 122 130 150 170 16 37 57 77 112 140 160 189 205 224 89
10 22 32 42 52 69 85 104 125 135 145 155 165 176 197 216 232 93

ZIC410 (+) 20 ZC530 22n (-) 10
ZIC430 (+) 5 ZC528 22n (-) 2
+3L 0L

YCin

EPLD_27MHz 91 IN_GCLK_91
CLK_74MHz 211 IN_GCLK_211
SDA_M SCL_M ZR850 0E ZR851 0E
240 IO_nCS
239 IO_CS
90 INPUT_90
92 INPUT_92
210 INPUT_210
212 INPUT_212

YC_SER(19) 6 IO_6
YC_SER(18) 7 IO_7
YC_SER(17) 8 IO_8
YC_SER(16) 9 IO_9
YC_SER(15) 12 IO_12
YC_SER(14) 13 IO_13
YC_SER(13) 14 IO_14
YC_SER(12) 15 IO_15

YC_SER(11) 17 IO_17
YC_SER(10) 18 IO_18
YC_SER(9) 19 IO_19
YC_SER(8) 20 IO_20
YC_SER(7) 21 IO_21
YC_SER(6) 24 IO_24
YC_SER(5) 25 IO_25
YC_SER(4) 28 IO_28

YC_SER(6) 29 IO_29
YC_SER(7) 30 IO_30
YC_SER(8) 31 IO_31
YC_SER(9) 33 IO_33
spare_lvds 34 IO_34
IEn_LVDS 35 IO_35
VFS_EXT1 36 IO_36
VFNOTCH_N 38 IO_38
VFNOTCH_P 39 IO_39
SEL_IBB 40 IO_40
41 IO_41
43 IO_43
44 IO_44
45 IO_45
CLK_scale_in 46 IO_46
CBsc_in(0) 48 IO_48
CBsc_in(1) 49 IO_49
CBsc_in(2) 50 IO_50
CBsc_in(3) 51 IO_51
CBsc_in(4) 53 IO_53
CBsc_in(5) 54 IO_54
CBsc_in(6) 55 IO_55
CBsc_in(7) 56 IO_56
YR_sc_in(0) 61 IO_61
YR_sc_in(1) 62 IO_62
YR_sc_in(2) 63 IO_63
YR_sc_in(3) 64 IO_64
YR_sc_in(4) 65 IO_65
YR_sc_in(5) 66 IO_66
YR_sc_in(6) 67 IO_67
YR_sc_in(7) 68 IO_68
ZR751 10K +3L
ZR752 10K 0L
ZR750 10K 0L
70 IO_70
71 IO_71
72 IO_72

YC_SDTV
YC_SDTV
YR_sc_out(9) 74 IO_74
YR_sc_out(8) 75 IO_75
YR_sc_out(7) 76 IO_76
YR_sc_out(6) 78 IO_78
YR_sc_out(5) 79 IO_79
YR_sc_out(4) 80 IO_80
YR_sc_out(3) 81 IO_81
YR_sc_out(2) 82 IO_82
YR_sc_out(1) 83 IO_83
YR_sc_out(0) 84 IO_84
CBsc_out(9) 86 IO_86
CBsc_out(8) 87 IO_87
CBsc_out(7) 88 IO_88
CBsc_out(6) 94 IO_94
CBsc_out(5) 95 IO_95
CBsc_out(4) 97 IO_97
CBsc_out(3) 98 IO_98
CBsc_out(2) 99 IO_99
CBsc_out(1) 100 IO_100
CBsc_out(0) 101 IO_101
DODD_sc 102 IO_102
DHS_sc 103 IO_103
H 105 IO_105
V 106 IO_106
ODD 107 IO_107
DFSYNCn 108 IO_108
DLSYNCn 109 IO_109
Scaler_clk_epld 110 IO_110
0L 111 IO_111
Dclk_scaler_out 113 IO_113

P_VIDSEL
P_Scaler
YC_HDTV

ZIC400 EPF10K50E

IO_114 0L
IO_115
IO_116 0L
IO_117 RTC1
IO_118 YCenc(0)
IO_119 YCenc(1)
IO_120 YCenc(2)
IO_126 YCenc(3)
IO_127 YCenc(4)
IO_128 YCenc(5)
IO_129 YCenc(6)
IO_131 YCenc(7)
IO_132 RCV2
IO_133 RCV1
IO_134 CH_CLK
IO_136 0L
IO_137 CH_VS
IO_138 CH_HS
IO_139 CH_WHT
IO_141 CH_BLK1
IO_142 CH_BLK2
IO_143 EN_TXT_CVBS
IO_144
IO_146
IO_147
IO_148
IO_149 CS_gs_gen_not
IO_151
IO_152
IO_153 CS_aux
IO_154 V_aux
IO_156 H_aux
IO_157 VP05_dec
IO_158 VP06_dec
IO_159 LCC_dec
IO_161 HREF_dec
IO_162 VREF_dec
IO_163 RTS0_dec
IO_164 RTS1_dec
IO_166 RTC0_dec
IO_167 H_el_gen
IO_168 V_el_gen
IO_169 CS_el_gen
IO_171 FID_el_gen
IO_172 CS_gs_gen
IO_173 V_gs_gen
IO_174 H_gs_gen
IO_175 EXTav
IO_184 SDav
IO_187
IO_191
IO_192 47E ZR876 H-drive
IO_193 47E ZR875 V-drive
IO_194 47E ZR873 Frame_sync
IO_195 47E ZR872 Eight_field
IO_196 47E ZR871 EXT_F
IO_198
IO_199
IO_200
IO_201 P_3LS
IO_202 3LSM
IO_203 3LSW
IO_204
IO_206
IO_207
IO_208
IO_214
IO_215
IO_217 LCTRL
IO_218 REQ_LCTRL
IO_219 NERROR
IO_220 NCONFDONE
IO_221 spare1
IO_222 spare2
IO_223 spare3
IO_225 spare4
IO_226
IO_227
IO_228
IO_229 REF27
IO_230 REF74
IO_231 EXT_H
IO_233 INT_H2
IO_234 INT_Fn
IO_235 CAM_H
IO_237 INT_H1
P_PLL

P_enc
CLK
ENC_clk_epld
YCenc
P_SyncSep

EEPROM ZIC410
AT17LV010A SERENN DATA DCLK NCASC RESET/OEN NCS RDY WP1
ZR827 1K +3L
ZR754 10K 0L
ZMP2 ZMP5
ZR889 1K8
ZR890 1K8
ZIC420 PL74HCT4053D MUXDX1 3X1 3X2
SDA
SCL
NPGM
ZR707 1K +3L
ZR708 1K +3L

EPF10K50E ZIC400
nSTATUS 60
CONF_DONE 2
DCLK 179
nCONFIG 121
INIT_DONE 26
MSEL1 123
MSEL0 124
nCE 178
nCEO 3
LOCK 73
DEV_CLRn 209
DEV_OE 213
ZR758 10K
ZR756 10K
ZR823 0E
ZR824 0E
ZC601 220u 0L

DATA0 180
IO_DATA1 181
IO_DATA2 182 NOK
IO_DATA3 183 Burstlock
IO_DATA4 185 synclock
IO_DATA5 186 extrefavail
IO_DATA6 188
IO_DATA7 190
CLKUSR 11
RDYnBUSY 23 CONFIG_1
nRS 236 CONFIG_2
nWS 238 CONFIG_3
TCK 1 TCK
TDO 4 TDO_EPLD
TMS 58 TMS
TRST 59 NTRST
TDI 177 TDI

MB
Watchdog
BS
MB_2V5EPLD

ZIC430 MAX823TEUK WDI RESET MR
Watchdog
ZR852 0E
ZR755 10K 0L
ZR739 100K +3L
ZMP6
ZD13 BAS28
ZD13 BAS28
ZMP1 0L
master_reset_not
NPGM
SDA_M SCL_M

ZR687 Scaler_reset_n
ZR687 ENC_reset_n
ZR689 DEC_reset_n
ZR688 CH_reset_n

CONTROL
ZR757 10K +3L
ZR760 10K +3L
ZR759 10K +3L
ZR779 0L
ZR781 0L
ZR780 0L
CONFIG_1
CONFIG_2
CONFIG_3

Block: EPLD 1/1

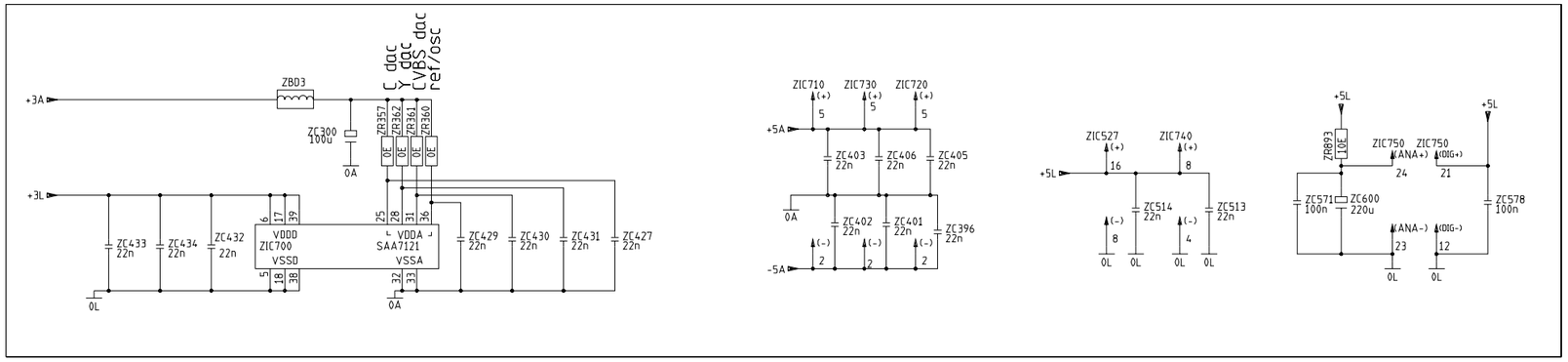
COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED

ASS.NO:	3922 406 88730
ASS.NAME:	Sync Encoder HD BS
STATUS:	08
PCB.NO:	3922 411 88732
CIRCUIT DIAGRAM	CURR. DATE: 2002-05-27
	PREV. DATE: 2001-02-05
N. vd Valk	ORG. DATE: 2000-08-15
PROPERTY OF: 11	SHEET 130 - 2

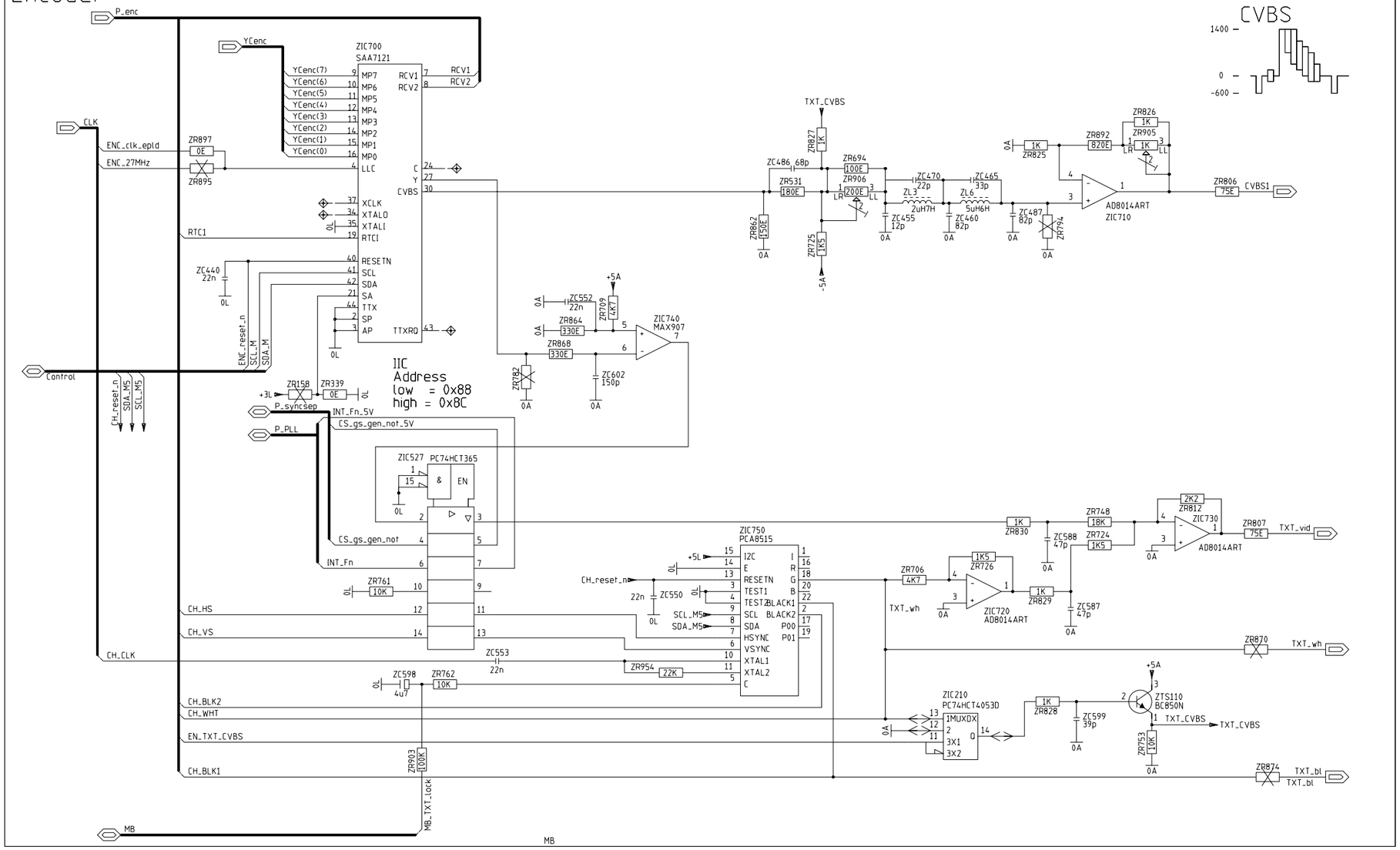
THOMSON MULTIMEDIA BROADCAST SOLUTIONS BREDA - THE NETHERLANDS

THOMSON MULTIMEDIA BROADCAST SOLUTIONS

POWER encoder



Encoder



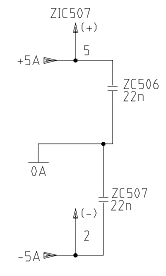
Block: Encoder 1/1

COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED	
ASS.NO:	3922 406 88730
ASS.NAME:	Sync Encoder HD BS
STATUS:	08
PCB.NO:	3922 411 88732
CIRCUIT DIAGRAM	CURR. DATE: 2002-05-27
	PREV. DATE: 2001-02-05
N. vd Valk	ORG. DATE: 2000-08-15
PROPERTY OF:	11 SHEET 130 - 3

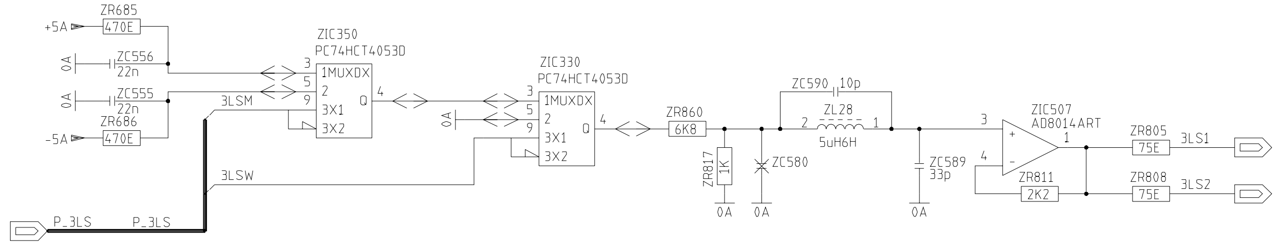
THOMSON MULTIMEDIA BROADCAST SOLUTIONS
BREDA - THE NETHERLANDS

THOMSON MULTIMEDIA BROADCAST SOLUTIONS

POWER



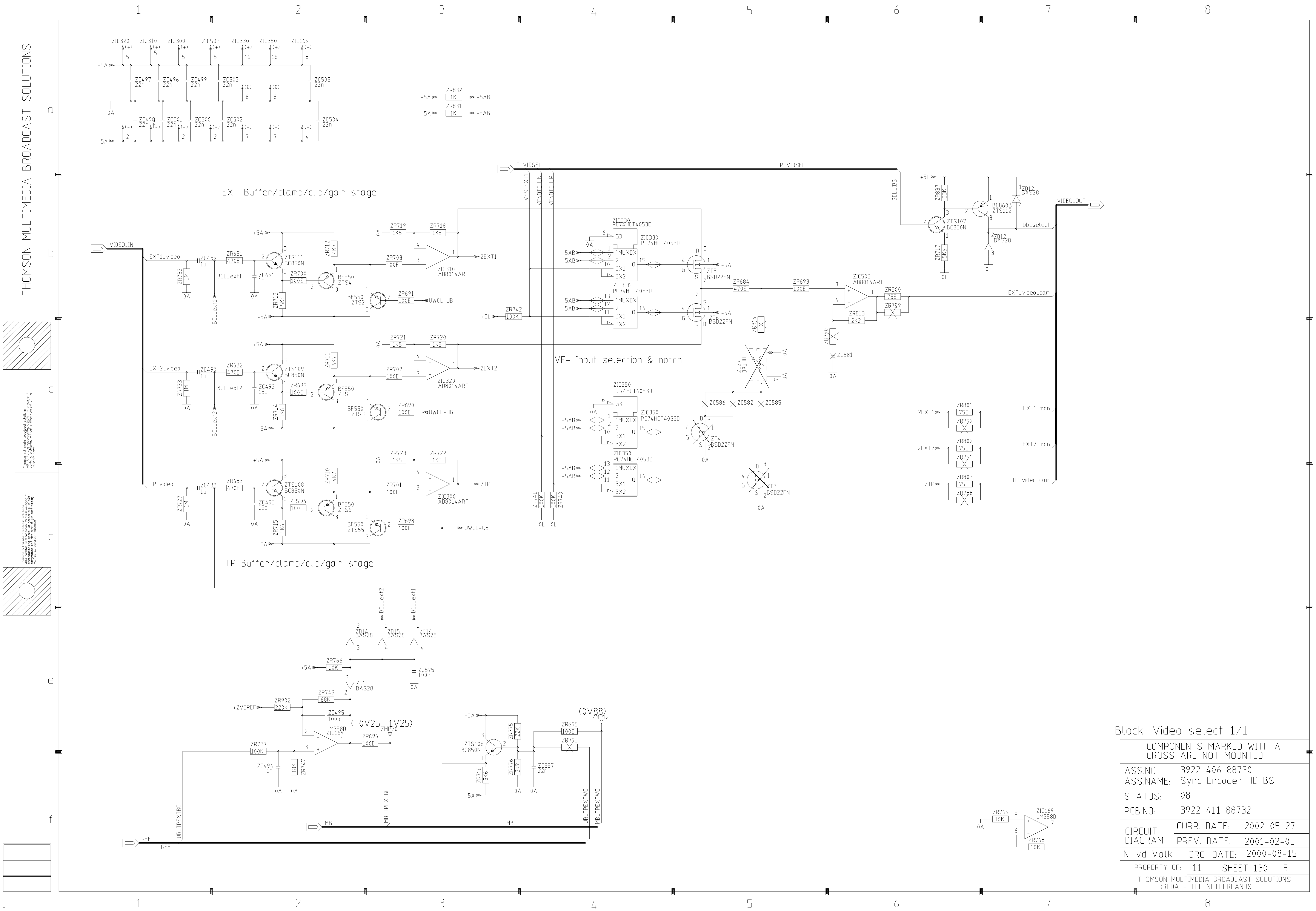
Three Level Sync generator

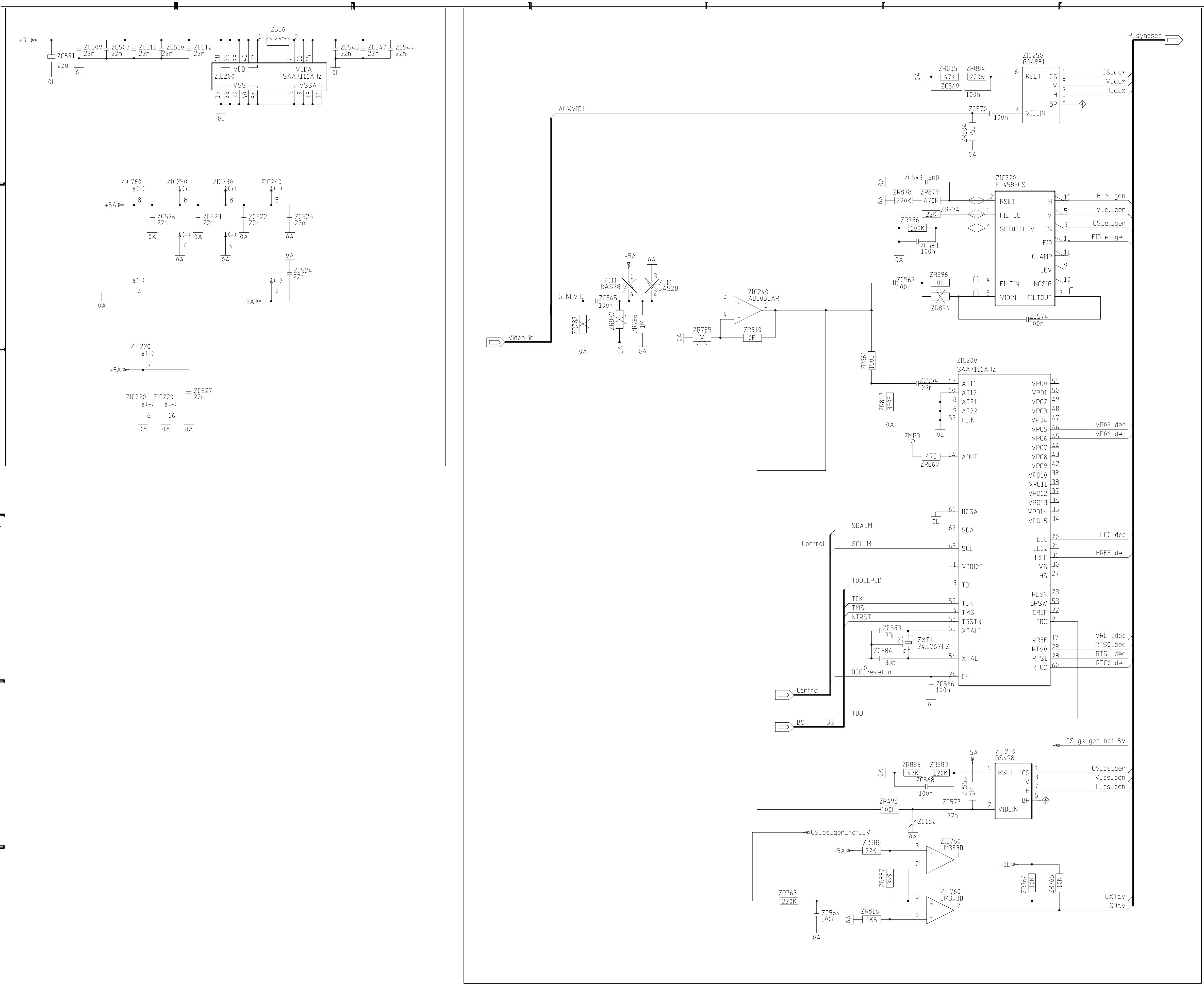


Block: Three level sync 1/1

COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED	
ASS.NO:	3922 406 88730
ASS.NAME:	Sync Encoder HD BS
STATUS:	08
PCB.NO:	3922 411 88732
CIRCUIT DIAGRAM	CURR. DATE: 2002-05-27
	PREV. DATE: 2001-02-05
N. vd Valk	ORG. DATE: 2000-08-15
PROPERTY OF:	11 — SHEET 130 - 4

THOMSON MULTIMEDIA BROADCAST SOLUTIONS
BREDA - THE NETHERLANDS


THOMSON MULTIMEDIA BROADCAST SOLUTIONS
EXT Buffer/clamp/clip/gain stage
VF- Input selection & notch
TP Buffer/clamp/clip/gain stage
VIDEO_IN
EXT1_video
EXT2_video
TP_video
P_VIDSEL
VIDEO_OUT
bb_select
SEL_IBB
EXT_video_com
EXT1_mon
EXT2_mon
TP_video_com
UWCL-UB
BCL_ext1
BCL_ext2
REF
MB
UR_TPEXTBC
MB_TPEXTBC
UR_TPEXTWC
MB_TPEXTWC
(-0V25 -1V25)
(0V88)
Block: Video select 1/1
COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED
ASS.NO: 3922 406 88730
ASS.NAME: Sync Encoder HD BS
STATUS: 08
PCB.NO: 3922 411 88732
CIRCUIT DIAGRAM
CURR. DATE: 2002-05-27
PREV. DATE: 2001-02-05
N. vd Valk
ORG. DATE: 2000-08-15
PROPERTY OF: 11
SHEET 130 - 5
THOMSON MULTIMEDIA BROADCAST SOLUTIONS
BREDA - THE NETHERLANDS



Block: Sync separator 1/1

COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED

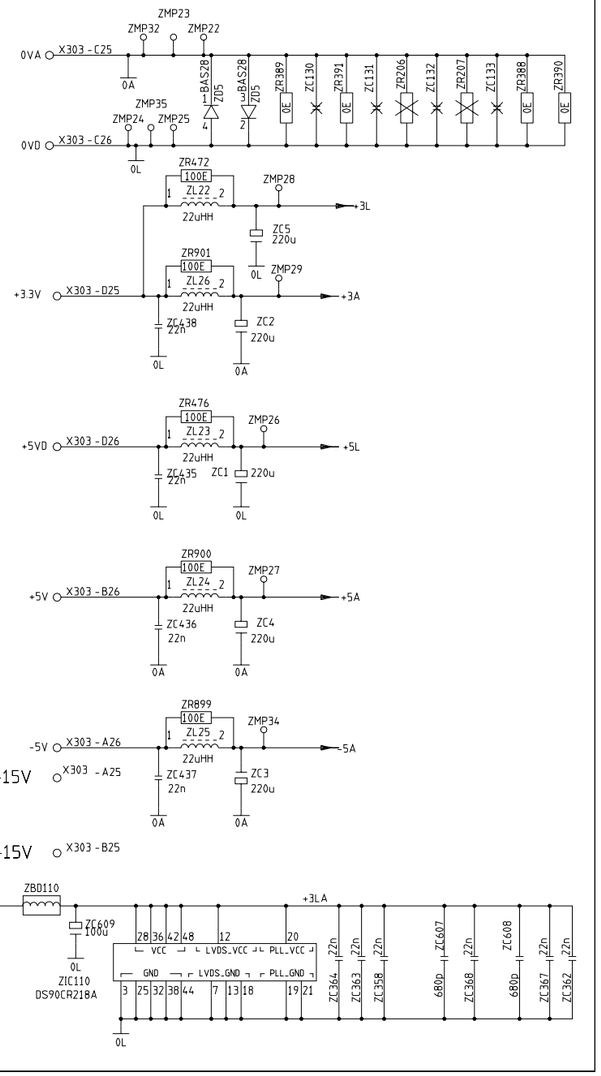
ASS.NO:	3922 406 88730
ASS.NAME:	Sync Encoder HD BS
STATUS:	08
PCB.NO:	3922 411 88732
CIRCUIT DIAGRAM	CURR. DATE: 2002-05-27
	PREV. DATE: 2001-02-05
N. vd Valk	ORG. DATE: 2000-08-15

PROPERTY OF: @HierPageEDT130 - @HierPageNumber

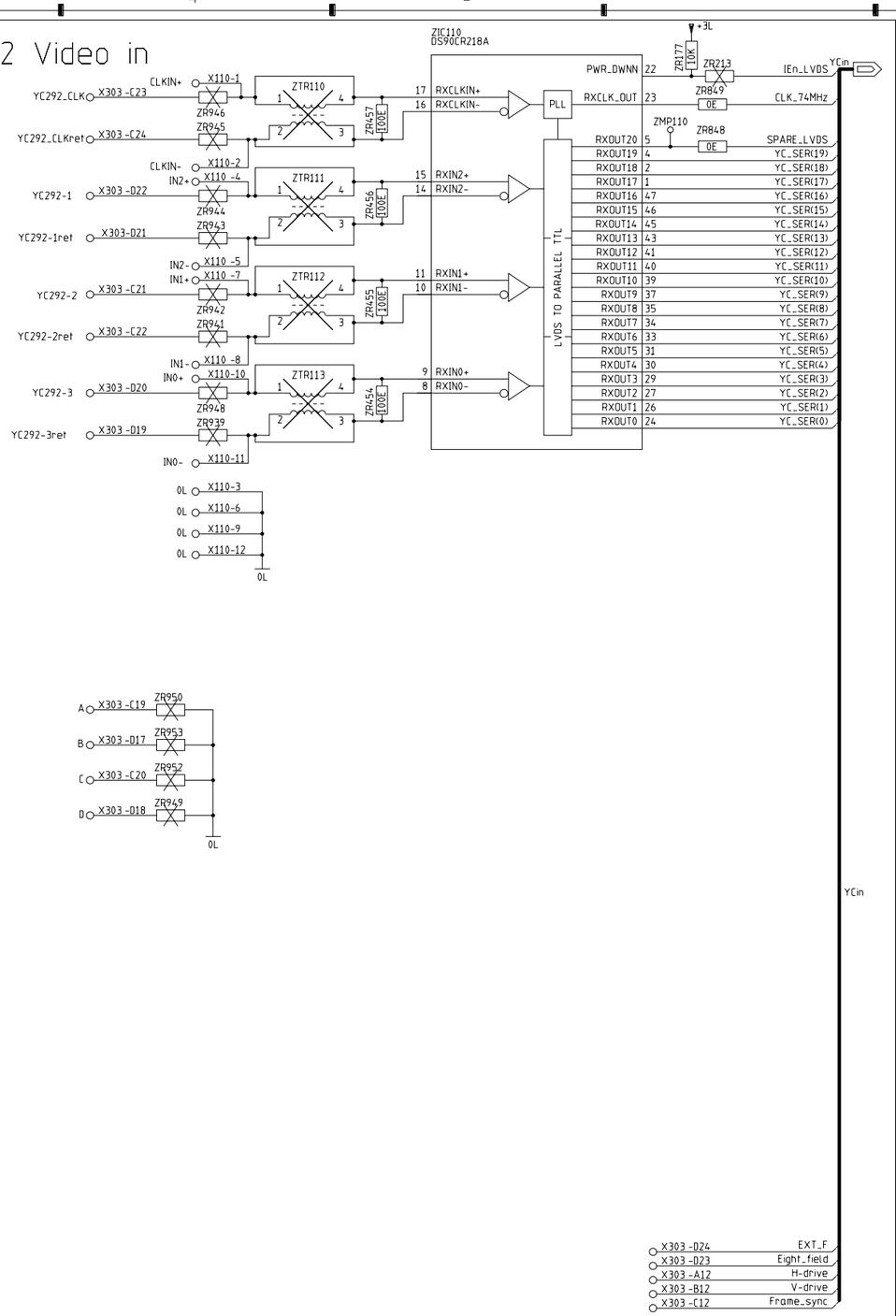
THOMSON MULTIMEDIA BROADCAST SOLUTIONS
BREDA - THE NETHERLANDS

THOMSON MULTIMEDIA BROADCAST SOLUTIONS

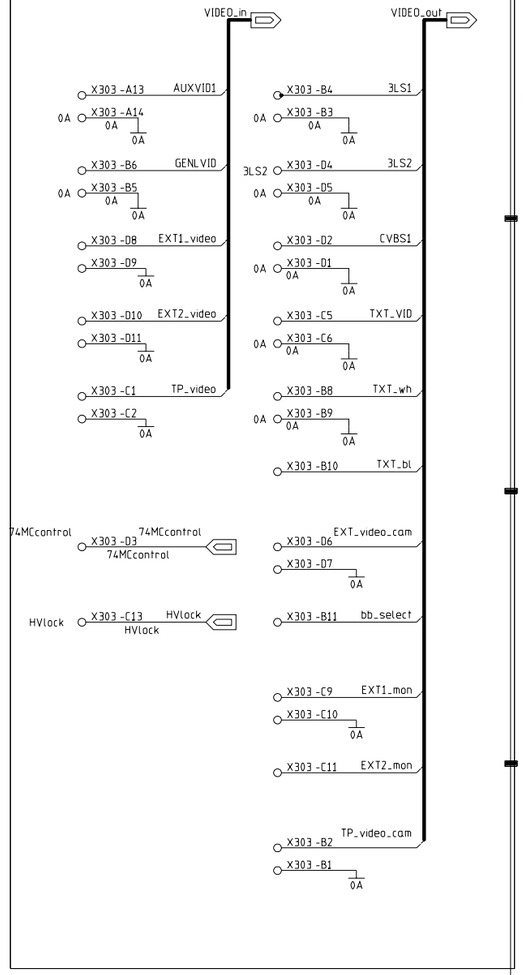
Power Supplies

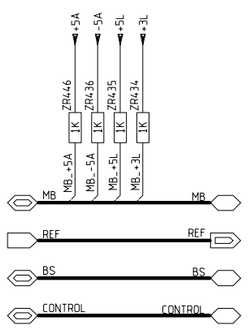


292 Video in



ANALOG IN/OUT

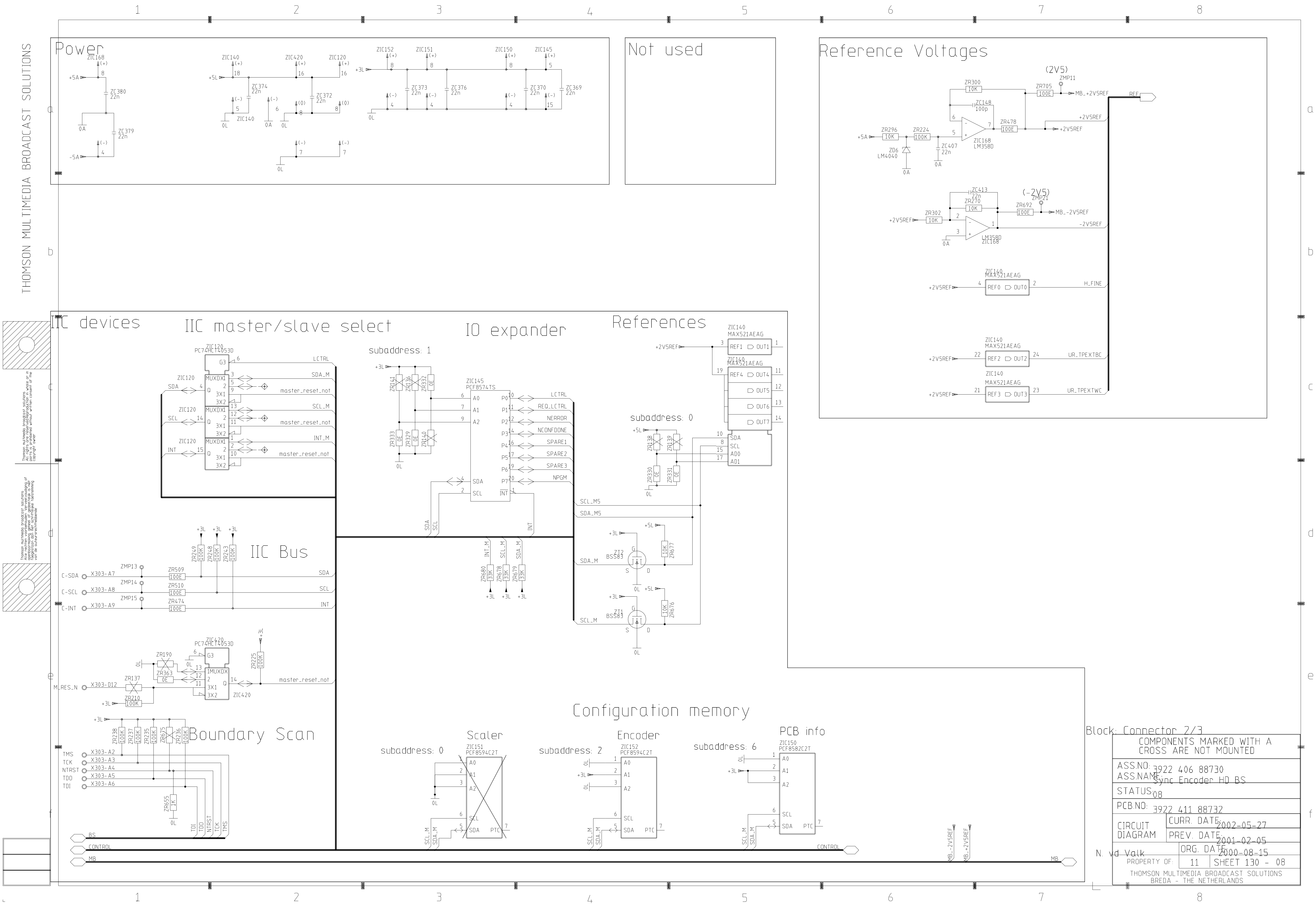




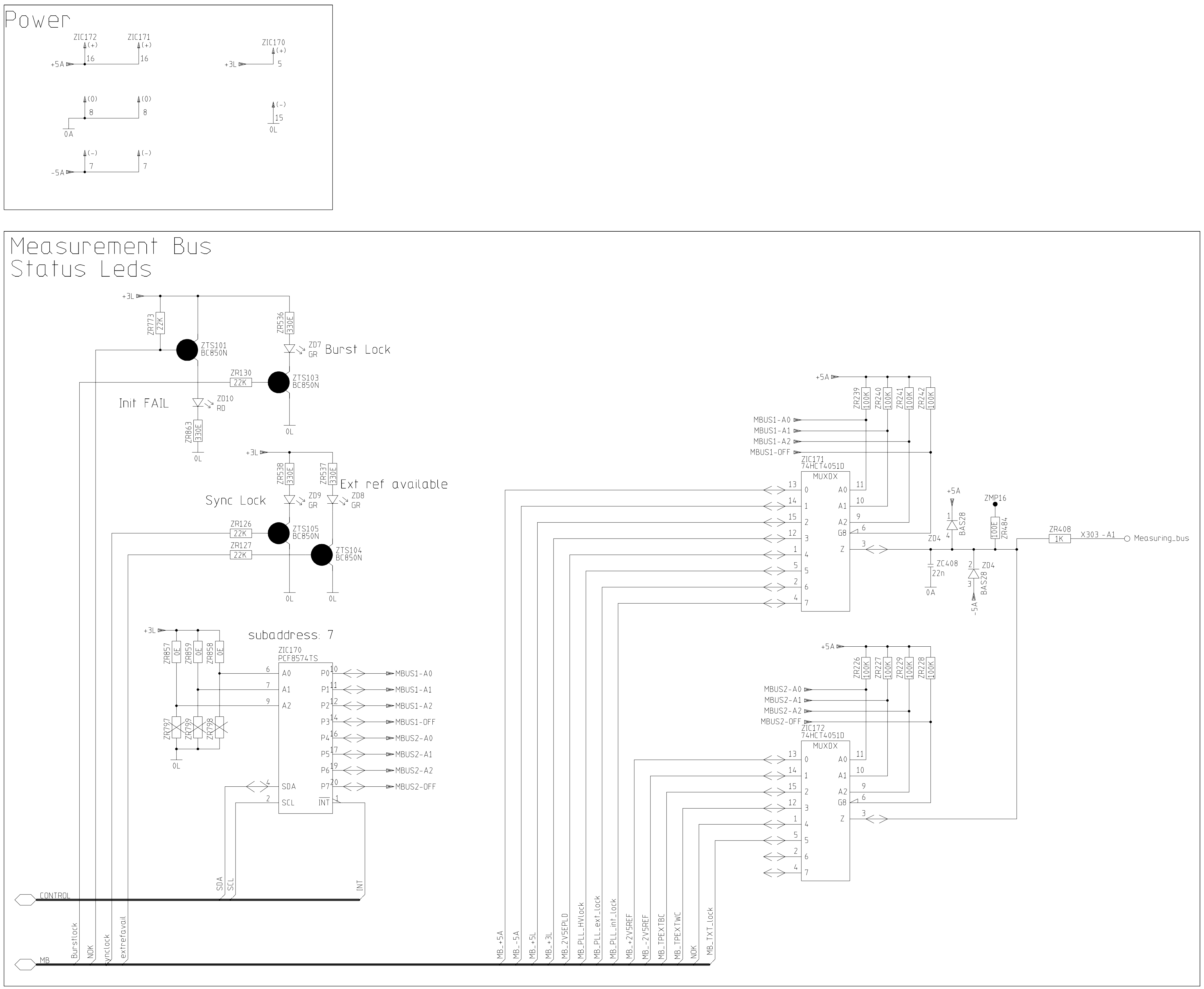
Not Used

Block: Connector 1/3

COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED		
ASS.NO: 3922 406 88730 ASS.NAME: Sync Encoder HD BS		
STATUS: 08		
PCB.NO: 3922 411 88732		
CIRCUIT DIAGRAM	CURR. DATE: 2002-05-27	
	PREV. DATE: 2001-02-05	
N. vd Valk	ORG. DATE: 2000-08-15	
PROPERTY OF: 11	SHEET 130 - 7	
THOMSON MULTIMEDIA BROADCAST SOLUTIONS BREDA - THE NETHERLANDS		


THOMSON MULTIMEDIA BROADCAST SOLUTIONS
Power
Not used
Reference Voltages
(2V5)
(-2V5)
IIC devices
IIC master/slave select
IO expander
References
subaddress: 1
subaddress: 0
IIC Bus
Boundary Scan
Configuration memory
Scaler
Encoder
PCB info
subaddress: 0
subaddress: 2
subaddress: 6
Block: Connector 2/3
COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED
ASS.NO: 3922 406 88730
ASS.NAME: Sync Encoder HD BS
STATUS: 08
PCB.NO: 3922 411 88732
CIRCUIT DIAGRAM
CURR. DATE 2002-05-27
PREV. DATE 2001-02-05
ORG. DATE 2000-08-15
N. vd Valk
PROPERTY OF: 11 SHEET 130 - 08
THOMSON MULTIMEDIA BROADCAST SOLUTIONS
BREDA - THE NETHERLANDS

THOMSON MULTIMEDIA BROADCAST SOLUTIONS

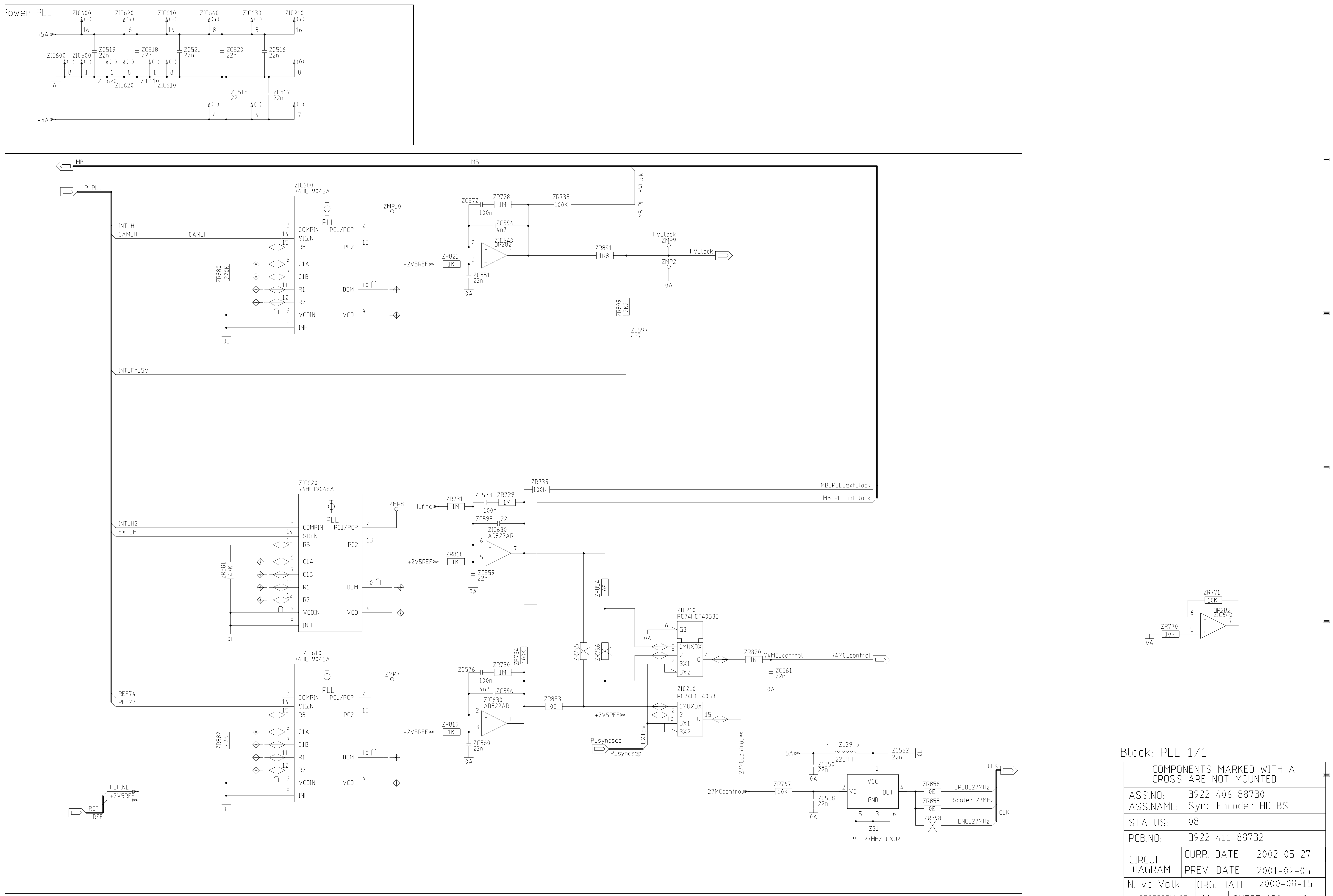


Block: Connector 3/3

COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED	
ASS.NO:	3922 406 88730
ASS.NAME:	Sync Encoder HD BS
STATUS:	08
PCB.NO:	3922 411 88732
CIRCUIT DIAGRAM	CURR. DATE: 2002-05-27
	PREV. DATE: 2001-02-05
N. vd Valk	ORG. DATE: 2000-08-15
PROPERTY OF: 11	SHEET 130 - 9

THOMSON MULTIMEDIA BROADCAST SOLUTIONS
BREDA - THE NETHERLANDS

THOMSON MULTIMEDIA BROADCAST SOLUTIONS

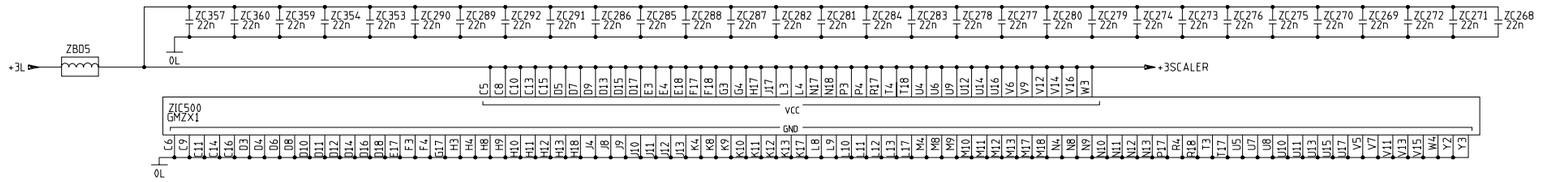


Block: PLL 1/1

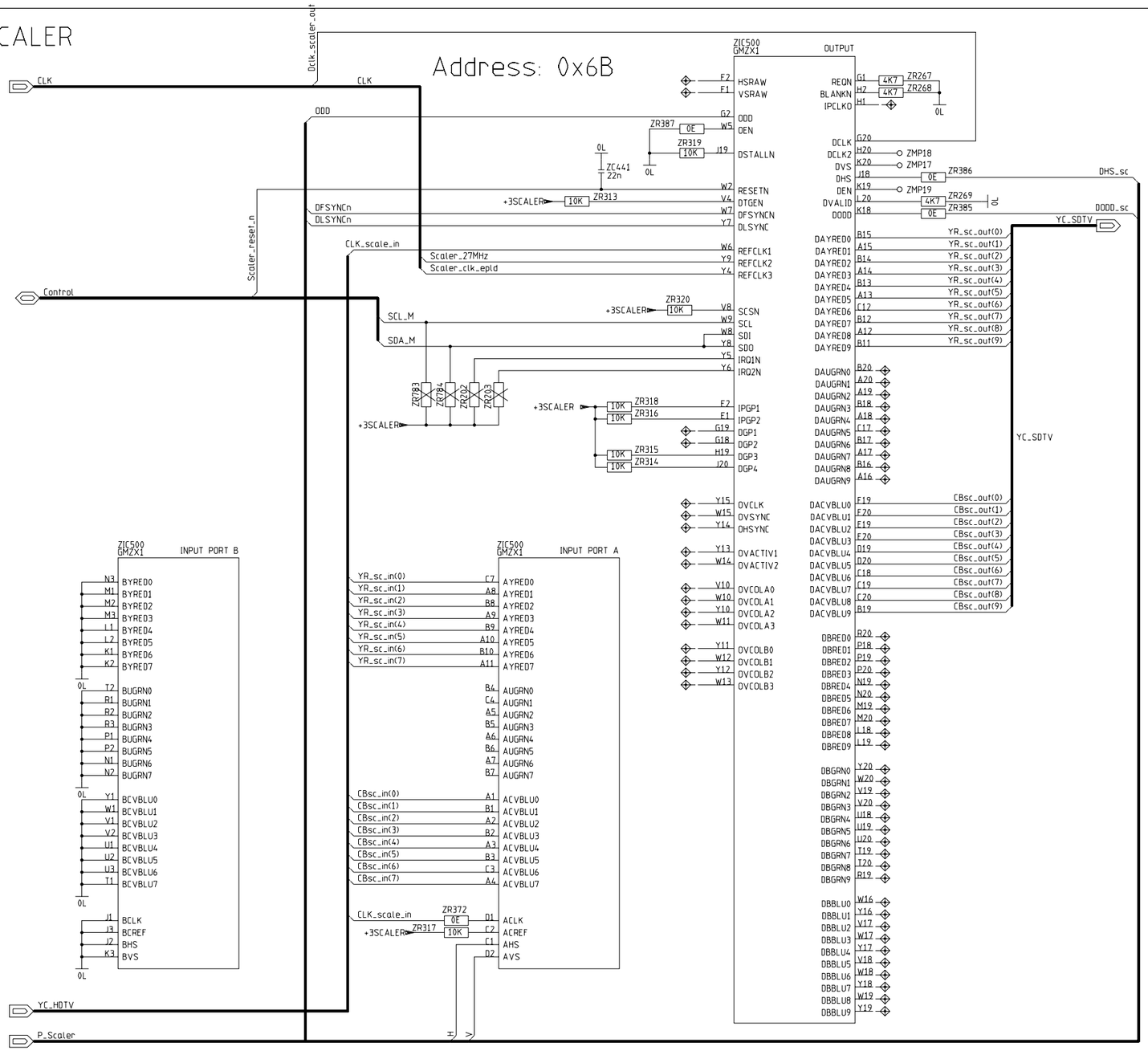
COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED	
ASS.NO:	3922 406 88730
ASS.NAME:	Sync Encoder HD BS
STATUS:	08
PCB.NO:	3922 411 88732
CIRCUIT DIAGRAM	CURR. DATE: 2002-05-27
	PREV. DATE: 2001-02-05
N. vd Valk	ORG. DATE: 2000-08-15
PROPERTY OF: 11	SHEET 130 - 10
THOMSON MULTIMEDIA BROADCAST SOLUTIONS BREDA - THE NETHERLANDS	

THOMSON MULTIMEDIA BROADCAST SOLUTIONS

SCALER Supply



SCALER



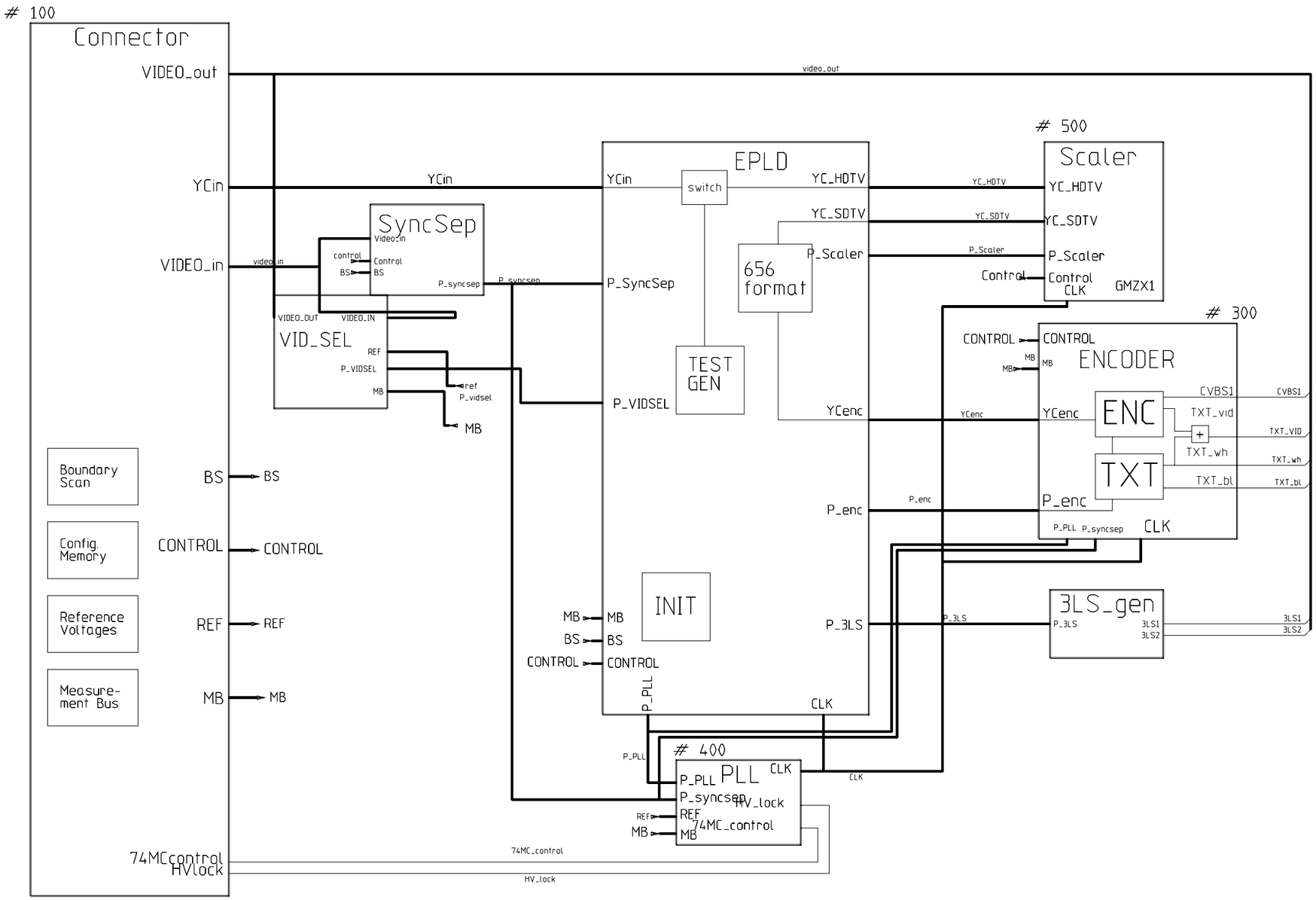
Block: Scaler 1/1

COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED		
ASS.NO:	3922 406 88730	
ASS.NAME:	Sync Encoder HD BS	
STATUS:	08	
PCB.NO:	3922 411 88732	
CIRCUIT DIAGRAM	CURR. DATE:	2002-05-27
	PREV. DATE:	2001-02-05
N. vd Valk	ORG. DATE:	2000-08-15
PROPERTY OF:	111	SHEET 130 - 11

THOMSON MULTIMEDIA BROADCAST SOLUTIONS
BREDA - THE NETHERLANDS

SYNC Encoder HD BS

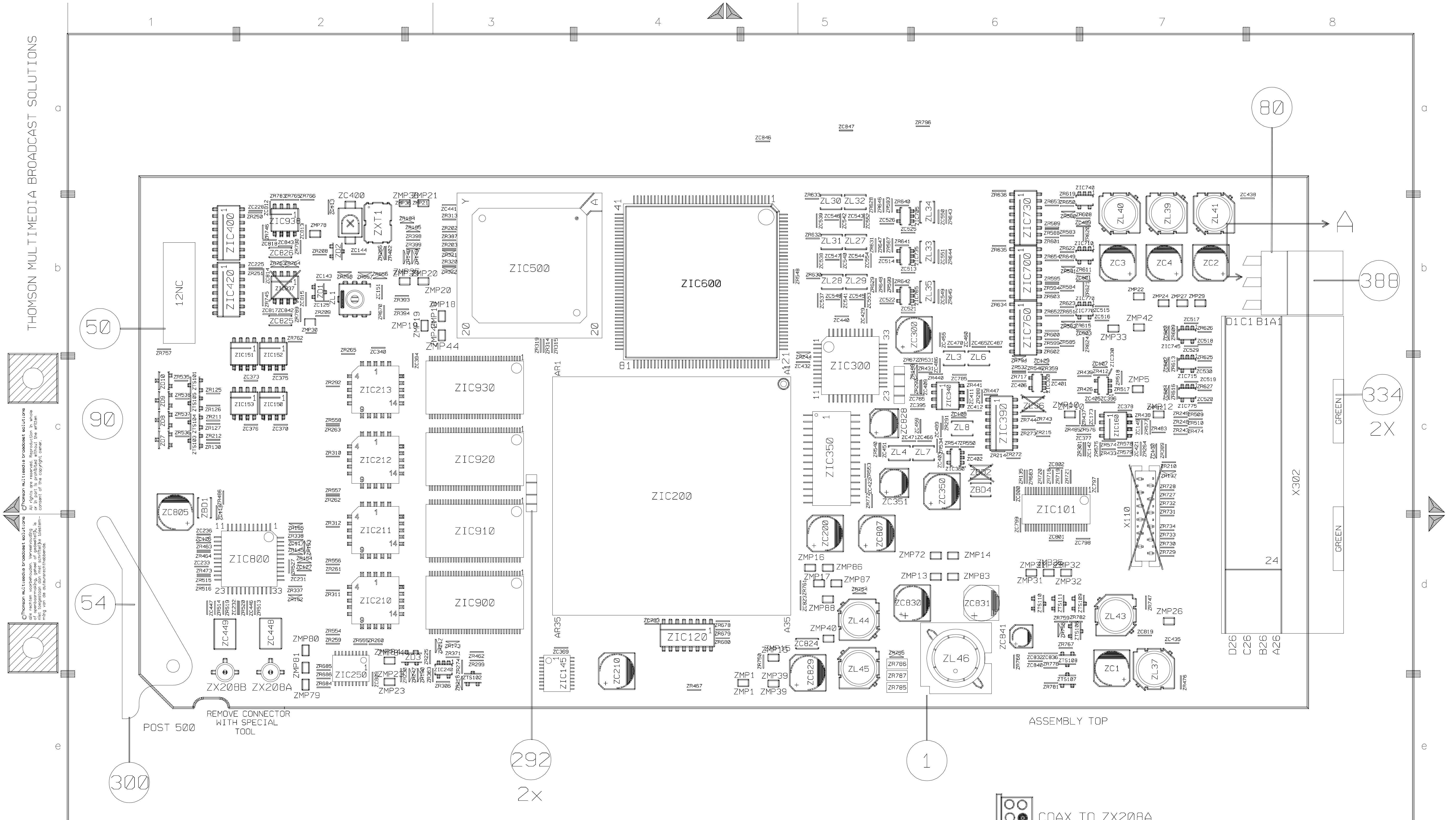
THOMSON MULTIMEDIA BROADCAST SOLUTIONS

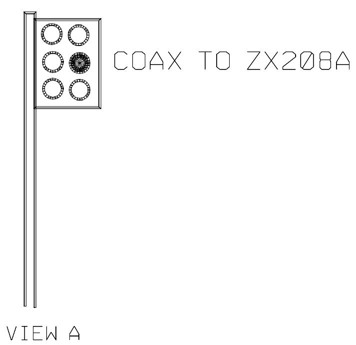


BS = Boundary scan Bus
MS = Measuring bus
REF = References Bus

Total: 11 pages

COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED		
ASS.NO: 3922 406 88730 ASS.NAME: Sync Encoder HD BS		
STATUS: 08		
PCB.NO: 3922 411 88732		
CIRCUIT DIAGRAM	CURR. DATE: 2002-05-27	
	PREV. DATE: 2001-02-05	
N. vd Valk	ORG. DATE: 2000-08-15	
PROPERTY OF:	11	SHEET 130 - 1
THOMSON MULTIMEDIA BROADCAST SOLUTIONS BREDA - THE NETHERLANDS		





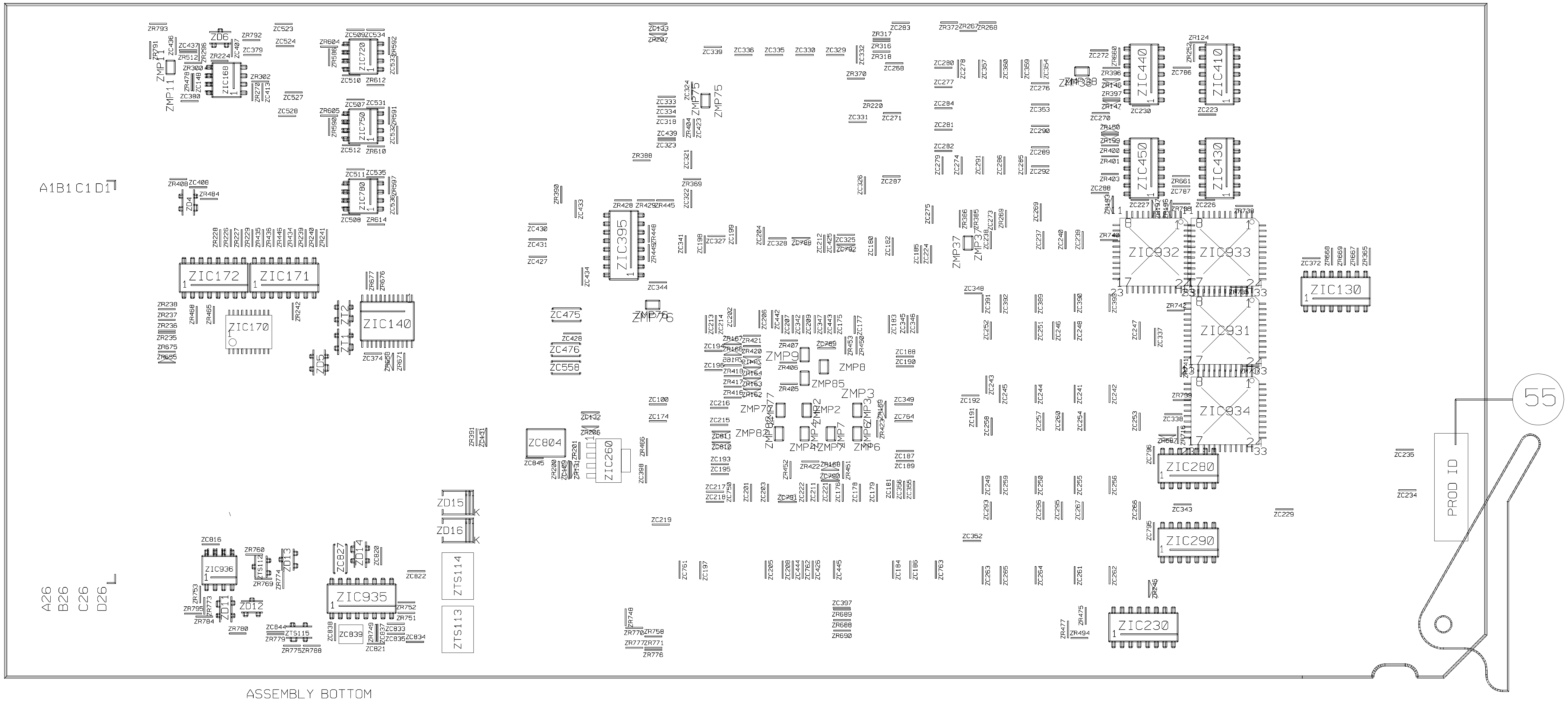
STATUS : 08

ASS. 12NC: 3922 406 88720
ASS. NAME: SDTV OUTPUT HD BS
PCB 12NC.: 3922 411 88723

ASSEMBLY TOP	CURR. DATE : 02-04-15
SCALE 1.5:1	PREV. DATE : 01-12-05
J. ROTTE	ORG. DATE : 00-07-30
PROPERTY OF :	SHEET: 110-1

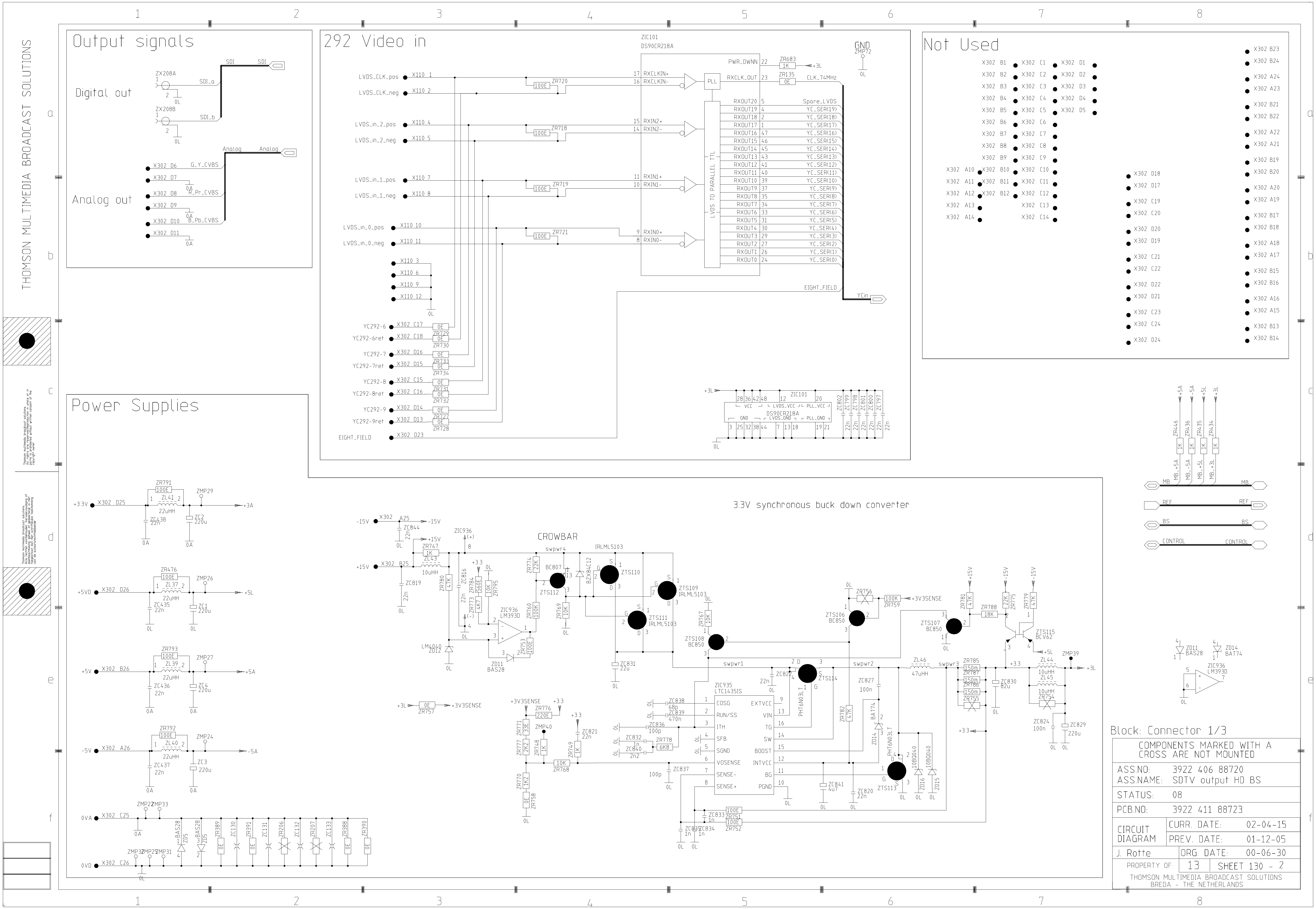
THOMSON MULTIMEDIA BROADCAST SOLUTIONS
– BREDA – THE NETHERLANDS

THOMSON MULTIMEDIA BROADCAST SOLUTIONS



ASSEMBLY BOTTOM

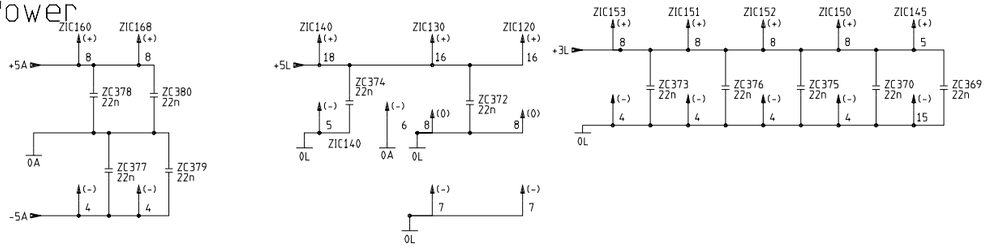
STATUS : 08	
ASS. 12NC:3922 406 88720	
ASS. NAME:SDTV OUTPUT HD BS	
PCB 12NC.: 3922 411 88723	
ASSEMBLY BOTTOM	CURR. DATE : 02-04-15
SCALE 1.5:1	PREV. DATE : 01-12-05
J. ROTTE	ORG. DATE : 00-07-30
PROPERTY OF :	SHEET:110-2
THOMSON MULTIMEDIA BROADCAST SOLUTIONS - BREDA - THE NETHERLANDS	



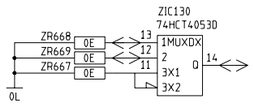
THOMSON MULTIMEDIA BROADCAST SOLUTIONS
Output signals
Digital out
Analog out
292 Video in
ZIC101
DS90CR218A
LVDS TO PARALLEL TTL
Not Used
Power Supplies
CROWBAR
3.3V synchronous buck down converter
Block: Connector 1/3
COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED
ASS.NO: 3922 406 88720
ASS.NAME: SDTV output HD BS
STATUS: 08
PCB.NO: 3922 411 88723
CIRCUIT DIAGRAM
CURR. DATE: 02-04-15
PREV. DATE: 01-12-05
J. Rotte
ORG. DATE: 00-06-30
PROPERTY OF: 13
SHEET 130 - 2
THOMSON MULTIMEDIA BROADCAST SOLUTIONS
BREDA - THE NETHERLANDS

THOMSON MULTIMEDIA BROADCAST SOLUTIONS

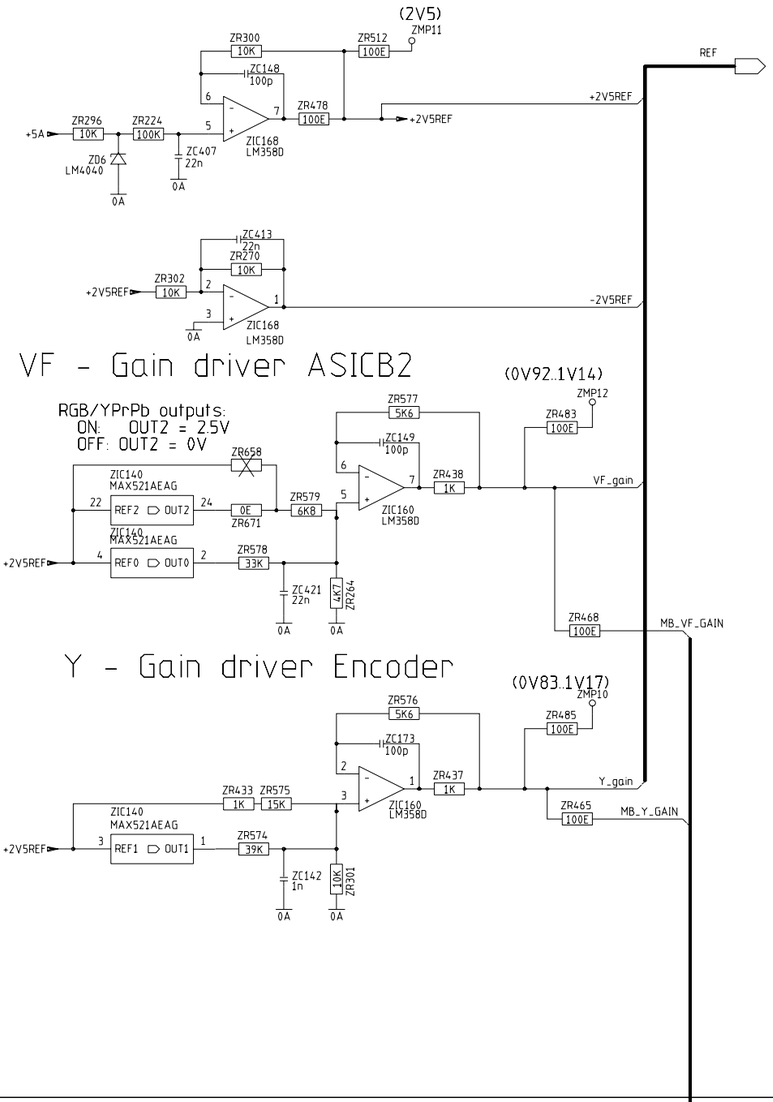
Power



Not used

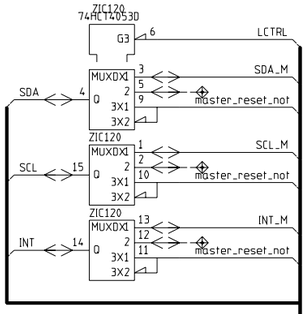


Reference Voltages

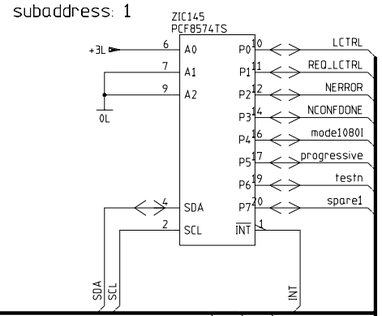


IIC devices

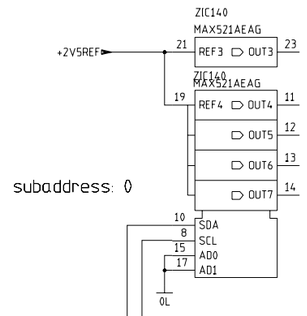
IIC master/slave select



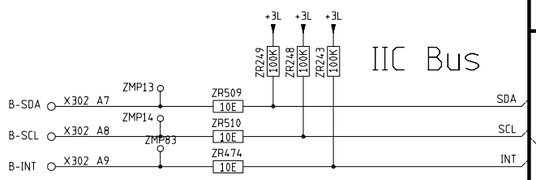
IO expander



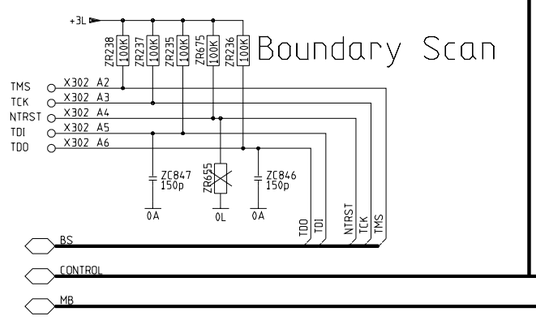
References

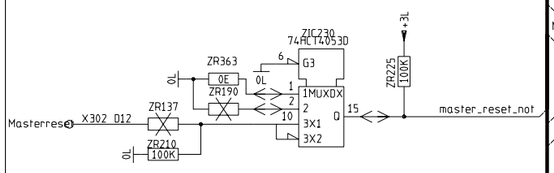


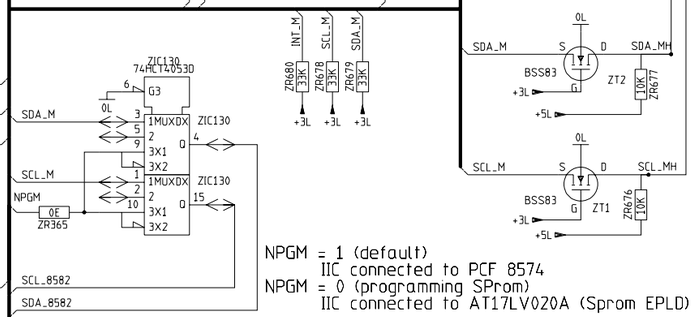
IIC Bus



Boundary Scan

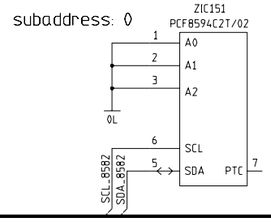




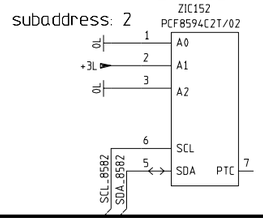


Configuration memory

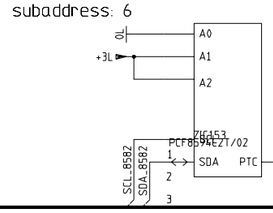
Scaler



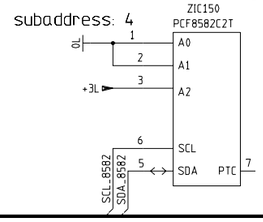
Encoder



ASIC_B2



PCB info



CONTROL
MB

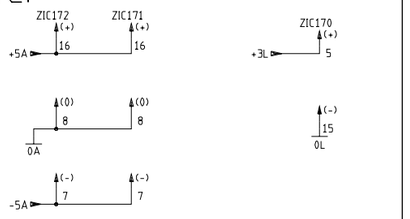
Block: Connector 2/3

COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED		
ASS.NO:	3922 406 88720	
ASS.NAME:	SDTV output HD BS	
STATUS:	08	
PCB.NO:	3922 411 88723	
CIRCUIT DIAGRAM	CURR. DATE:	02-04-15
	PREV. DATE:	01-12-05
J. Rotte	ORG. DATE:	00-06-30
PROPERTY OF:	13	SHEET 130 - 3

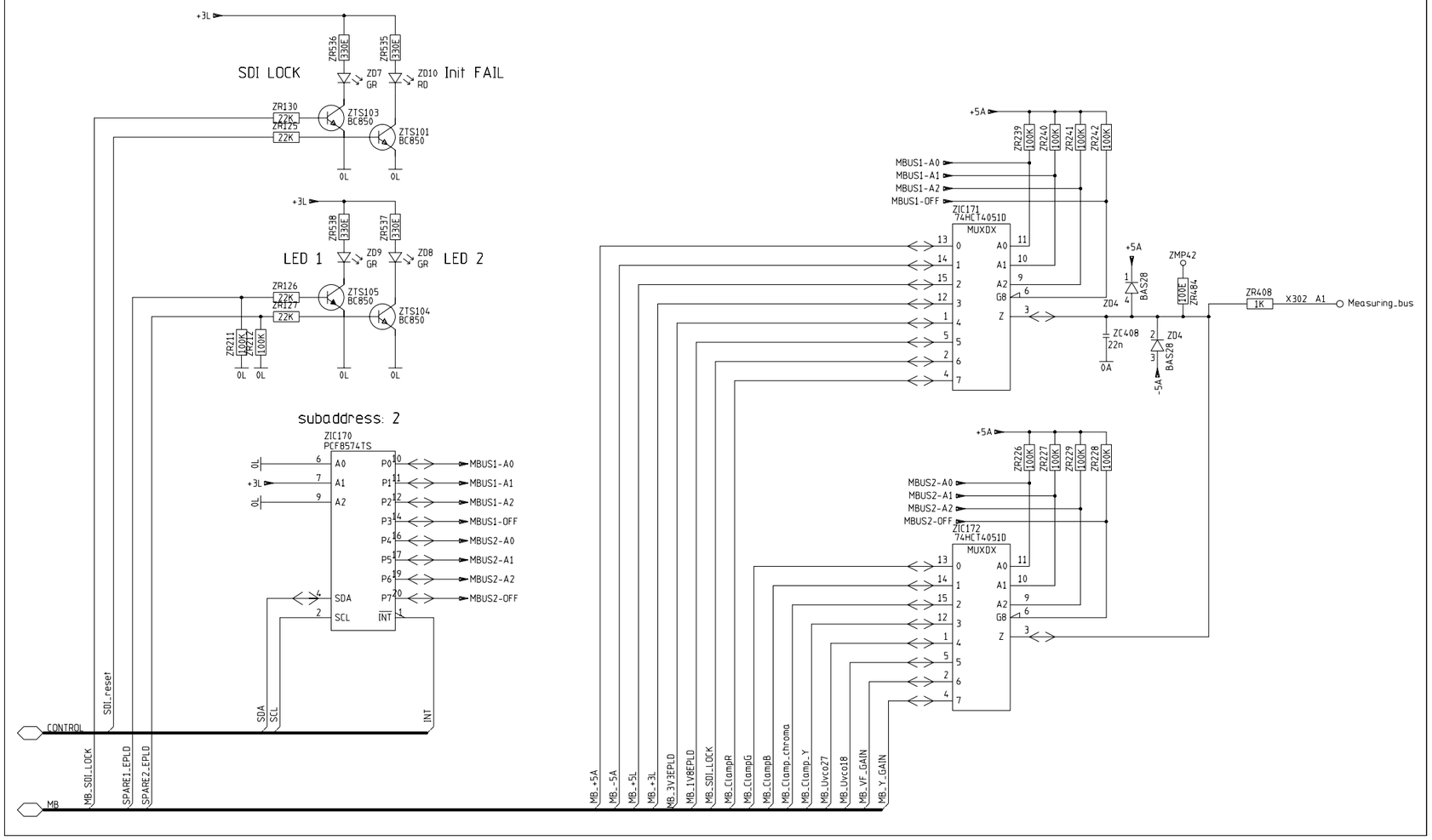
THOMSON MULTIMEDIA BROADCAST SOLUTIONS
BREDA - THE NETHERLANDS

THOMSON MULTIMEDIA BROADCAST SOLUTIONS

Power



Measurement Bus
Status Leds

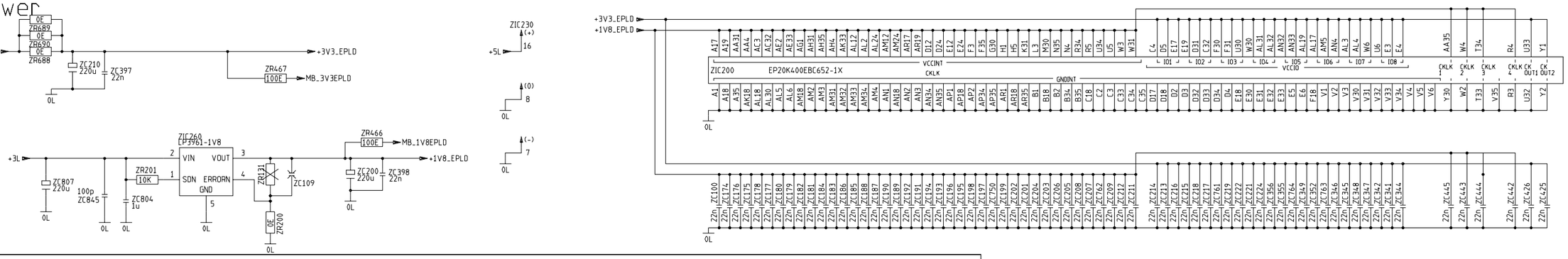


Block: Connector 3/3

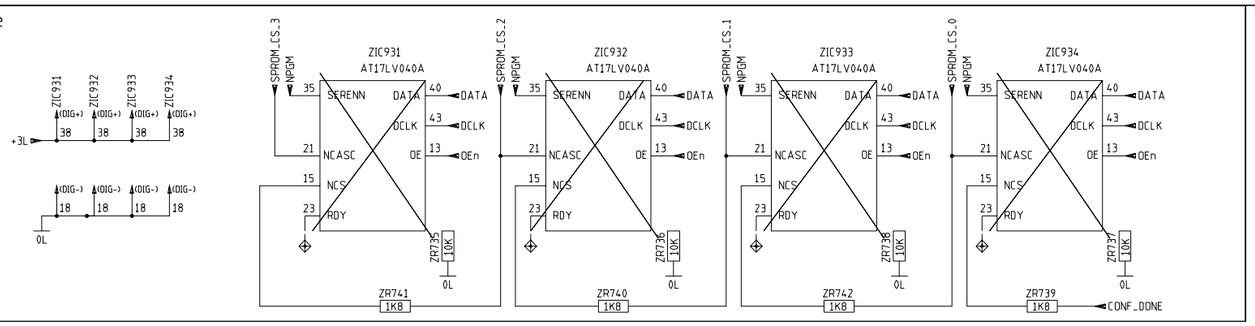
COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED		
ASS.NO: 3922 406 88720 ASS.NAME: SDTV output HD BS		
STATUS: 08		
PCB.NO: 3922 411 88723		
CIRCUIT DIAGRAM	CURR. DATE:	02-04-15
	PREV. DATE:	01-12-05
J. Rotte	ORG. DATE:	00-06-30
PROPERTY OF: 13	SHEET 130 - 4	
THOMSON MULTIMEDIA BROADCAST SOLUTIONS BREDA - THE NETHERLANDS		

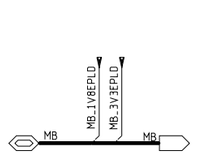
THOMSON MULTIMEDIA BROADCAST SOLUTIONS

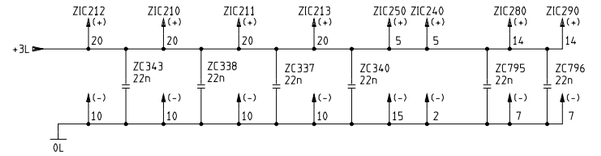
Power



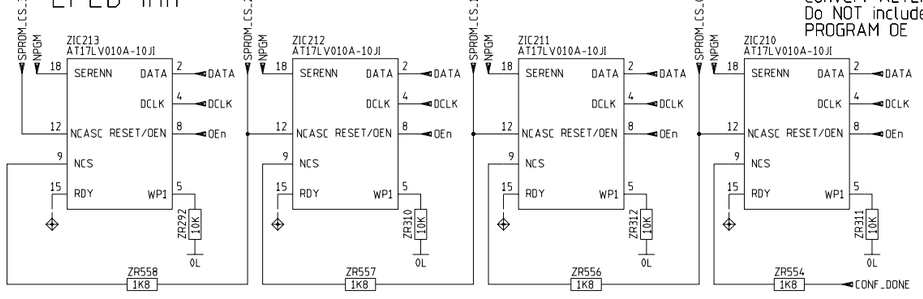
Spare



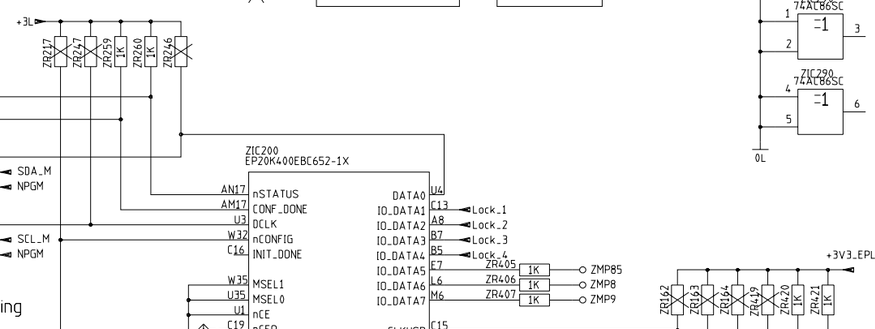




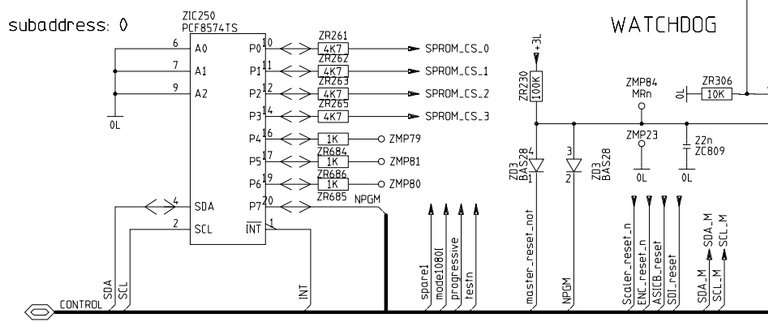
EPLD init



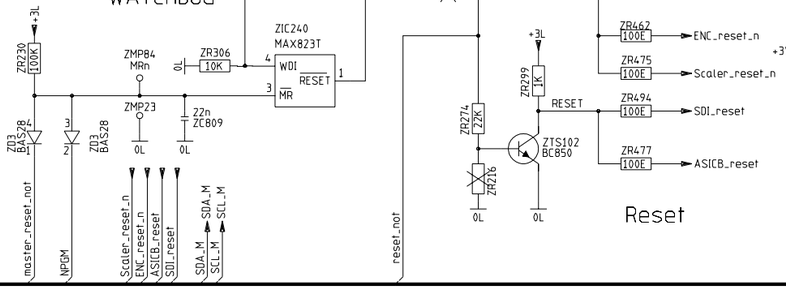
Convert ALTERA RBF file to 4x HEX.
Do NOT include VERSIONINFO in SPROM 0..2
PROGRAM OE



IO expander



WATCHDOG



Reset

Boundary Scan
Byteblaster
connection.

Block: EPLD 1/2

COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED		
ASS.NO:	3922 406 88720	
ASS.NAME:	SDTV output HD BS	
STATUS:	08	
PCB.NO:	3922 411 88723	
CIRCUIT DIAGRAM	CURR. DATE:	02-04-15
	PREV. DATE:	01-12-05
J. Rotte	ORG. DATE:	00-06-30
PROPERTY OF:	13	SHEET 130 - 5

THOMSON MULTIMEDIA BROADCAST SOLUTIONS
BREDA - THE NETHERLANDS

THOMSON MULTIMEDIA BROADCAST SOLUTIONS

Block: EPLD 2/2

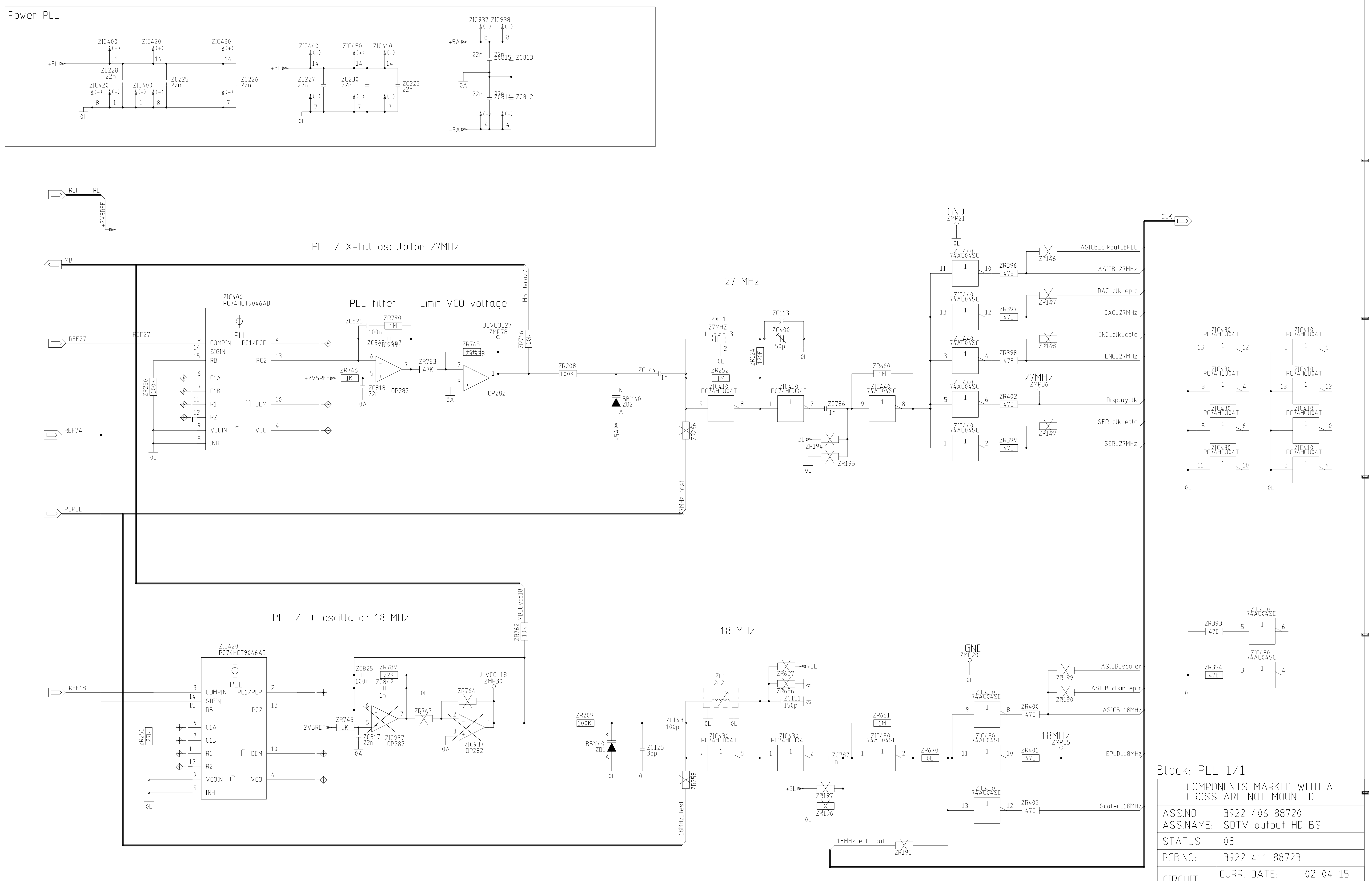
COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED

ASS.NO:	3922 406 88720
ASS.NAME:	SDTV output HD BS
STATUS:	08
PCB.NO:	3922 411 88723
CIRCUIT DIAGRAM	CURR. DATE: 02-04-15
	PREV. DATE: 01-12-05
J. Rotte	ORG. DATE: 00-06-30
PROPERTY OF: 13	SHEET 130 - 6

THOMSON MULTIMEDIA BROADCAST SOLUTIONS
BREDA - THE NETHERLANDS

NM capacitors to make ballgridpins available

THOMSON MULTIMEDIA BROADCAST SOLUTIONS



Block: PLL 1/1

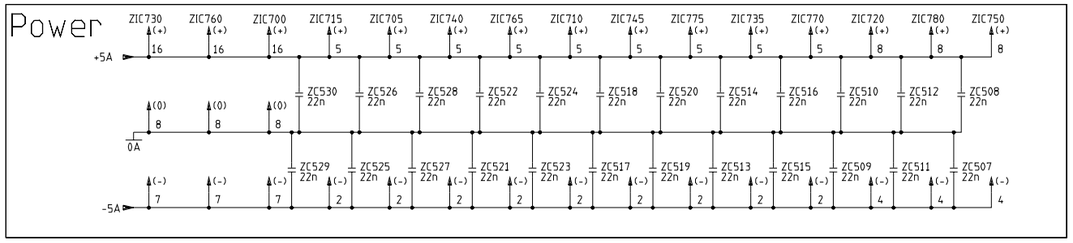
COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED

ASS.NO:	3922 406 88720
ASS.NAME:	SDTV output HD BS
STATUS:	08
PCB.NO:	3922 411 88723
CIRCUIT DIAGRAM	CURR. DATE: 02-04-15
	PREV. DATE: 01-12-05
J. Rotte	ORG. DATE: 00-06-30
PROPERTY OF:	13 SHEET 130 - 7

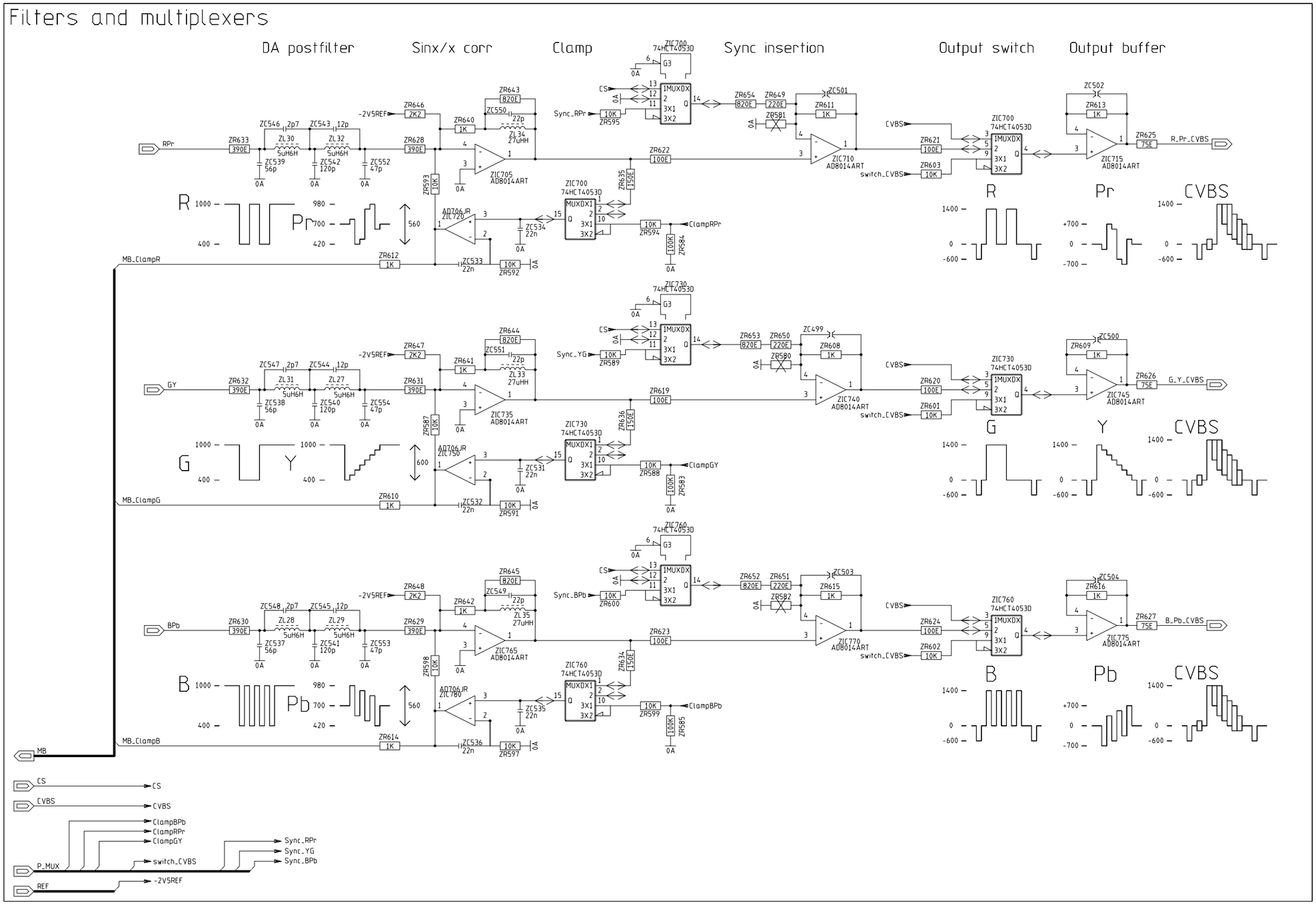
THOMSON MULTIMEDIA BROADCAST SOLUTIONS
BREDA - THE NETHERLANDS

THOMSON MULTIMEDIA BROADCAST SOLUTIONS

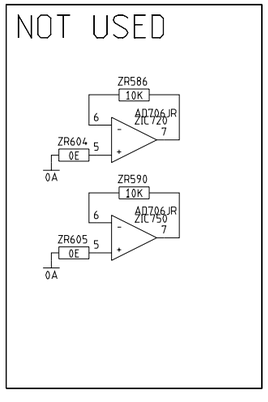
Power



Filters and multiplexers



NOT USED

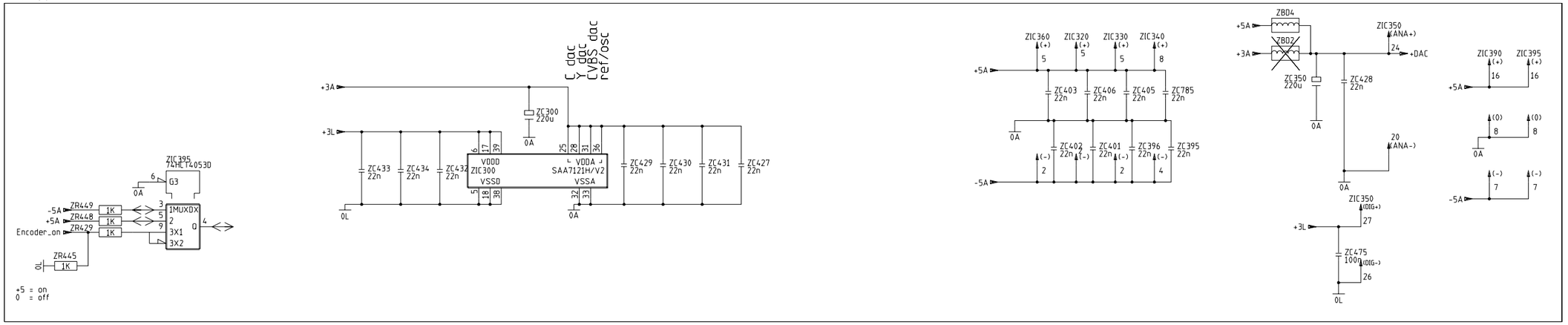


Block: MUX 1/1

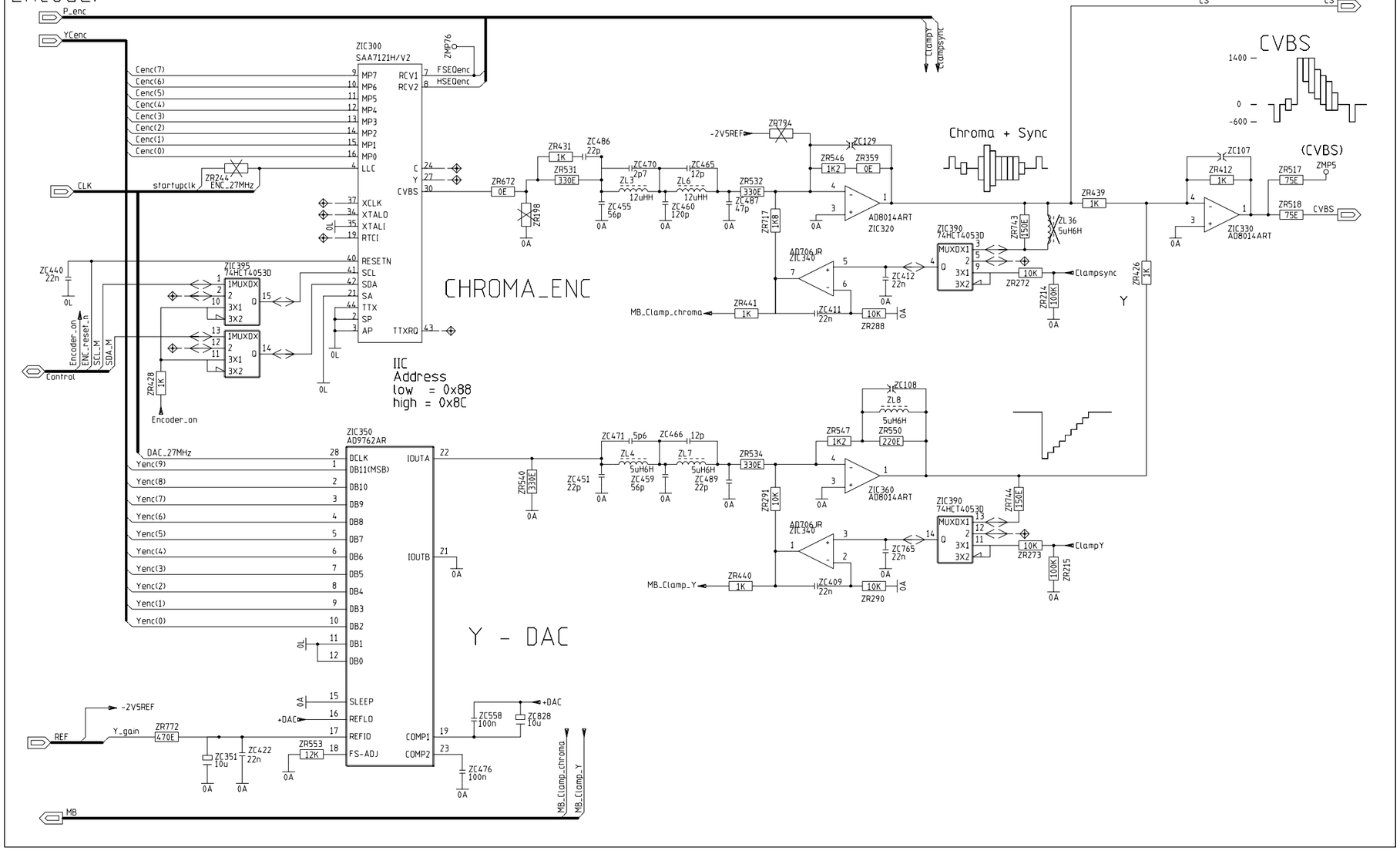
COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED		
ASS.NO: 3922 406 88720 ASS.NAME: SDTV output HD BS		
STATUS: 08		
PCB.NO: 3922 411 88723		
CIRCUIT DIAGRAM	CURR. DATE:	02-04-15
	PREV. DATE:	01-12-05
J. Rotte	ORG. DATE:	00-06-30
PROPERTY OF: 13	SHEET 130 - 8	
THOMSON MULTIMEDIA BROADCAST SOLUTIONS BREDA - THE NETHERLANDS		

THOMSON MULTIMEDIA BROADCAST SOLUTIONS

POWER encoder



Encoder

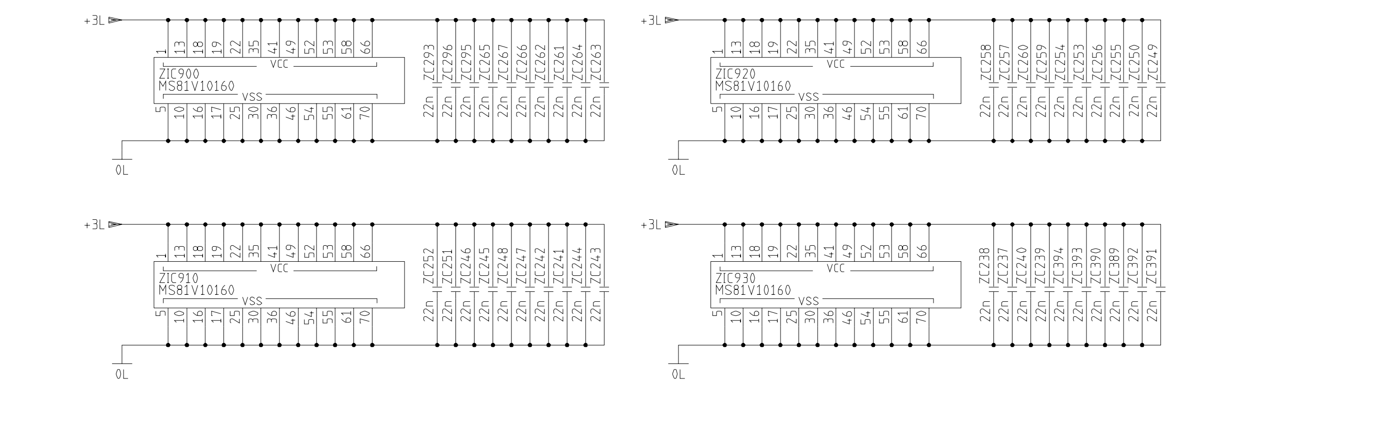


Block: Encoder 1/1

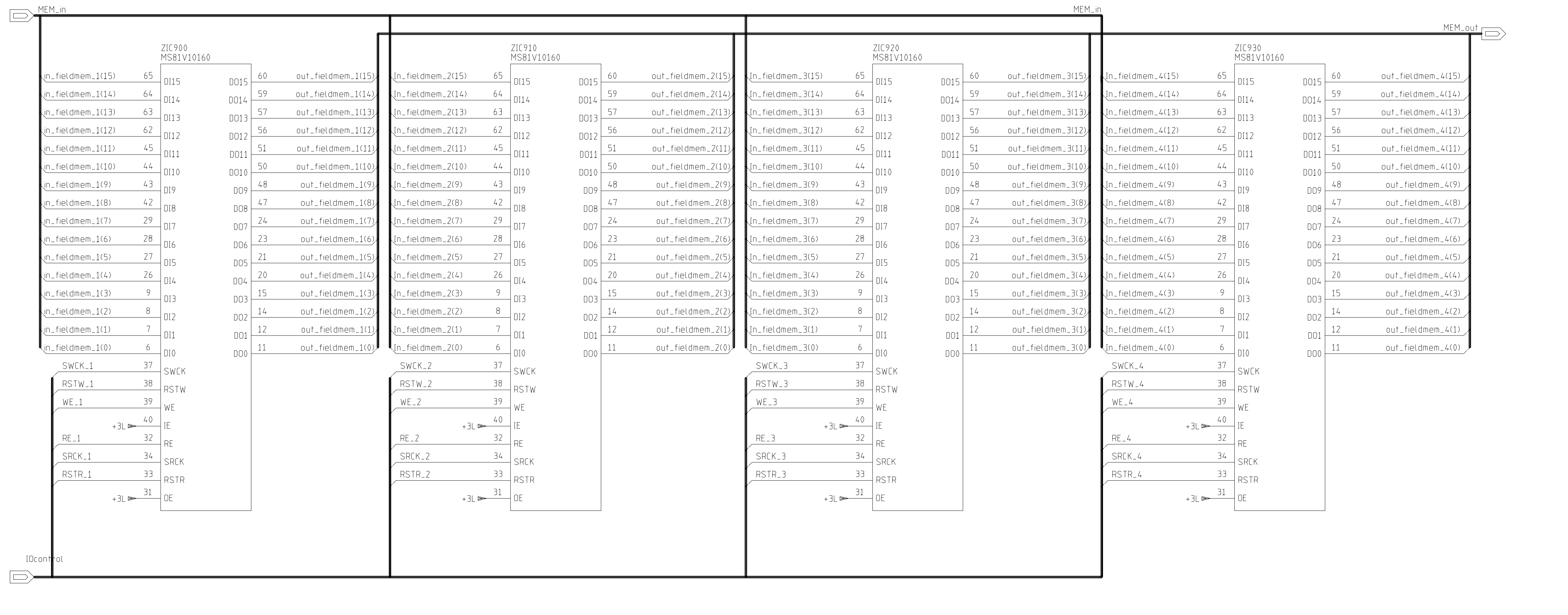
COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED		
ASS.NO:	3922 406 88720	
ASS.NAME:	SDTV output HD BS	
STATUS:	08	
PCB.NO:	3922 411 88723	
CIRCUIT DIAGRAM	CURR. DATE:	02-04-15
	PREV. DATE:	01-12-05
J. Rotte	ORG. DATE:	00-06-30
PROPERTY OF:	13	SHEET 130 - 9
THOMSON MULTIMEDIA BROADCAST SOLUTIONS BREDA - THE NETHERLANDS		

THOMSON MULTIMEDIA BROADCAST SOLUTIONS

POWER fieldmemories



Field memories



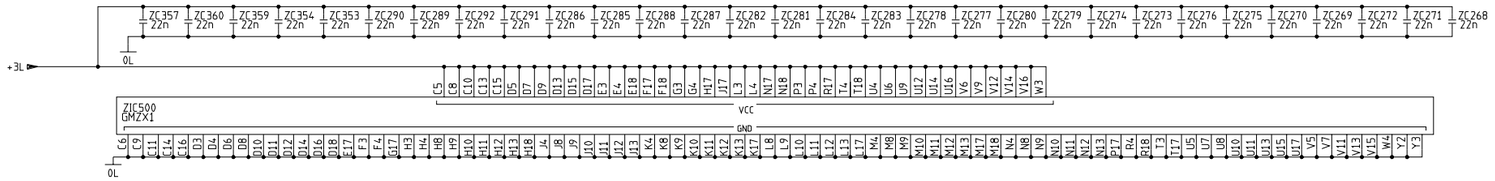
Block: Memory 1/1

COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED	
ASS.NO: 3922 406 88720 ASS.NAME: SDTV output HD BS	
STATUS: 08	
PCB.NO: 3922 411 88723	
CIRCUIT DIAGRAM	CURR. DATE: 02-04-15 PREV. DATE: 01-12-05
J. Rotte	ORG DATE: 00-06-30
PROPERTY OF: 13	SHEET 130 - 10

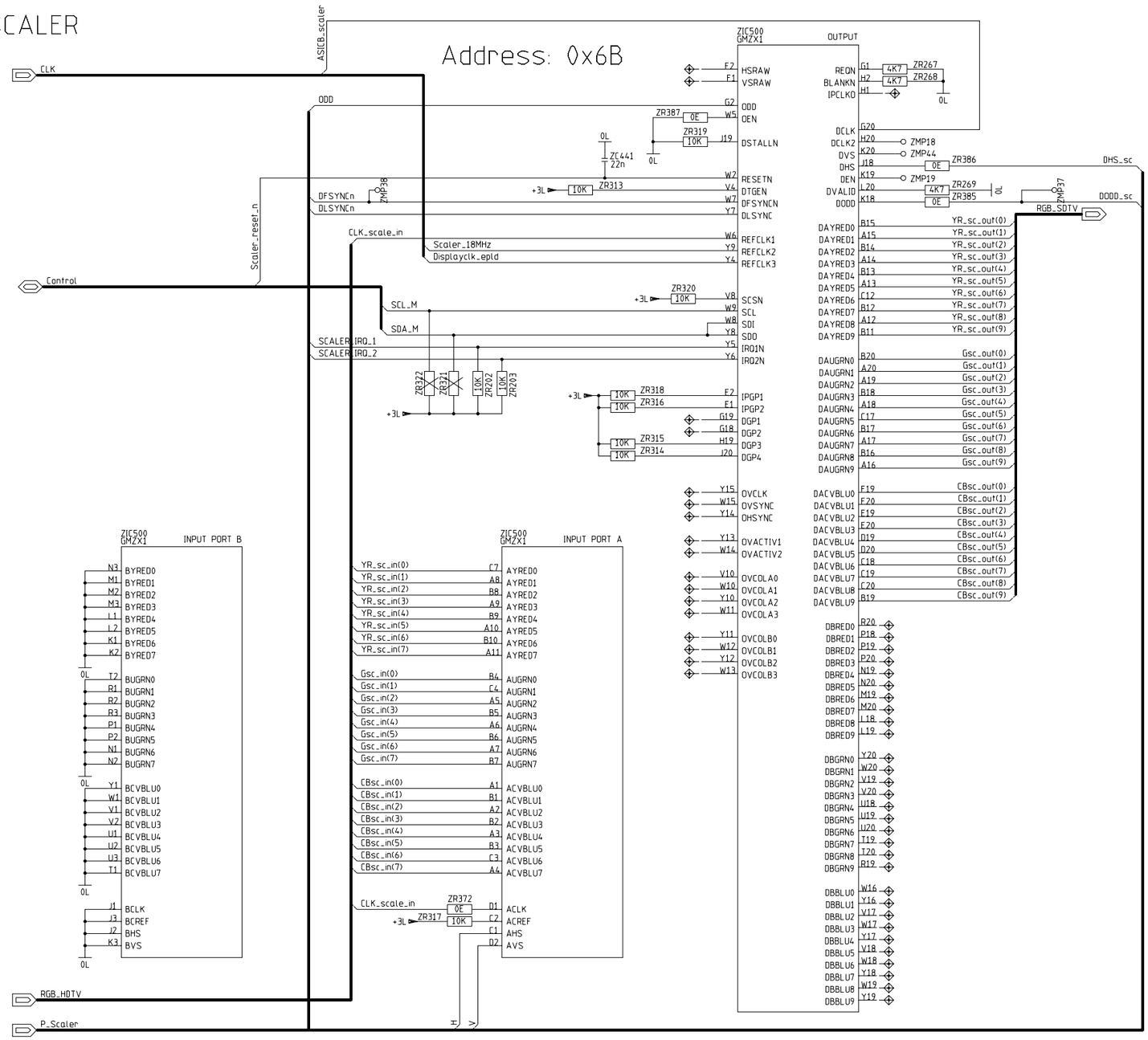
THOMSON MULTIMEDIA BROADCAST SOLUTIONS
BREDA - THE NETHERLANDS

THOMSON MULTIMEDIA BROADCAST SOLUTIONS

SCALER Supply



SCALER



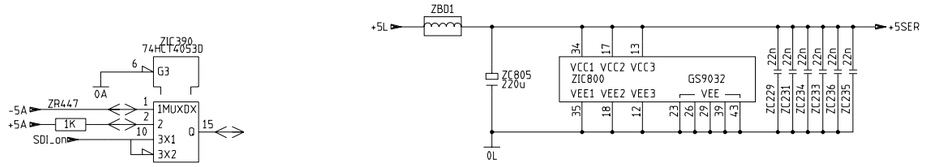
Block: Scaler 1/1

COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED	
ASS.NO:	3922 406 88720
ASS.NAME:	SDTV output HD BS
STATUS:	08
PCB.NO:	3922 411 88723
CIRCUIT DIAGRAM	CURR. DATE: 02-04-15
	PREV. DATE: 01-12-05
J. Rotte	ORG. DATE: 00-06-30
PROPERTY OF:	13 SHEET 130 - 11

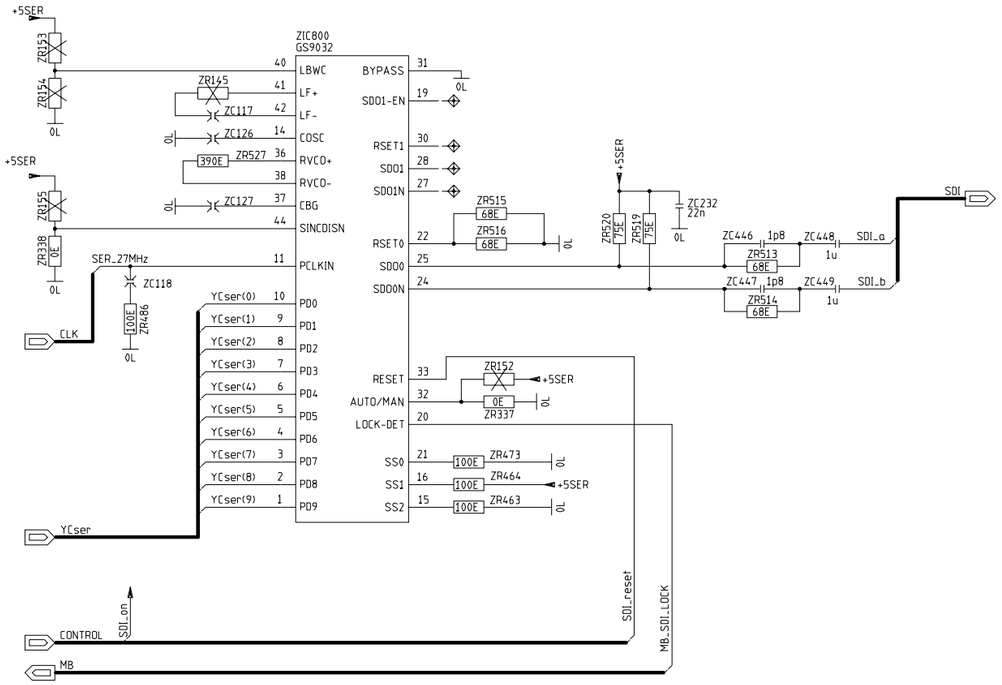
THOMSON MULTIMEDIA BROADCAST SOLUTIONS
BREDA - THE NETHERLANDS

THOMSON MULTIMEDIA BROADCAST SOLUTIONS

Power SDI



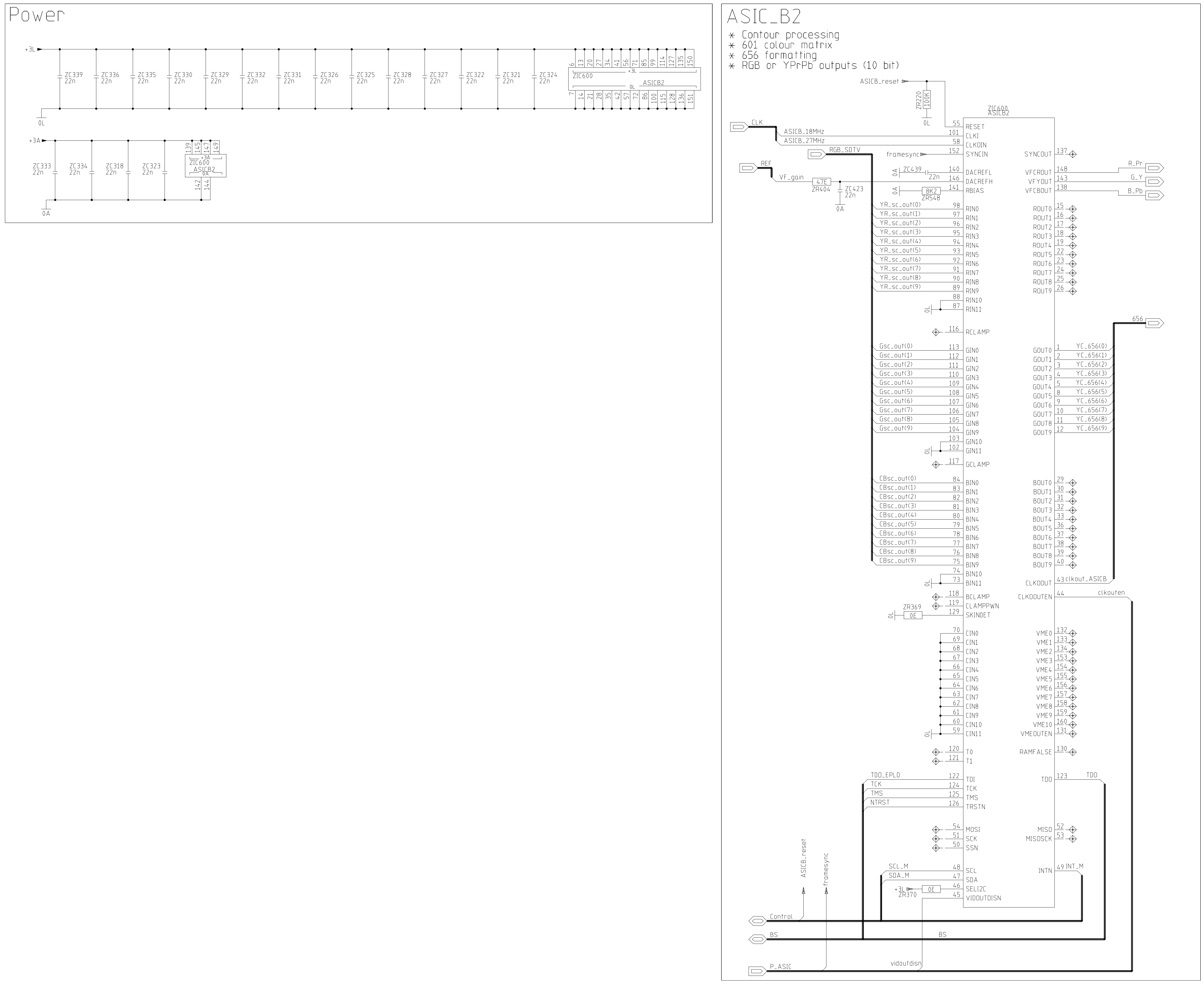
SDI



Block: Serializer 1/1

COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED	
ASS.NO: 3922 406 88720 ASS.NAME: SDTV output HD BS	
STATUS: 07	
PCB.NO: 3922 411 88723	
CIRCUIT DIAGRAM	CURR. DATE: 2001-12-05
	PREV. DATE: 2001-10-05
J. Rotte	ORG. DATE: 2000-06-30
PROPERTY OF:	13 SHEET 130 - 12
THOMSON MULTIMEDIA BROADCAST SOLUTIONS BREDA - THE NETHERLANDS	

THOMSON MULTIMEDIA BROADCAST SOLUTIONS



Block: ASIC B2 1/1

COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED

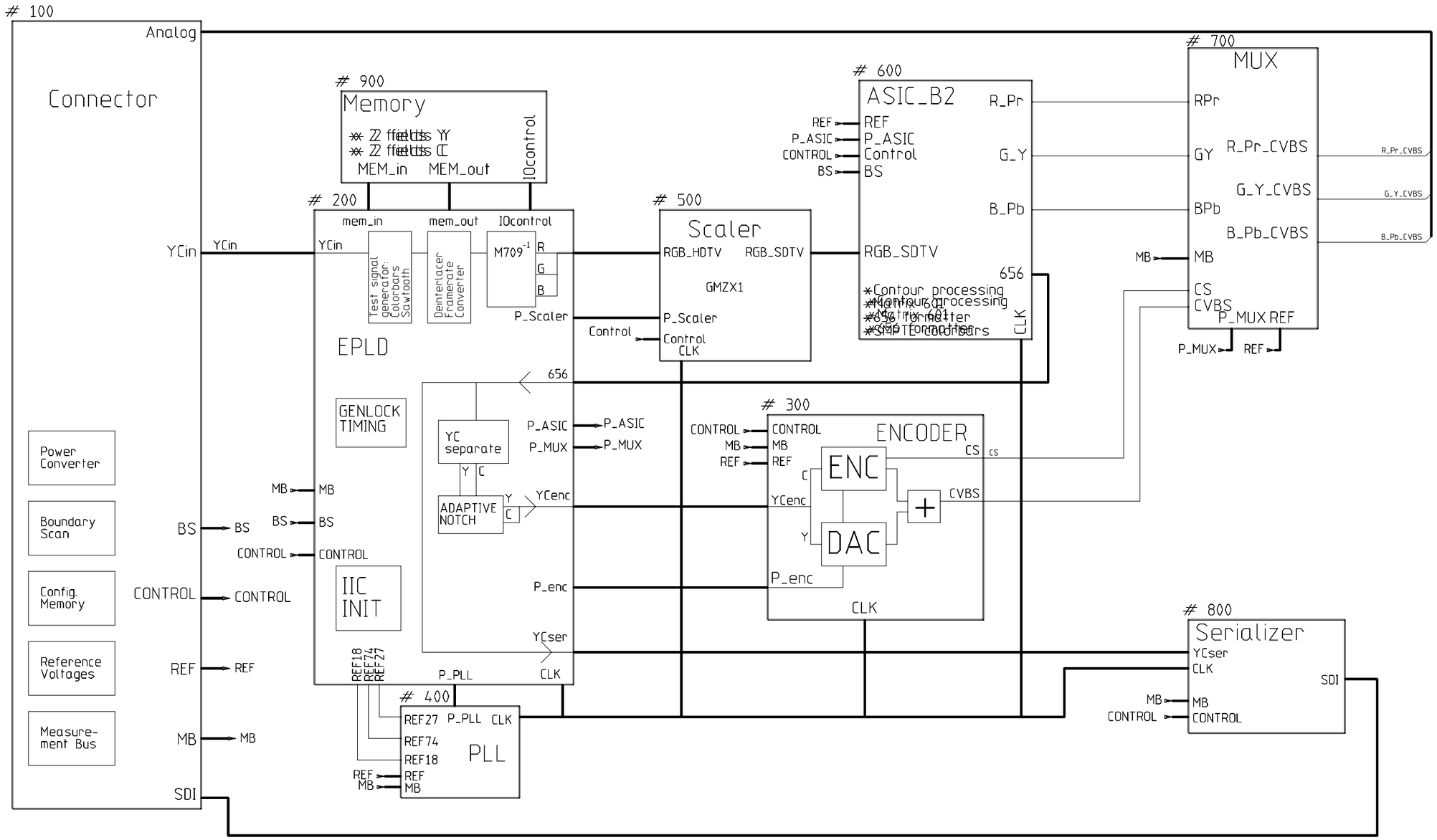
ASS.NO:	3922 406 88720
ASS.NAME:	SDTV output HD BS
STATUS:	08
PCB.NO:	3922 411 88723

CIRCUIT DIAGRAM	CURR. DATE:	02-04-15
	PREV. DATE:	01-12-05
J. Rotte	ORG. DATE:	00-06-30
PROPERTY OF:	13	SHEET 130 - 13

THOMSON MULTIMEDIA BROADCAST SOLUTIONS
BREDA - THE NETHERLANDS

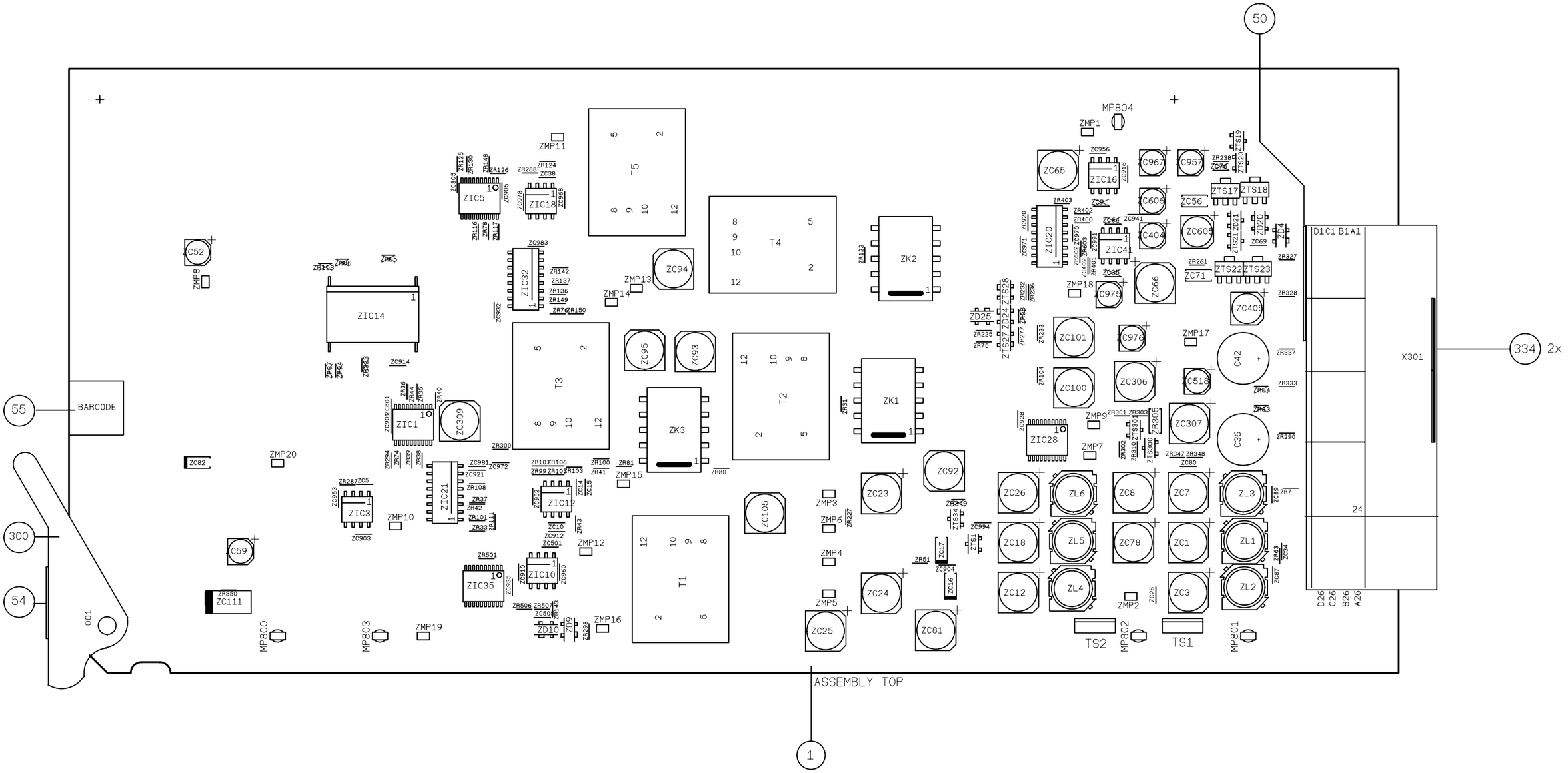
THOMSON MULTIMEDIA BROADCAST SOLUTIONS

SDTV output HD BS



BS = Boundary scan Bus
MS = Measuring bus
REF = References Bus

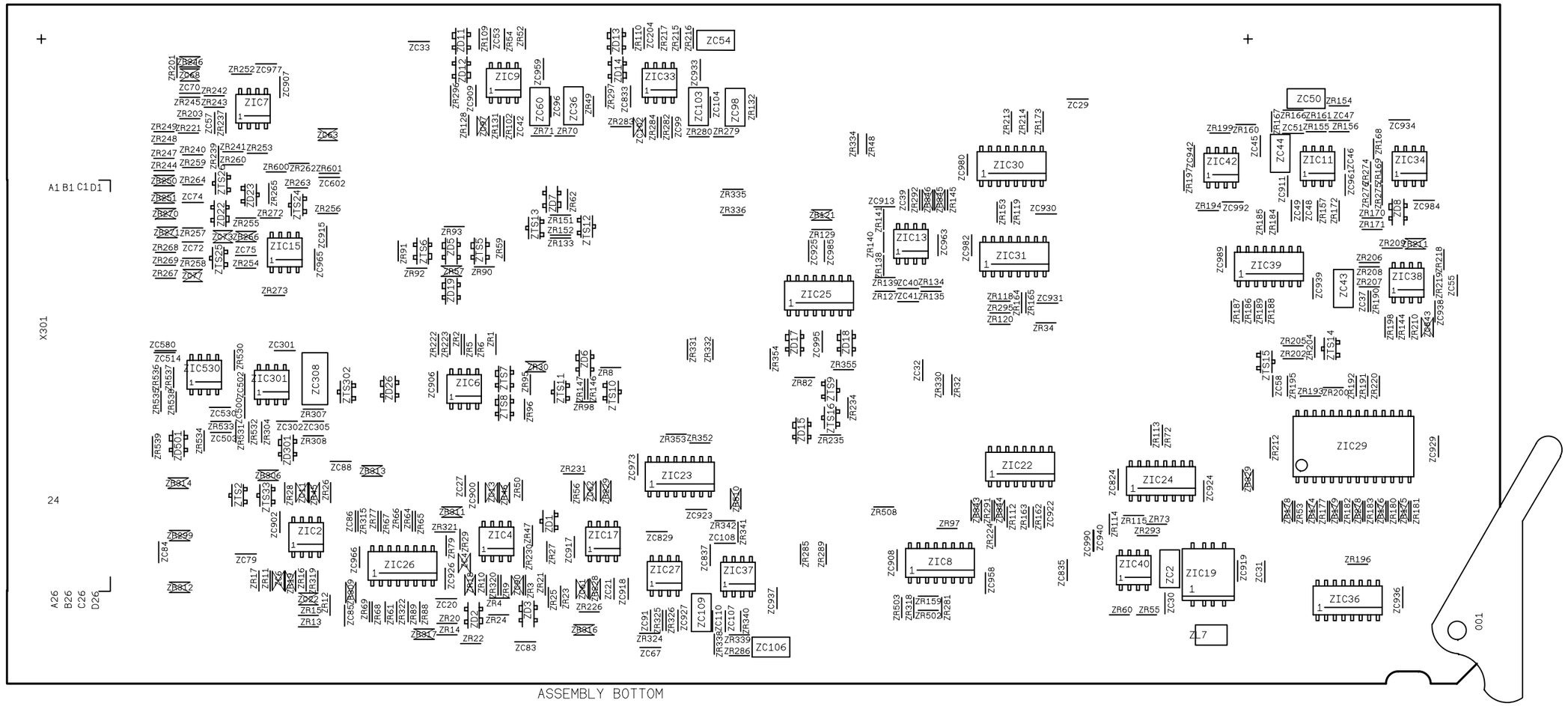
COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED	
ASS.NO:	3922 406 88720
ASS.NAME:	SDTV output HD BS
STATUS:	08
PCB.NO:	3922 411 88723
CIRCUIT DIAGRAM	CURR. DATE: 02-04-15
	PREV. DATE: 01-12-05
J. Rotte	ORG. DATE: 00-06-30
PROPERTY OF:	13 SHEET 130 - 1
THOMSON MULTIMEDIA BROADCAST SOLUTIONS BREDA - THE NETHERLANDS	



COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED.

STATUS:	0	1	2	3	4	5	6	7	8	9
	10	11	12	13	14	15	16	17	18	19

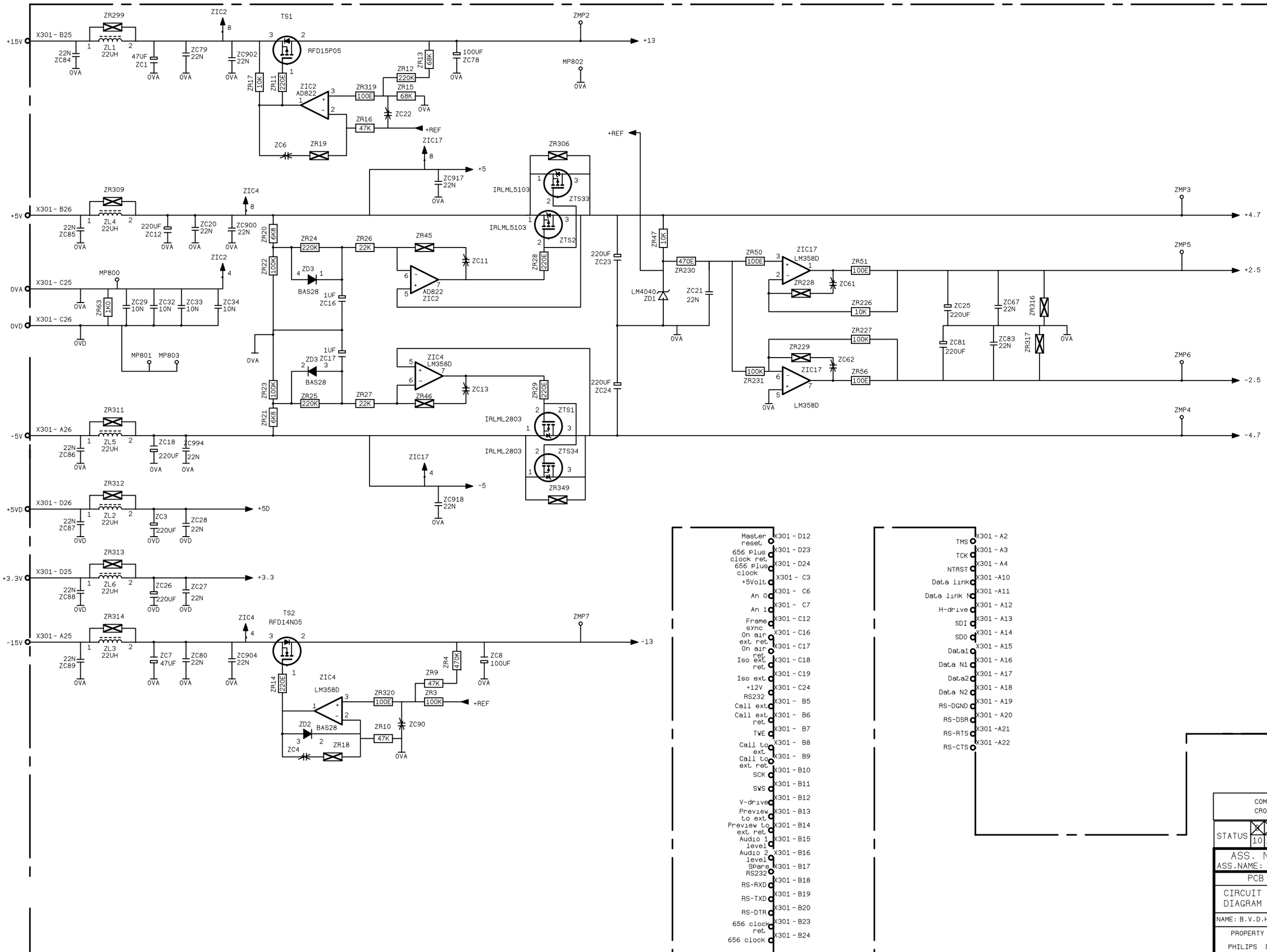
ASS. 12NC: 3922 406 87690 ASS. NAME: AUDIO/INTERCOM BS	
PCB 12NC: 3922 411 87692	
ASSEMBLY DRAWING	CURR. DATE: 00-11-23
	PREV. DATE: 00-11-06
NAME B.V.D.HERIK	ORG. DATE: 99-07-20
	4 SH SHEET 110-1
PROPERTY OF: PHILIPS DIGITAL VIDEO SYSTEMS BV - BREDA - THE NETHERLANDS	



COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED

STATUS:	X	X	X	X	X	X	6	7	8	9
	10	11	12	13	14	15	16	17	18	19

ASS. 12NC: 3922 406 87690 ASS. NAME: AUDIO/INTERCOM BS	
PCB 12NC: 3922 411 87692	
ASSEMBLY DRAWING	CURR. DATE: 00-11-23
	PREV. DATE: 00-11-06
NAME Ƀ.V.D.HERIK	ORG. DATE: 99-07-20
	4 SH SHEET 110-2
PROPERTY OF: PHILIPS DIGITAL VIDEO SYSTEMS BV - BREDA - THE NETHERLANDS	



COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED

STATUS	X	X	X	X	X	5	6	7	8	9
	10	11	12	13	14	15	16	17	18	19

ASS. NO: 3922 406 87690
ASS.NAME: AUDIO/INTERCOM BS

PCB NO: 3922 411 87692

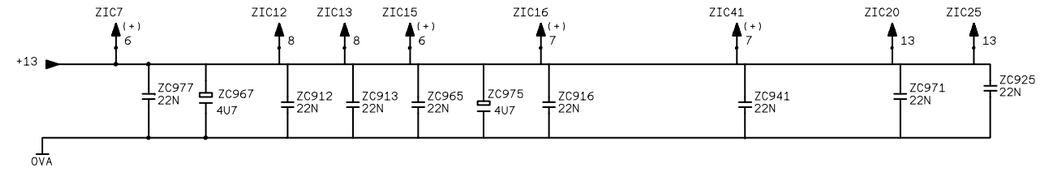
CIRCUIT DIAGRAM

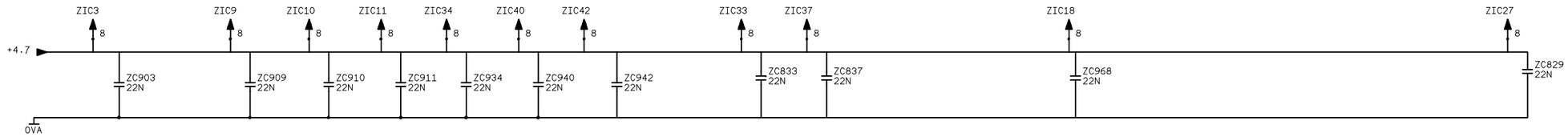
CURR. DATE: 00-11-23
PREV. DATE: 00-11-06

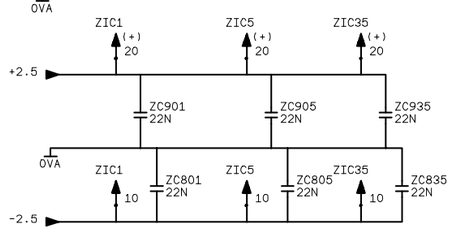
NAME: B.V.D.HERIK
ORG. DATE: 99-07-20

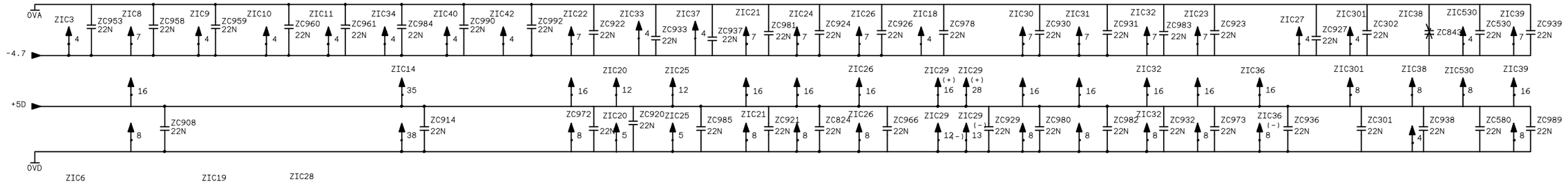
PROPERTY OF:
5 SH SHEET: 130-1

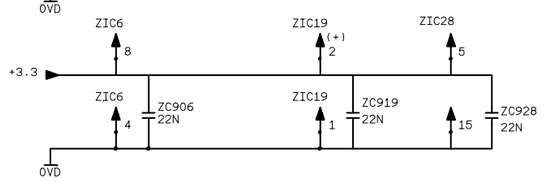
PHILIPS DIGITAL VIDEO SYSTEMS bv
BREDA - THE NETHERLANDS

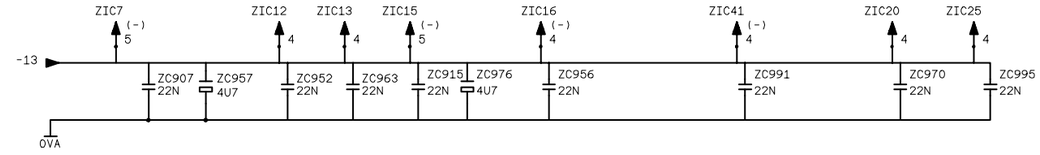


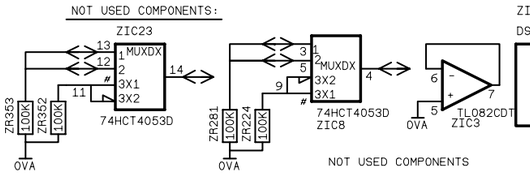


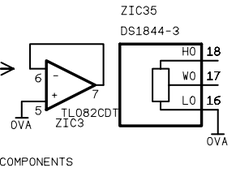


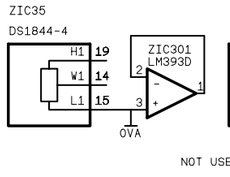


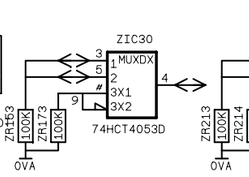


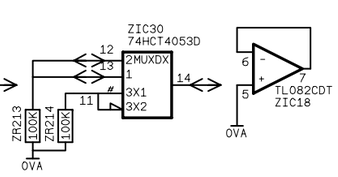


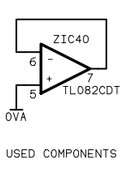


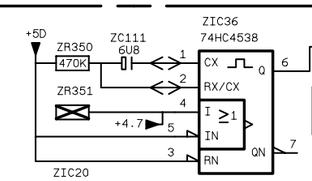


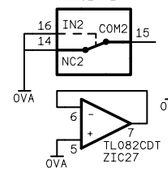


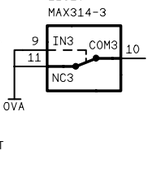












COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED

STATUS	X	X	X	X	X	X	6	7	8	9
	10	11	12	13	14	15	16	17	18	19

ASS. NO: 3922 406 87690
ASS.NAME: AUDIO/INTERCOM BS

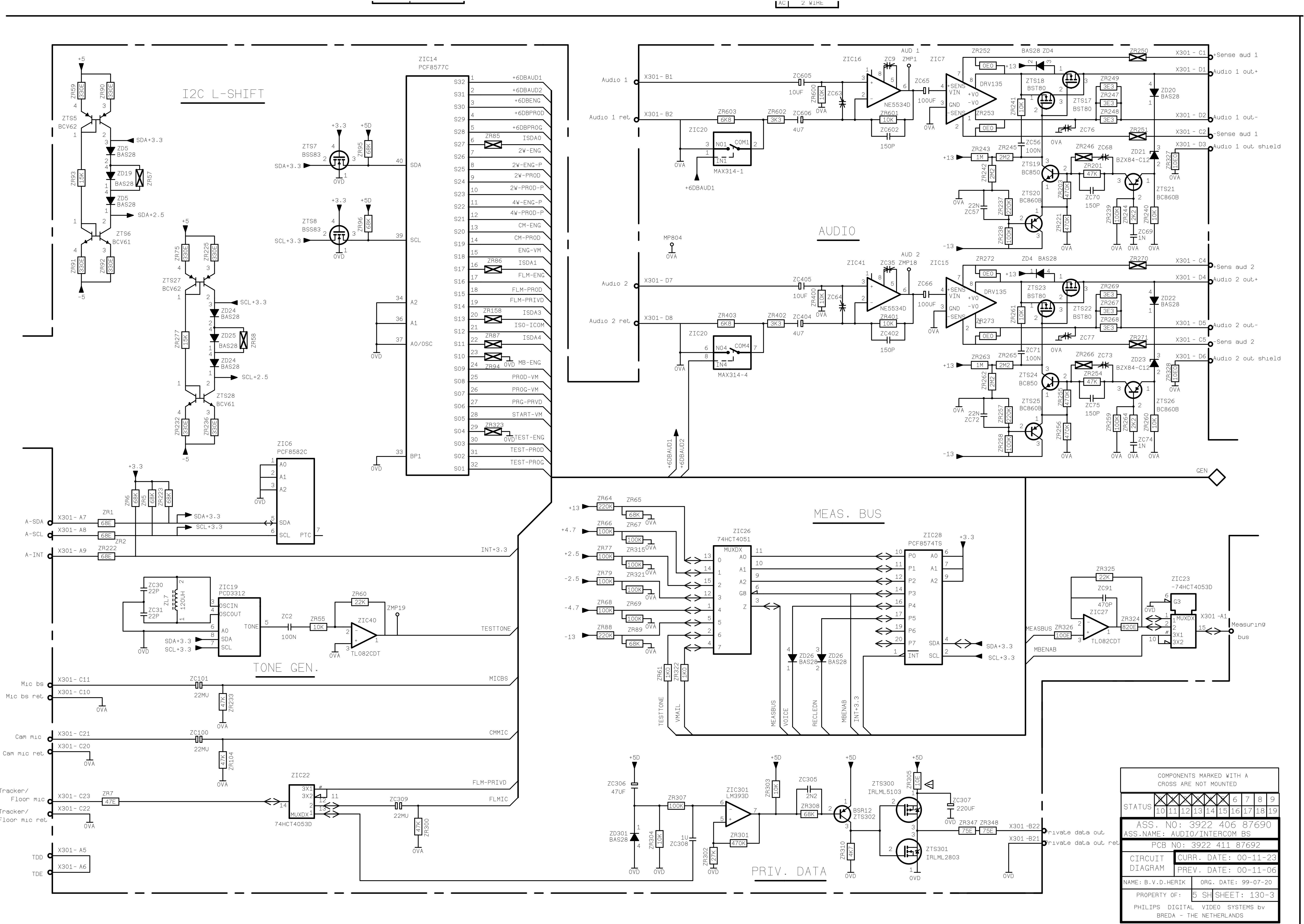
PCB NO: 3922 411 87692

CIRCUIT DIAGRAM | CURR. DATE: 00-11-23 | PREV. DATE: 00-11-06

NAME: B.V.D.HERIK | ORG. DATE: 99-07-20

PROPERTY OF: | 5 SH | SHEET: 130-2

PHILIPS DIGITAL VIDEO SYSTEMS bv
BREDA - THE NETHERLANDS


I2C L-SHIFT
AUDIO
MEAS. BUS
TONE GEN.
PRIV. DATA
ZIC14
PCF8577C
ZIC6
PCF8582C
ZIC19
PCD3312
ZIC26
74HCT4051
ZIC28
PCF8574TS
ZIC23
-74HCT4053D
ZIC22
74HCT4053D
ZIC301
LM393D
MAX314-1
MAX314-4
NE5534D
DRV135
TL082CDT
Audio 1
Audio 1 ret
Audio 2
Audio 2 ret
A-SDA
A-SCL
A-INT
Mic bs
Mic bs ret
Cam mic
Cam mic ret
Tracker/
Floor mic
Tracker/
Floor mic ret
TDD
TDE
+Sense aud 1
Audio 1 out+
Audio 1 out-
-Sense aud 1
Audio 1 out shield
+Sens aud 2
Audio 2 out+
Audio 2 out-
-Sens aud 2
Audio 2 out shield
Measuring
bus
private data out
private data out ret
GEN
COMPONENTS MARKED WITH A
CROSS ARE NOT MOUNTED
STATUS
ASS. NO: 3922 406 87690
ASS.NAME: AUDIO/INTERCOM BS
PCB NO: 3922 411 87692
CIRCUIT
DIAGRAM
CURR. DATE: 00-11-23
PREV. DATE: 00-11-06
NAME: B.V.D.HERIK
ORG. DATE: 99-07-20
PROPERTY OF:
5 SH
SHEET: 130-3
PHILIPS DIGITAL VIDEO SYSTEMS bv
BREDA - THE NETHERLANDS

ENG.

ENG S-TONE

ENG LEVELS

PROD

PROD S-TONE

PROD LEVELS

COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED	
STATUS	X X X X X X 6 7 8 9 10 11 12 13 14 15 16 17 18 19
ASS. NO: 3922 406 87690	
ASS.NAME: AUDIO/INTERCOM BS	
PCB NO: 3922 411 87692	
CIRCUIT DIAGRAM	CURR. DATE: 00-11-23
	PREV. DATE: 00-11-06
NAME: B.V.D.HERIK	ORG. DATE: 99-07-20
PROPERTY OF:	5 SH SHEET: 130-4
PHILIPS DIGITAL VIDEO SYSTEMS bv BREDA - THE NETHERLANDS	

VM-CHAN-SEL

VOICE DET.

ENG

TIME INTG.

REC

PLAY

VOICE MAIL

PROD

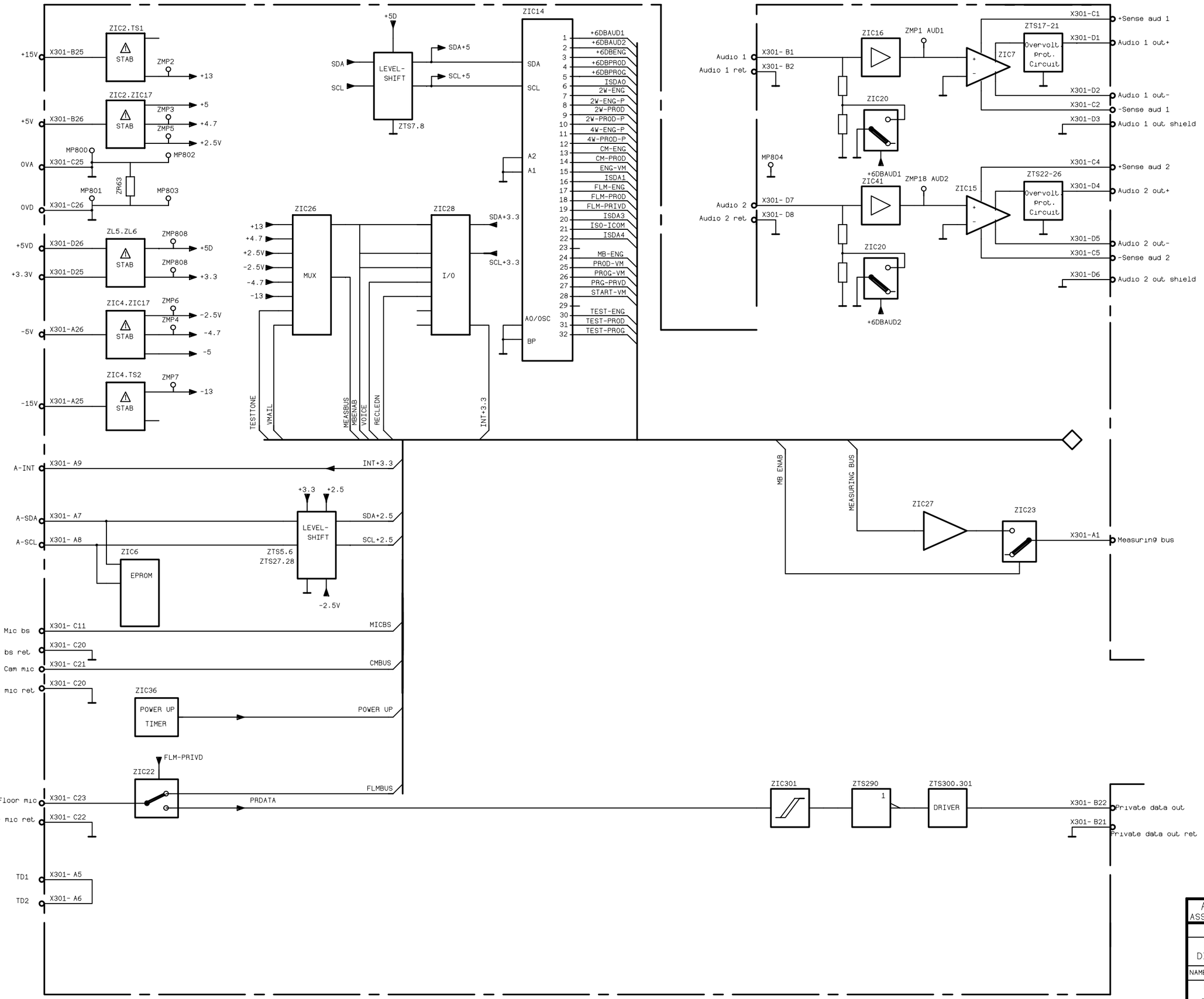
PROG

PROG LEVEL

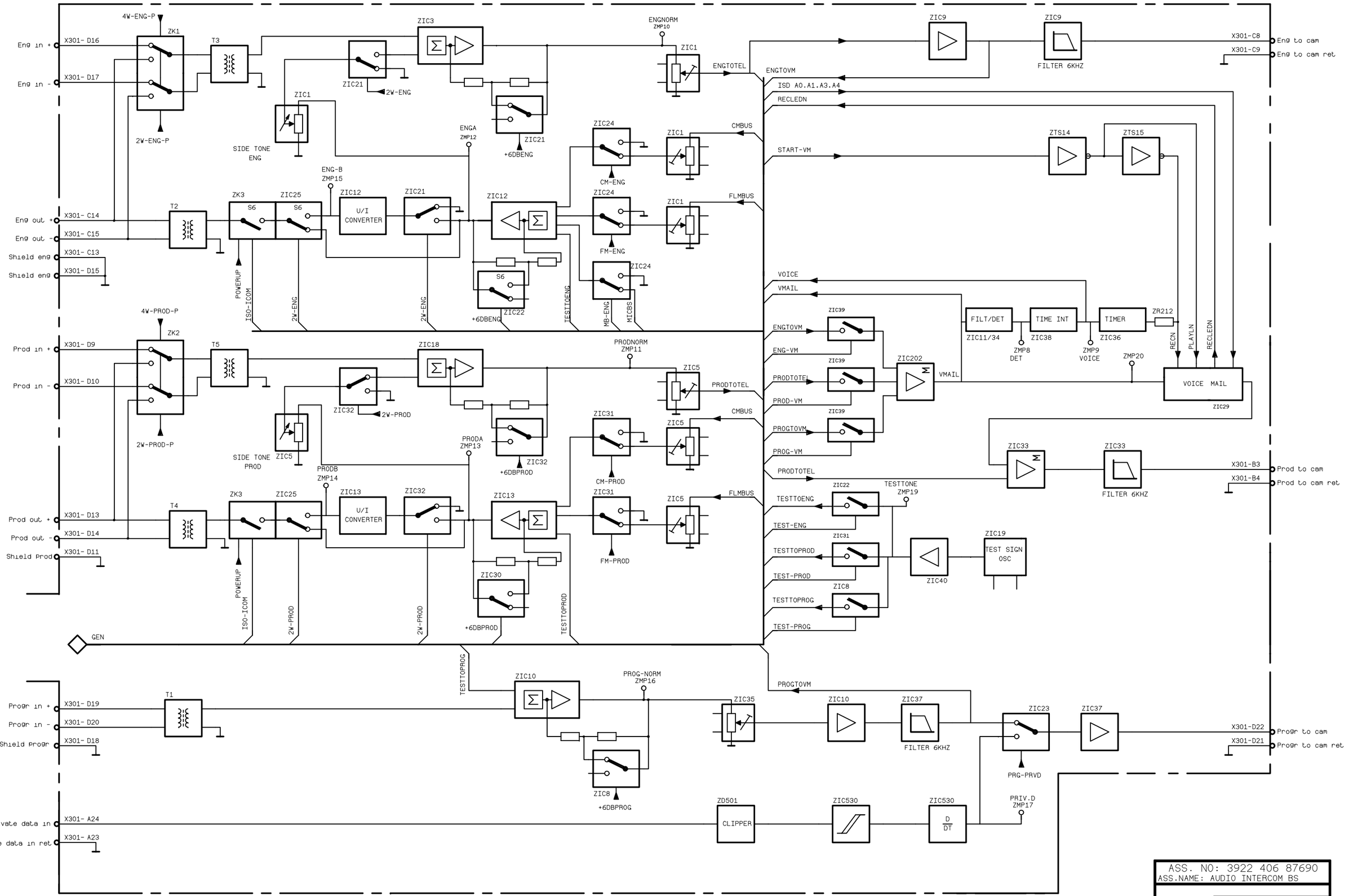
PRIV. DATA

PROG/PRIVD

COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED									
STATUS	X	X	X	X	X	X	6	7	8	9
	10	11	12	13	14	15	16	17	18	19
ASS. NO: 3922 406 87690										
ASS.NAME: AUDIO/INTERCOM BS										
PCB NO: 3922 411 87692										
CIRCUIT DIAGRAM	CURR. DATE: 00-11-23									
	PREV. DATE: 00-11-06									
NAME: B.V.D.HERIK	ORG. DATE: 99-07-20									
PROPERTY OF:	5 SH SHEET: 130-5									
PHILIPS DIGITAL VIDEO SYSTEMS bv BREDA - THE NETHERLANDS										

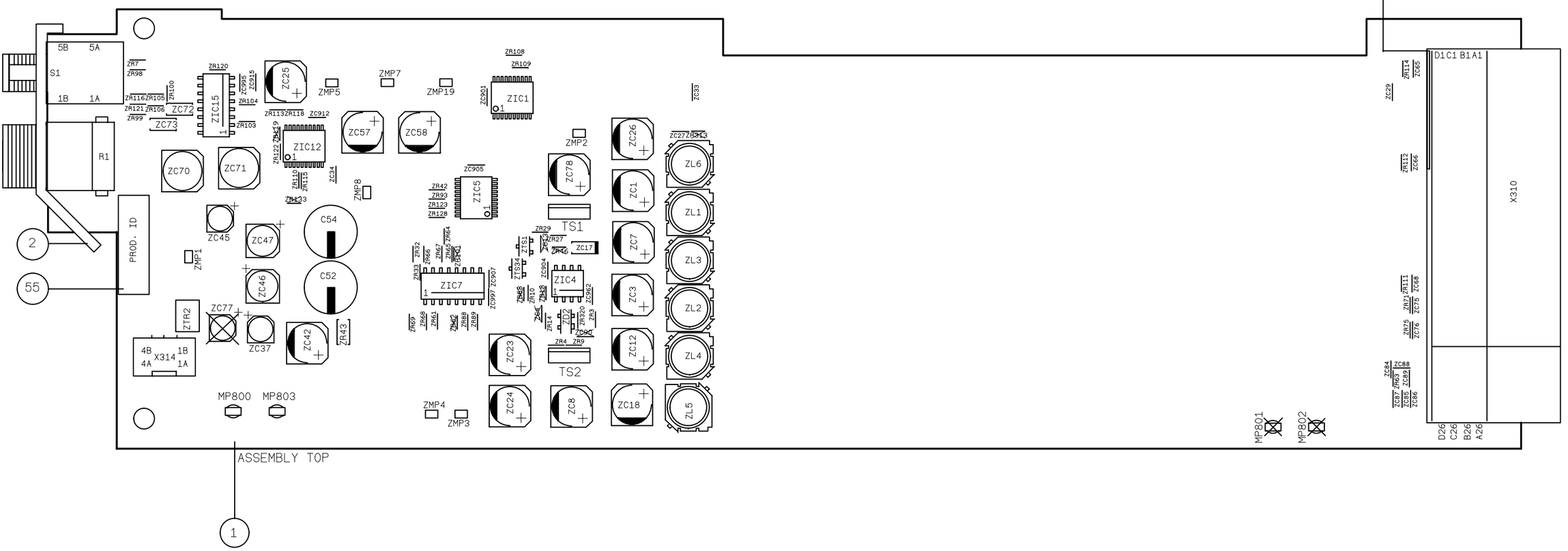


ASS. NO: 3922 406 87690	
ASS.NAME: AUDIO INTERCOM BS	
BLOCK DIAGRAM	CURR. DATE: 01-09-06
	PREV. DATE: 00-02-29
NAME: B.V.D.HERIK	ORG. DATE: 99-03-24
PROPERTY OF:	2 SH SHEET: 136-1
PHILIPS DIGITAL VIDEO SYSTEMS bv BREDA - THE NETHERLANDS	



ASS. NO: 3922 406 87690	
ASS.NAME: AUDIO INTERCOM BS	
BLOCK DIAGRAM	CURR. DATE: 01-09-06
	PREV. DATE: 00-02-29
NAME: B.V.D.HERIK	ORG. DATE: 99-03-24
PROPERTY OF:	2 SH SHEET: 136-1
PHILIPS DIGITAL VIDEO SYSTEMS bv BREDA - THE NETHERLANDS	

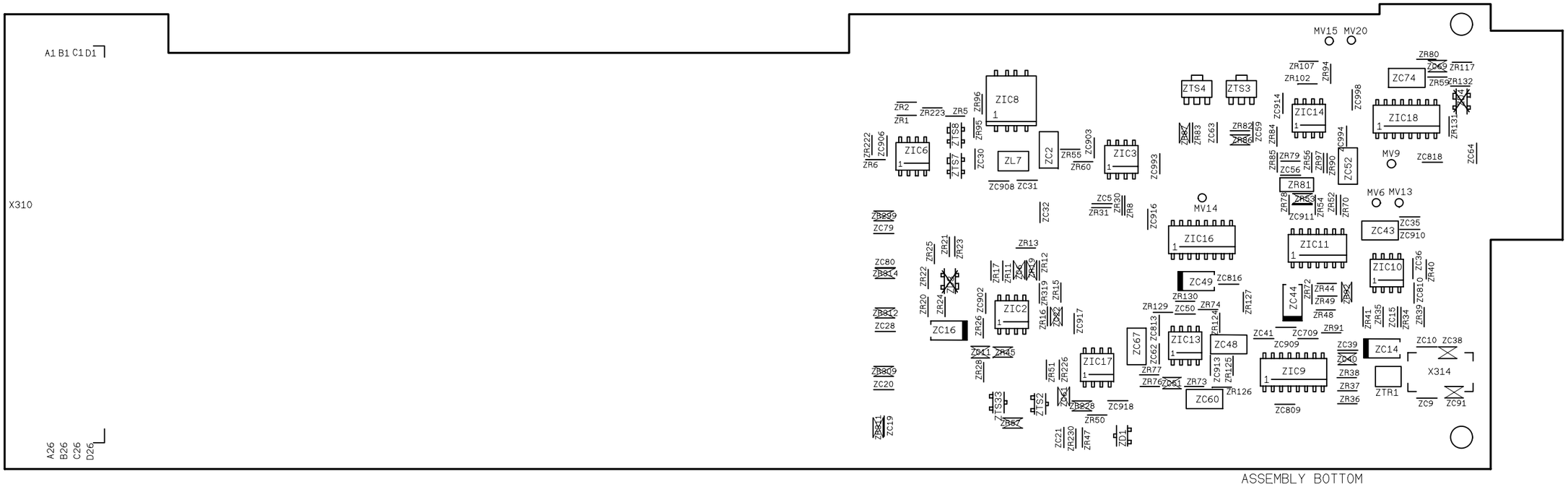
ASSEMBLY ALSO VALID FOR:	TUCHEL 6: 3922 407 33191
	TUCHEL 5: 3922 407 33201
	XLR5: 3922 407 33211



COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED.

STATUS:	~~0~~	~~1~~	~~2~~	~~3~~	~~4~~	5	6	7	8	9
	10	11	12	13	14	15	16	17	18	19

ASS. 12NC: 3922 406 87820 ASS. NAME: HEADSET OPTION	
PCB 12NC: 3922 411 87822	
ASSEMBLY DRAWING	CURR. DATE: 01-09-13
	PREV. DATE: 01-08-13
NAME B.V.D.HERIK	ORG. DATE: 00-03-31
	4 SH SHEET 110-1
PROPERTY OF: PHILIPS DIGITAL VIDEO SYSTEMS BV - BREDA - THE NETHERLANDS	

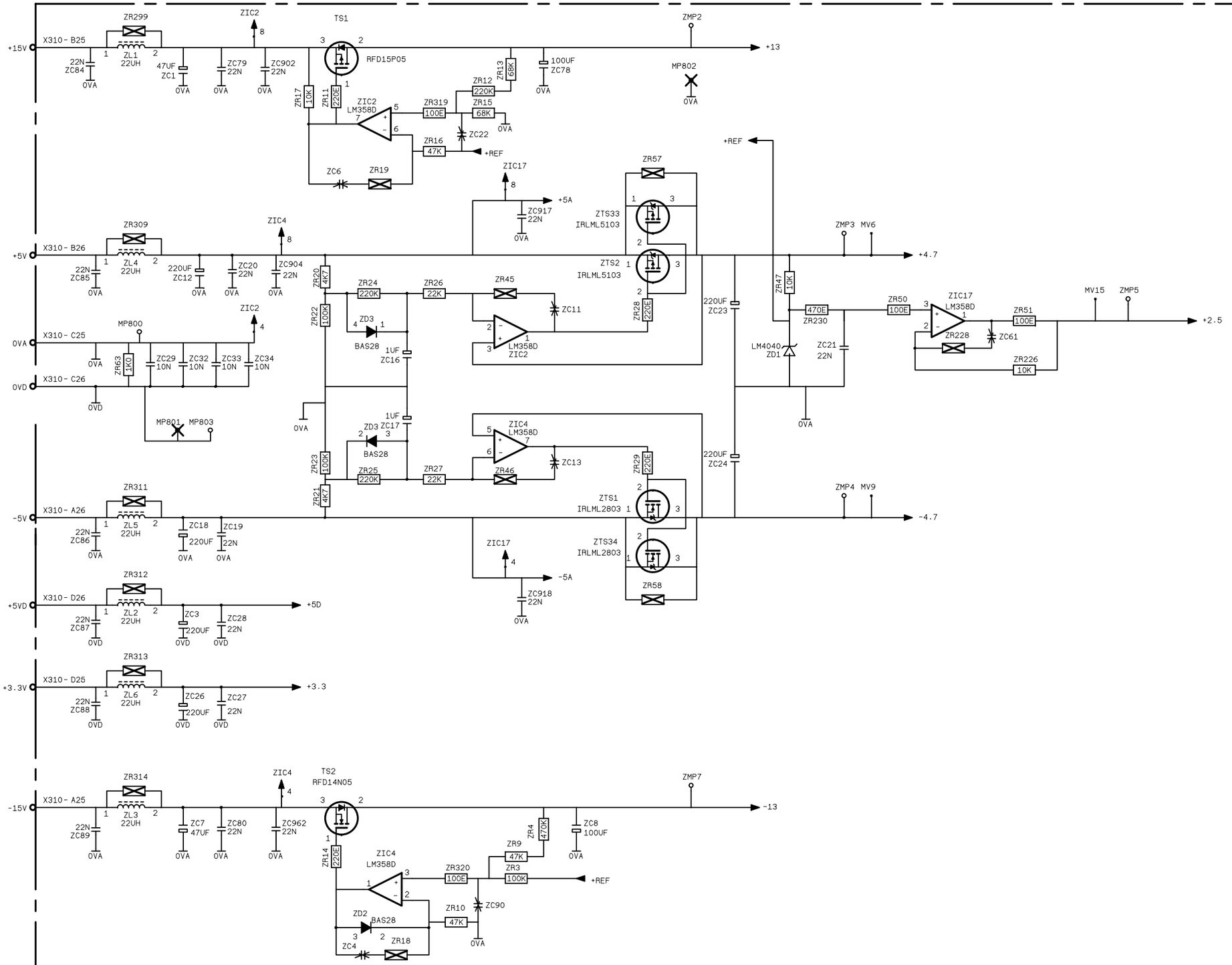


ASSEMBLY BOTTOM

COMPONENTS MARKED WITH A
CROSS ARE NOT MOUNTED

STATUS:	0	1	2	3	4	5	6	7	8	9
	10	11	12	13	14	15	16	17	18	19

ASS. 12NC: 3922 406 87820 ASS. NAME: HEADSET OPTION	
PCB 12NC: 3922 411 87822	
ASSEMBLY DRAWING	CURR. DATE: 01-09-13
	PREV. DATE: 01-08-13
NAME B.V.D.HERIK	ORG. DATE: 00-03-31
	4 SH SHEET 110-2
PROPERTY OF: PHILIPS DIGITAL VIDEO SYSTEMS BV - BREDA - THE NETHERLANDS	



COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED

STATUS	X	X	X	X	X	5	6	7	8	9
	10	11	12	13	14	15	16	17	18	19

ASS. NO: 3922 406 87820
ASS.NAME: HEADSET OPTION

PCB NO: 3922 411 87822

CIRCUIT DIAGRAM

CURR. DATE: 01-08-13
PREV. DATE: 01-05-01

NAME: B.V.D.HERIK
ORG. DATE: 00-03-31

PROPERTY OF:
4 SH SHEET: 130-1

PHILIPS DIGITAL VIDEO SYSTEMS bv
BREDA - THE NETHERLANDS

I2C L-SHIFT

TMS X310 - A2
TCK X310 - A3
NTRST X310 - A4
DATA-LINK X310 - A10
DATA-LINK-N X310 - A11
H-DRIVE X310 - A12
SDO X310 - A21
SDI X310 - A24

TWE X310 - B7
SCK X310 - B10
SWS X310 - B11
V-DRIVE X310 - B12
656CLOCKRET X310 - B23
656CLOCK X310 - B24

A-SDA X310 - A7 ZR1 68E
A-SCL X310 - A8 ZR2 68E
A-INT X310 - A9 ZR222 68E

ZIC6 PCF8582C
+3.3 A0 A1 A2 0VD SCL SDA PTC
ZTS7 BSS83 ZR95 100K
ZTS8 BSS83 ZR96 100K
ZR6 68K ZR5 68K ZR223 68K

INT+3.3 SCL+3.3 SDA+3.3 SCL+5 SDA+5

Meas. Bus

ZIC7 74HCT4051
+13 ZR64 220K ZR65 68K 0VA
+4.7 ZR66 100K ZR67 100K 0VA
+2.5 ZR32 100K ZR33 100K 0VA
ZR101
-4.7 ZR68 100K ZR69 100K 0VA
-13 ZR88 220K ZR89 68K 0VA
ZR61 1KO ZR62
A0 A1 A2 G8 Z MUXDX

ZIC5 PCF8574TS +3.3 0VD
P0 P1 P2 P3 P4 P5 P6 P7 INT SCL SDA
S1 1B 2B Prod 3B Progr 4B Cm+Tr/Flm 5B Eng 0VD
ZR42 100E ZR93 100E ZR123 100E ZR128 100E

ZIC8 PCD3312
ZC30 22P ZC31 22P ZL7 120UH
OSCIN OSCOUT TONE A0 SDA SCL
ZC2 100N ZR55 10K
ZR60 22K ZIC3 TL082CDT 0VA
ZMP19 MV20

ZR30 22K ZC5 470P ZR8 100E ZR31 820E
ZIC3 TL082CDT
3X2 3X1 MUXDX ZIC16 74HCT4053D
X310 - A1 Measuring bus

SDA+3.3 SCL+3.3 TONEGEN ENG-SEL INT+3.3 SCL+3.3 SDA+3.3

Tone Gen.

SIG

I2C Func.

FRAMESYNC X310 - C12
X310C24 X310 - C24

Prod out + X310 - D1
Prod out - X310 - D2
Shield Prod X310 - D3
Eng out + X310 - D4
Eng out - X310 - D5
Shield eng X310 - D6
MASTER-RESET X310 - D12
656 Plus clock ret X310 - D23
656 Plus clock X310 - D24

TDC X310 - A5
TDD X310 - A6

ZIC1 PCF8574TS +5D ZR108 100K ZR109 100K
A0 A1 A2 0VD SDA SCL
P0 PRG-PRVD
P1 CM-TEL
P2 FLM-TEL
P3 BM-TEL
P4 +20DB
P5 PHANT
P6 BM-TRC
P7 TEST
INT INT+3.3
SCL+3.3
SDA+3.3

+5D ZIC7 16 ZC907 22N ZIC7 8 0VD
+4.7 ZIC3 8 ZC903 22N 0VA
ZIC7 7 ZC997 22N -4.7
ZIC3 4 ZC993 22N

+3.3 ZIC1 5 ZC901 22N 15
ZIC5 5 ZC905 22N 15
ZIC6 8 ZC906 22N 4
ZIC8 (+) 2 ZC908 22N 1
0VD

COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED

STATUS	X	X	X	X	X	5	6	7	8	9
	10	11	12	13	14	15	16	17	18	19

ASS. NO: 3922 406 87820
ASS.NAME: HEADSET OPTION
PCB NO: 3922 411 87822
CIRCUIT DIAGRAM
CURR. DATE: 01-08-13
PREV. DATE: 01-05-01
NAME: B.V.D.HERIK
ORG. DATE: 00-03-31
PROPERTY OF:
4 SH SHEET: 130-2
PHILIPS DIGITAL VIDEO SYSTEMS bv
BREDA - THE NETHERLANDS

Phant.Lev.

Mic.Proc.

+20DB Gain

Lim.Level

Tuchel 5/6

XLR5

Micr

Housing

Micr ret

X574-3

X574-4

X574-2

X574

X574-1

X314-1A

X314-2A

X314-1B

X314-2B

n.c.

screening

HOUSING

ZC9 680P

ZC10 680P

ZTR1

+13

PHANT

ZR43 220E

100UF ZC42

ZC41 22N

0VA

ZIC9 MAX314-2

ZIC9 MAX314-1

COM1

ZR36 3K3

ZR37 3K3

ZR38 3K3

ZR39 10K

ZC77 4U7

ZC14 1UF

ZC40

ZC39 22N

ZR34 47E

ZC15 470P

ZR35 1E0

ZR41 2K2

ZC37 4U7

ZR91 1E0

ZIC9 MAX314-3

ZIC9 MAX314-4

ZC35 22P

ZIC10 NE5534D

ZR40 22K

ZC36 100P

ZC43 100N

ZMP1

MV13

ZR49 1K0

ZR44 10K

ZC46 10UF

ZC47 10UF

ZR48 100E

ZC44 1UF

ZR92

ZIC11 SSM2166S

VCA GAIN ADJ

V OUT

NOISE GATE

CONTROL

ROT POINT

COMP. RATIO

LEVEL DETECTOR

AVG CAP

PWR DOWN

BUF OUT

VCA IN

VCA R

ZR72 33K

ZR70 470K

ZR133

+4.7

ZR54 0E0

ZR78 15K

ZR53

ZC45 4U7

ZR62 0E0

ZIC12 DS1844-1

A2-RSTN

A1-DOUT

R/WN-A0

SCL-CLK

SDA-DIN

PS

OVD

+5D

SCL+5

SDA+5

TONEGEN

TEST

ZMP8

MV14

ZIC16 74HCT4053D

MUXDX

3X1

3X2

1UF ZC49

ZR74 100K

ZIC13 TL082CDT

ZR129 220E

ZC50 470P

ZR130 22K

MICBSOUT

X310 -B22

X310 -B21

Mic bs

Mic bs ret

ZIC16 -74HCT4053D

G3

ZC62 4N7

ZC67 2N7

ZR124 22K

ZR125 22K

ZR126 22K

ZR73 100E

ZR77 220E

ZC48 1N8

ZC60 100P

ZC51

ZR76 0E0

X310 - C8

X310 - C9

Mic bs sw

Mic bs ret

BM-TRC

SIG

+20DB

ZIC9

ZC909 22N

ZC809 22N

ZC709 22N

ZC912 22N

ZC916 22N

ZC816 22N

ZC910 22N

ZC810 22N

ZC813 22N

ZC913 22N

ZC911 22N

ZIC10

ZIC11

ZIC12

ZIC13

ZIC16

+13

-13

+5D

-4.7

COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED

STATUS	X	X	X	X	X	5	6	7	8	9
	10	11	12	13	14	15	16	17	18	19

ASS. NO: 3922 406 87820
ASS.NAME: HEADSET OPTION

PCB NO: 3922 411 87822

CIRCUIT DIAGRAM

CURR. DATE: 01-08-13

PREV. DATE: 01-05-01

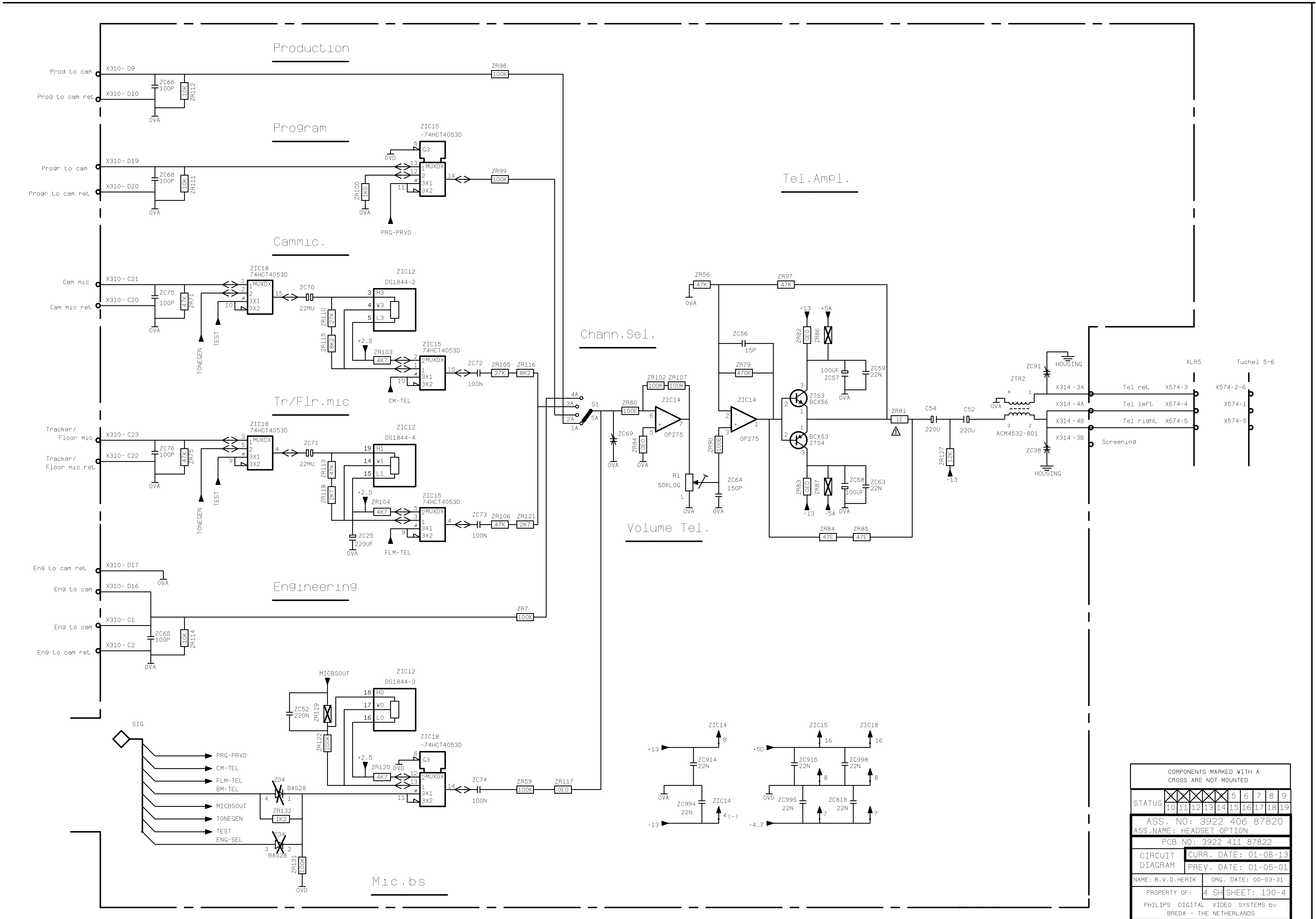
NAME: B.V.D.HERIK

ORG. DATE: 00-03-31

PROPERTY OF:

4 SH SHEET: 130-3

PHILIPS DIGITAL VIDEO SYSTEMS bv
BREDA - THE NETHERLANDS

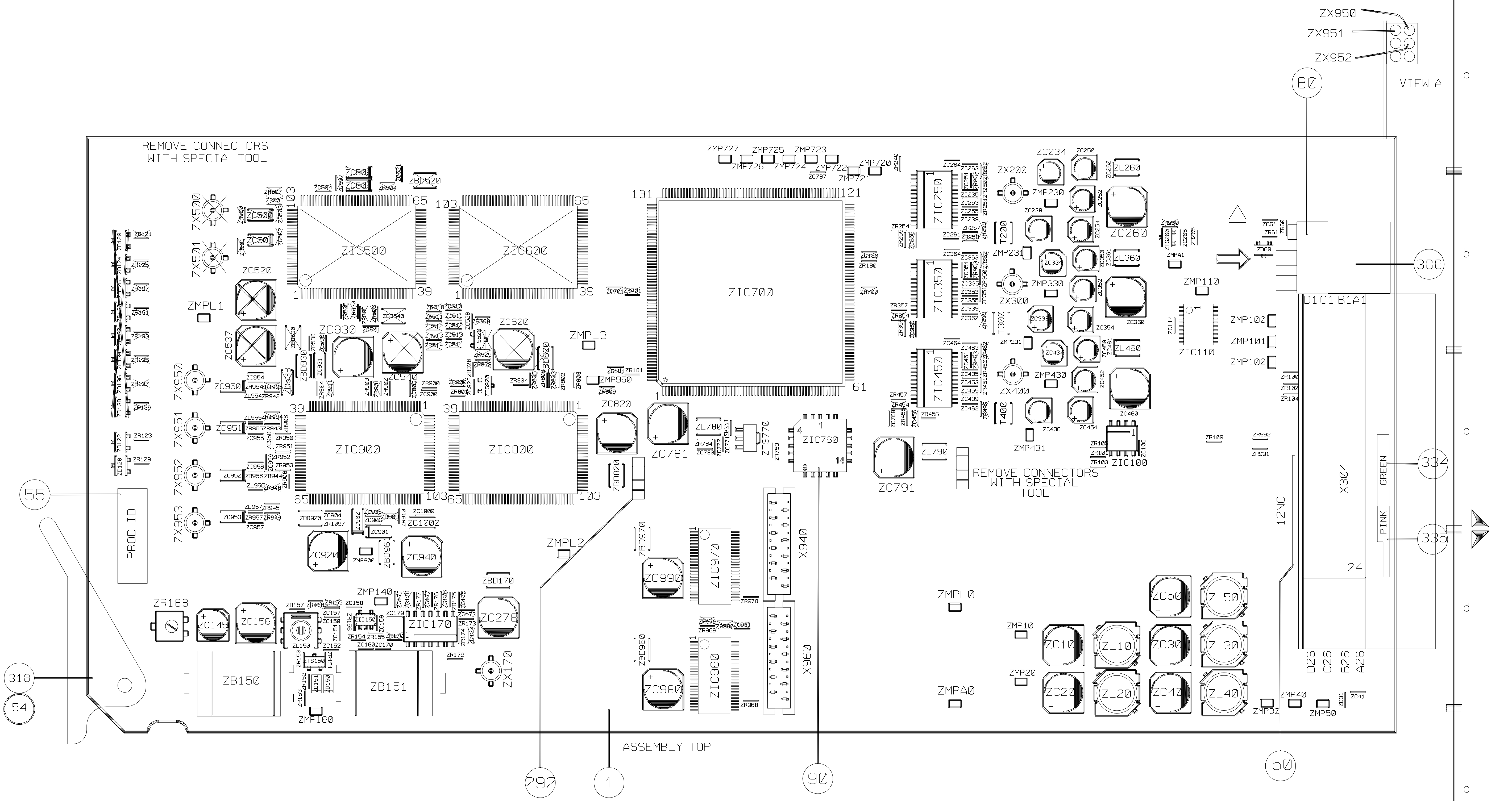


Production
Program
Cammic.
Tr/Flr.mic
Engineering
Mic.bs
Chann.Sel.
Volume Tel.
Tel.Ampl.
Prod to cam
Prod to cam ret
Progr to cam
Progr to cam ret
Cam mic
Cam mic ret
Tracker/ Floor mic
Tracker/ Floor mic ret
Eng to cam ret
Eng to cam
Eng to cam
Eng to cam ret
ZIC15 -74HCT4053D
ZIC18 74HCT4053D
ZIC12 DS1844-2
ZIC12 DS1844-4
ZIC12 DS1844-3
ZIC14 OP275
PRG-PRVD
CM-TEL
FLM-TEL
BM-TEL
MICBSOUT
TONEGEN
TEST
ENG-SEL
SIG
ZTS3 BCX56
BCX53 ZTS4
ZTR2 ACM4532-801
HOUSING
Screening
XLR5
Tuchel 5-6
Tel ret
Tel left
Tel right
R1 50KLOG
COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED
STATUS
ASS. NO: 3922 406 87820
ASS.NAME: HEADSET OPTION
PCB NO: 3922 411 87822
CIRCUIT DIAGRAM
CURR. DATE: 01-08-13
PREV. DATE: 01-05-01
NAME: B.V.D.HERIK
ORG. DATE: 00-03-31
PROPERTY OF:
4 SH
SHEET: 130-4
PHILIPS DIGITAL VIDEO SYSTEMS bv
BREDA - THE NETHERLANDS

+15V
X310-B25
STAB
ZMP2
+13
+5V
X310-B26
STAB
ZMP3
+5A
ZMP5
+4.7
+2.5
MP800
0VA
X310-C25
ZR63
MP803
0VD
X310-C26
+5VD
X310-D26
STAB
+5D
+3.3V
X310-D25
+3.3
-5V
X310-A26
STAB
ZMP5
-2.5
ZMP4
-4.7
-5A
-15V
X310-A25
STAB
ZMP7
-13
+3.3
+5D
ZTS7.8
LEVEL-SHIFT
I2C
A-SDA
X310- A7
A-SCL
X310- A8
ZIC6
EPROM
A-INT
X310-A9
INT
TDC
X310- A5
TDD
X310- A6
ZIC1
MUX
PRG-PRVD
CM-TEL
FLM-TEL
BM-TEL
+20DB
PHANT
BM-TRC
TEST
I2C
I2C FUNC.
MEASURING BUS
IC7
+13
+4.7
+2.5
-2.5
-4.7
-13
MUX
MB ENAB
SEL
S1B
ENG-SEL
INT
ZIC5
MUX
I2C
ZIC8
TONE OSC
ZIC3
ZMP19
TONE GEN
I2C
ZIC3
ZIC16
X310- A1
MEASURING BUS
MB ENAB
Prod to cam
X310-D9
PRG-PRVD
ZIC15
Prog to cam
X310-D19
S1A
SEL
TEST
ZIC18
Cam mic
X310- C21
TONE GEN
ZIC12
CM-TEL
+2.5
ZIC18
TEST
ZIC18
Tracker/Floor mic
X310- C23
TONE GEN
ZIC12
FL-TEL
ZIC18
+2.5
Eng to cam
X310-D16
ENG-TEL MB-TEL
ZD4 NM
ZR132
+2.5
SIDE TONE
MIC.BS
ZIC12
ZIC18
TEL. AMPL.
ZTS3.4.ZIC14
SUM BUFFER
R1
VOL
LOG
X314- 4B
BS TEL R
X574-5
BS TEL R
X314- 4A
BS TEL L
X574-4
BS TEL L
X314- 3A
BS TEL RET
X574-3
BS TEL RET
BS MIC
X574-2
X314-1A
BS MIC RET
X574-1
X314-1B
ZIC10
ZMP1
+20DB
ZIC11
LIMITER
GAIN SET
ZMP807
+13
PHANT
ZIC9
PHANT. LEVEL
ZIC9
GAIN SWITCH
ZIC12
LIM LEVEL
ZMP111
TONE-GEN
TEST
ZIC16
ZIC13
X310- B22
MIC BS
ZIC16
ZIC13
ZIC13
X310-C8
MIC BS SW
BM-TRC
FILTER 6KHz

ASS. NO: 3922 406 87820	
ASS.NAME:HEADSET OPTION	
BLOCK DIAGRAM	CURR. DATE: 01-08-13
	PREV. DATE: 00-02-14
NAME: B.V.D.HERIK	ORG. DATE: 99-03-24
PROPERTY OF:	2 SH SHEET: 136-1
PHILIPS DIGITAL VIDEO SYSTEMS bv BREDA - THE NETHERLANDS	

THOMSON MULTIMEDIA BROADCAST SOLUTIONS



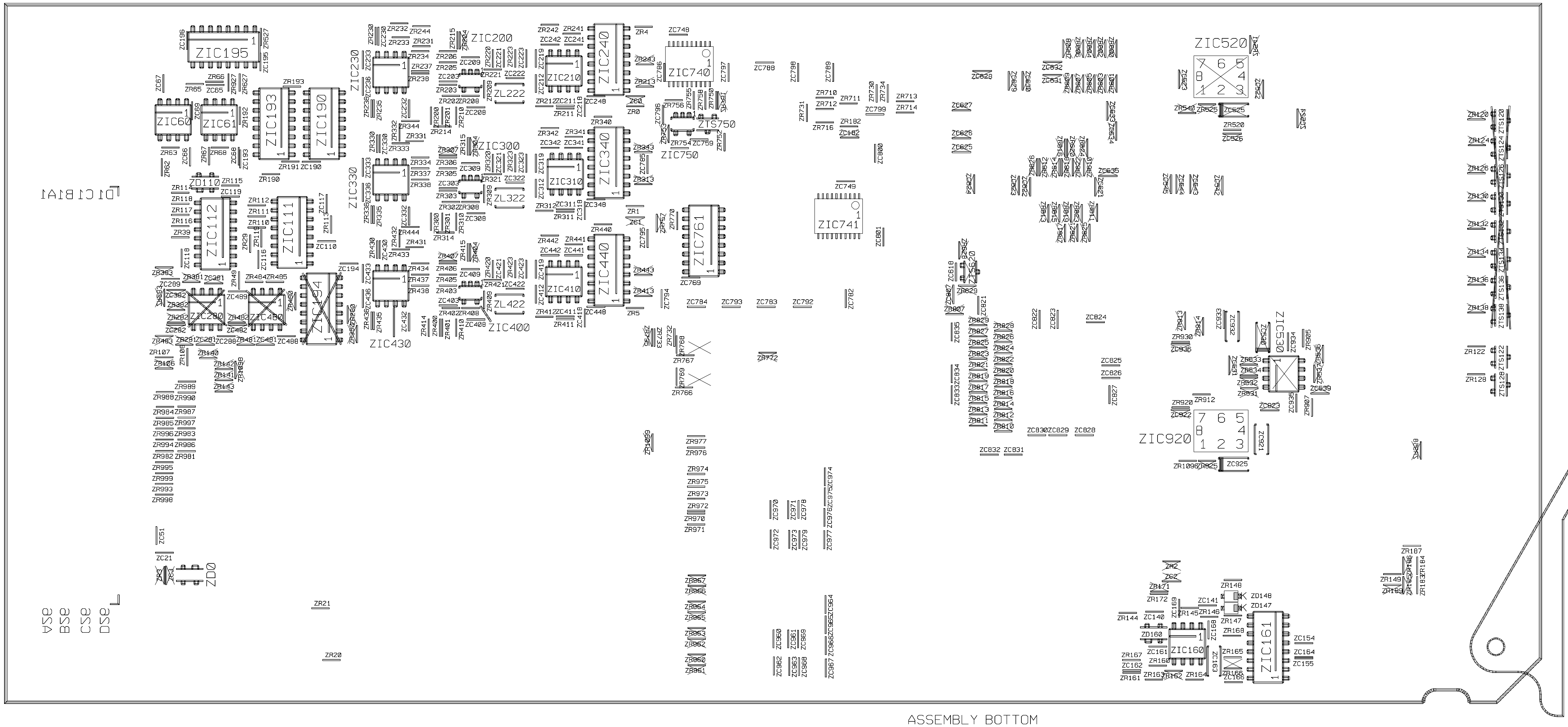
STATUS : 00

ASS. 12NC: 3922 406 89870
ASS. NAME: DIG. OUTP. HD BS
PCB 12NC.: 3922 411 88613

ASSEMBLY TOP	CURR. DATE: 02-04-08
SCALE 1.5:1	PREV. DATE: 02-04-08
R. VOET	ORG. DATE: 02-04-08
PROPERTY OF :	SHEET: 110-1

THOMSON MULTIMEDIA BROADCAST SOLUTIONS
– BREDA – THE NETHERLANDS

THOMSON MULTIMEDIA BROADCAST SOLUTIONS



ASSEMBLY BOTTOM

STATUS : 00

ASS. 12NC: 3922 406 89870
ASS. NAME: DIG. OUTP. HD BS
PCB 12NC.: 3922 411 88613

ASSEMBLY BOTTOM	CURR. DATE: 02-04-08
SCALE 1.5:1	PREV. DATE: 02-04-08
R. VOET	ORG. DATE: 02-04-08
PROPERTY OF :	SHEET: 110-2

THOMSON MULTIMEDIA BROADCAST SOLUTIONS
– BREDA – THE NETHERLANDS

THOMSON MULTIMEDIA BROADCAST SOLUTIONS

PLD

EEPROM

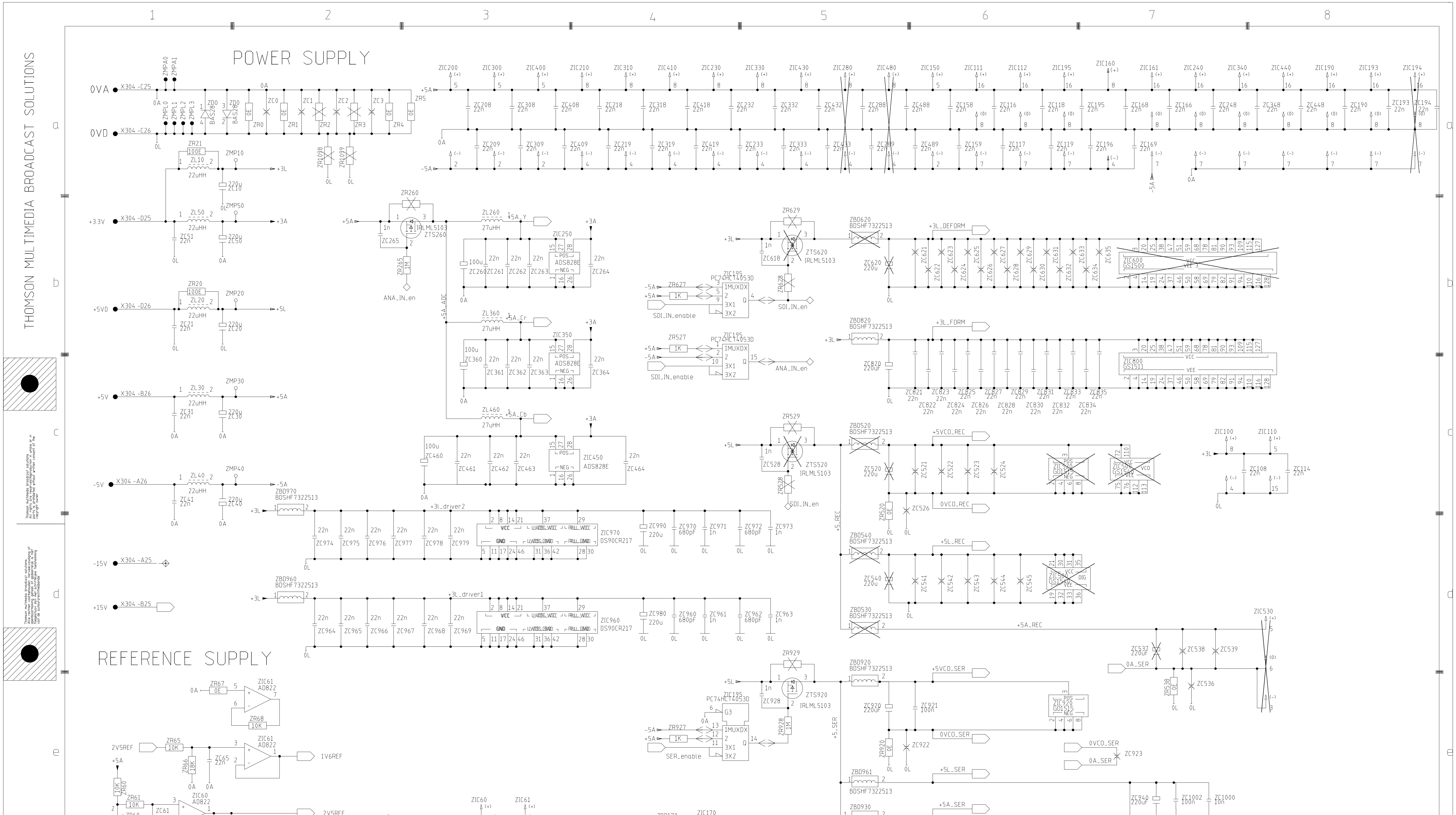
WATCHDOG

name	function	'0'	'1'
test_off	test	on	off
smpte_bar	cbar type	full field	smpte
cbar_sawn	test signal type	sawtooth	cbar
ser_enable	serializer power	off	on
analog_source	source	digital	analog
oe_292_par	not used	-	-
bst_shift_not	bst adc setup	on	off
bst_zeros	bst setup direction	all 1's	all 0's

COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED

ASS.NO:	3922 406 89870
ASS.NAME:	DIG.OUTP.HD-BASEST.
STATUS:	09
PCB.NO:	3922 411 88613
CIRCUIT DIAGRAM	CURR. DATE: 2002-04-08
	PREV. DATE: 2002-04-08
R.VOET	ORG. DATE: 2002-04-08
PROPERTY OF:	8 SHEET 130 - 8

THOMSON MULTIMEDIA BROADCAST SOLUTIONS
BREDA - THE NETHERLANDS


THOMSON MULTIMEDIA BROADCAST SOLUTIONS
POWER SUPPLY
REFERENCE SUPPLY
0VA
0VD
+3.3V
+5VD
+5V
-5V
-15V
+15V
2V5REF
1V6REF
+V6REF
MEASURING_BUS
+5A_Y
+5A_Cr
+5A_Cb
+3L_DEFORM
+3L_FORM
+5VCO_REC
0VCO_REC
+5L_REC
+5A_REC
+5VCO_SER
0VCO_SER
+5L_SER
+5A_SER
0A_SER
+3L_OSC
+3L_driver1
+3L_driver2
SDI_IN_enable
SDI_IN_en
ANA_IN_en
SER_enable
IRLML5103
BDSHF7322513
DS90CR217
ADS828E
AD822
LM4040
PC74HCT4053D
GS1500
GS1511
GS1522
GO1515

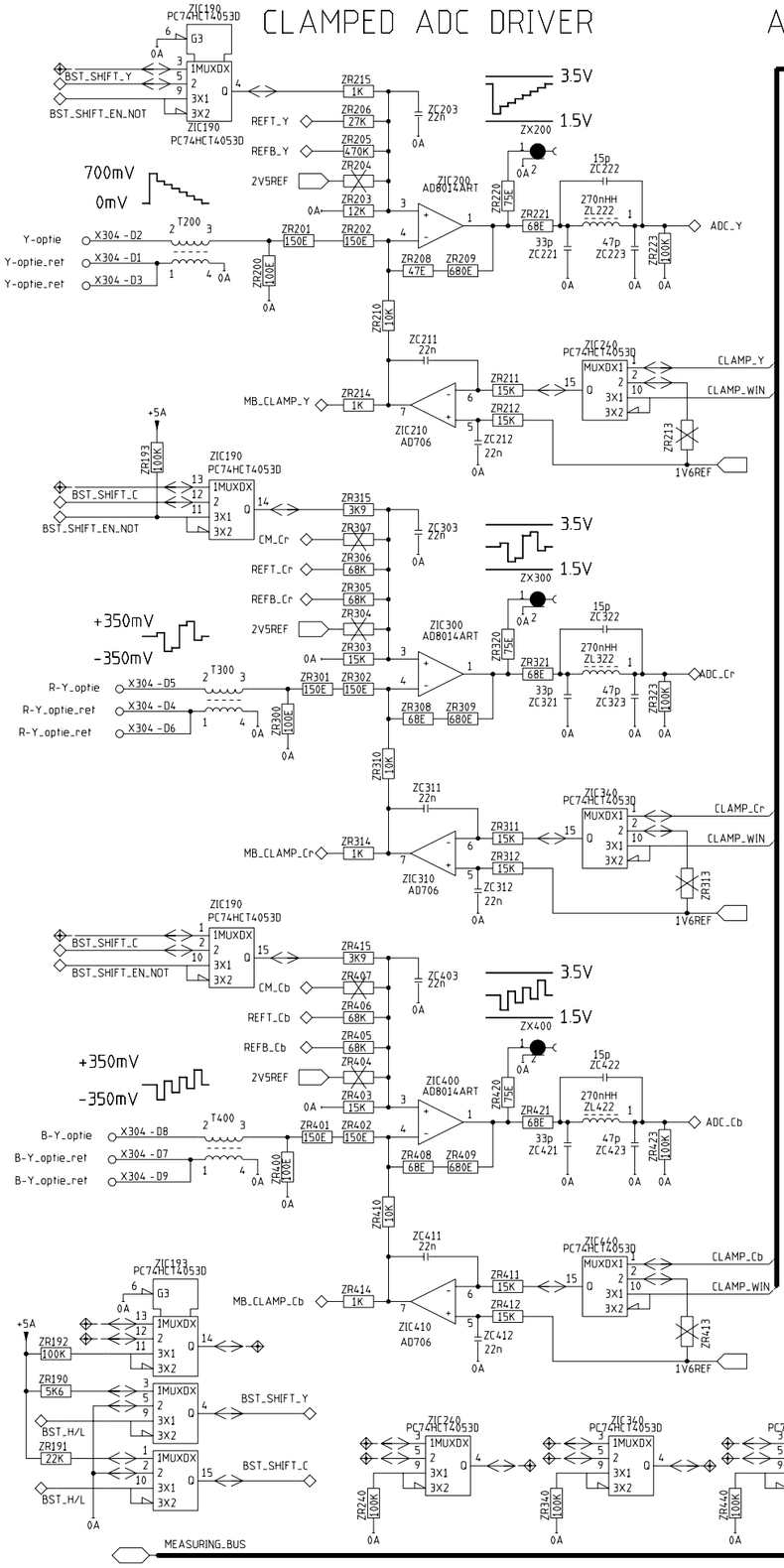
COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED

ASS.NO:	3922 406 89870
ASS.NAME:	DIG.OUTP.HD-BASEST.
STATUS:	00
PCB.NO:	3922 411 88613
CIRCUIT DIAGRAM	CURR. DATE: 2002-04-08
	PREV. DATE: 2002-04-08
R.VOET	ORG. DATE: 2002-04-08
PROPERTY OF: 8	SHEET 130 - 1

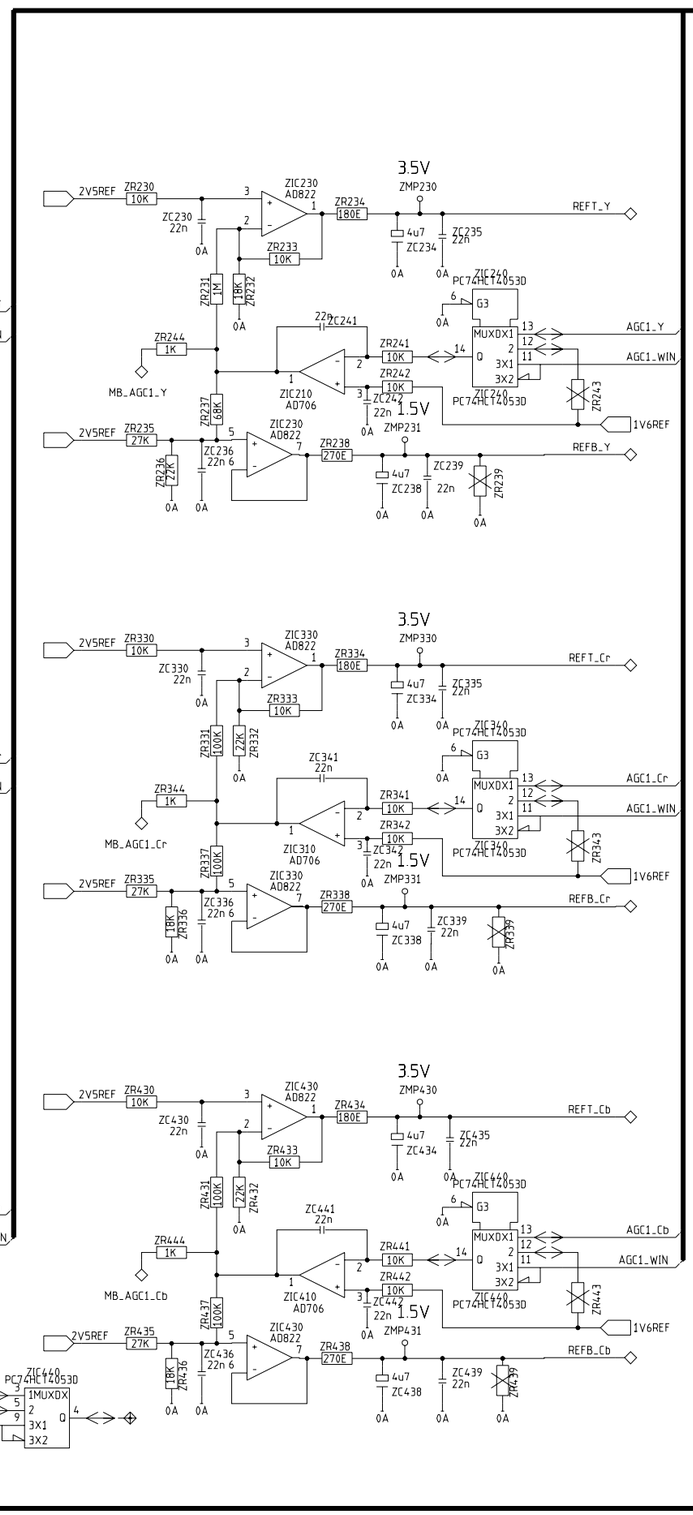
THOMSON MULTIMEDIA BROADCAST SOLUTIONS
BREDA - THE NETHERLANDS

THOMSON MULTIMEDIA BROADCAST SOLUTIONS

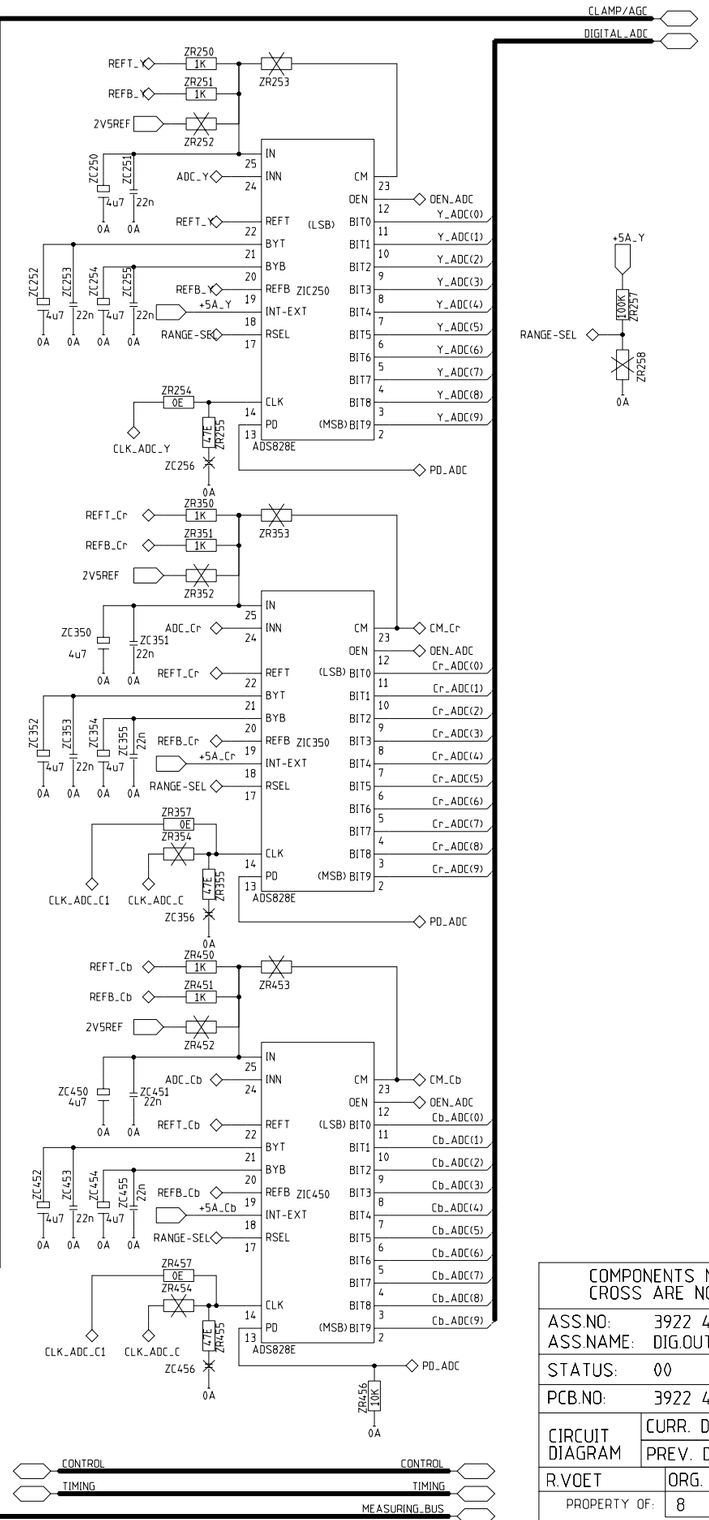
CLAMPED ADC DRIVER



ADC REFERENCE / GAIN CONTROL



AD CONVERSION



COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED

ASS.NO:	3922 406 89870
ASS.NAME:	DIG.OUTP.HD-BASEST.
STATUS:	00
PCB.NO:	3922 411 88613
CIRCUIT DIAGRAM	CURR. DATE: 2002-04-08
	PREV. DATE: 2002-04-08
R.VOET	ORG. DATE: 2002-04-08
PROPERTY OF: 8	SHEET 130 - 2

THOMSON MULTIMEDIA BROADCAST SOLUTIONS
BREDA - THE NETHERLANDS

THOMSON MULTIMEDIA BROADCAST SOLUTIONS

CLAMP/AGC
DIGITAL_ADC

CLAMP/AGC
DIGITAL_ADC
CONTROL_DEFORM
DIGITAL_DEFORMATTER
SIGNALLING
DIGITAL_ANC_DATA

SERIAL DIGITAL RECEIVER

DIGITAL_RECEIVER

HD_SDI_Tx1
HD_SDI_Tx2
ZX500
ZX501
ZC500 4u7
ZC501 4u7
ZC502
ZC503
ZR500
ZR501
0VCO_REC

ZIC500 GS1540

DDI
DDI_VTT
DDI_NOT
PLCAP
PLCAP_NOT
LFS
LFS_NOT
LBCONT
SDO_EN_NOT
BYPASS_NOT
VCO
VCO_NOT
PLL_LOCK
IJI
DM
DM_NOT
PCLK_OUT
SDO
SDO_NOT
LFA

DATA_OUT(19) MSB … DATA_OUT(0) LSB
YC_REC(19) … YC_REC(0)

ZC504 1u6
ZC505 1u6
ZC506 1u6
ZC507
ZR504
ZR505
ZR506
ZR507
ZR508
0L
+5VCO_REC
+5L_REC

PLL_LOCK_REC
MB_IJI_REC
ZR541
CLK_DEFORM
CLK_PLD
CLK_FORM
CLK_SER
CLK_LVDS
ZR510
ZR511
ZR512
ZR513
ZR514
ZC510
ZC511
ZC512
ZC513
ZC514

VCO_REC
ZIC520 GO1515
VCO
OUT
Vctr
LFA_REC
ZR525
ZR540
ZC525 1u6
0VCO_REC
MB_VCO_REC

SERIAL DIGITAL DEFORMATTER

+3L_DEFORM
MUTE_NOT
TRS_INS_DEFORM
LN_INS_DEFORM
CRC_INS_DEFORM
OEN_NOT
ZR600 … ZR625
0L

ZIC600 GS1500

YC_REC(19) … YC_REC(0)

DATA_IN(19) MSB … DATA_IN(0) LSB

CLK_DEFORM
PCLK_IN
MUTE_NOT
FW_EN/DIS_NOT
CODE_PROTECT
BP_FR
BP_DSC
WB_NI
TRS_Y/C_NOT
TRS_INS
LN_INS
CRC_INS
FAST_LOCK
RESET_NOT
TEST
TN_NOT
OEN_NOT
F_E/S_NOT
R_CLK
FOEN_NOT
FFRST_NOT
WEN_NOT
REN_NOT
ANC_DATA_NOT
FM_V/E_NOT
ANC_Y/C_NOT
EAV/CP_NOT

RESET_NOT
ZR626
+3L_DEFORM

F_E/S_NOT
R_CLK
FFRST_NOT
WEN_NOT
REN_NOT

DATA_OUT(19) MSB … DATA_OUT(0) LSB
LUMA
CHROMA

Y_DEFORM(9) … Y_DEFORM(0)
C_DEFORM(9) … C_DEFORM(0)
H_DEFORM
V_DEFORM
F_DEFORM
LN_ERR
SAV_ERR
EAV_ERR
YCS_ERR
CCS_ERR
LINE_CRC_ERR_Y
LINE_CRC_ERR_C
VD_STD(3) … VD_STD(0)
ANC_DATA(9) … ANC_DATA(0)
FF_STA(2) … FF_STA(0)
FIFO_L_NOT
ANC_DATA_Y
ANC_DATA_C

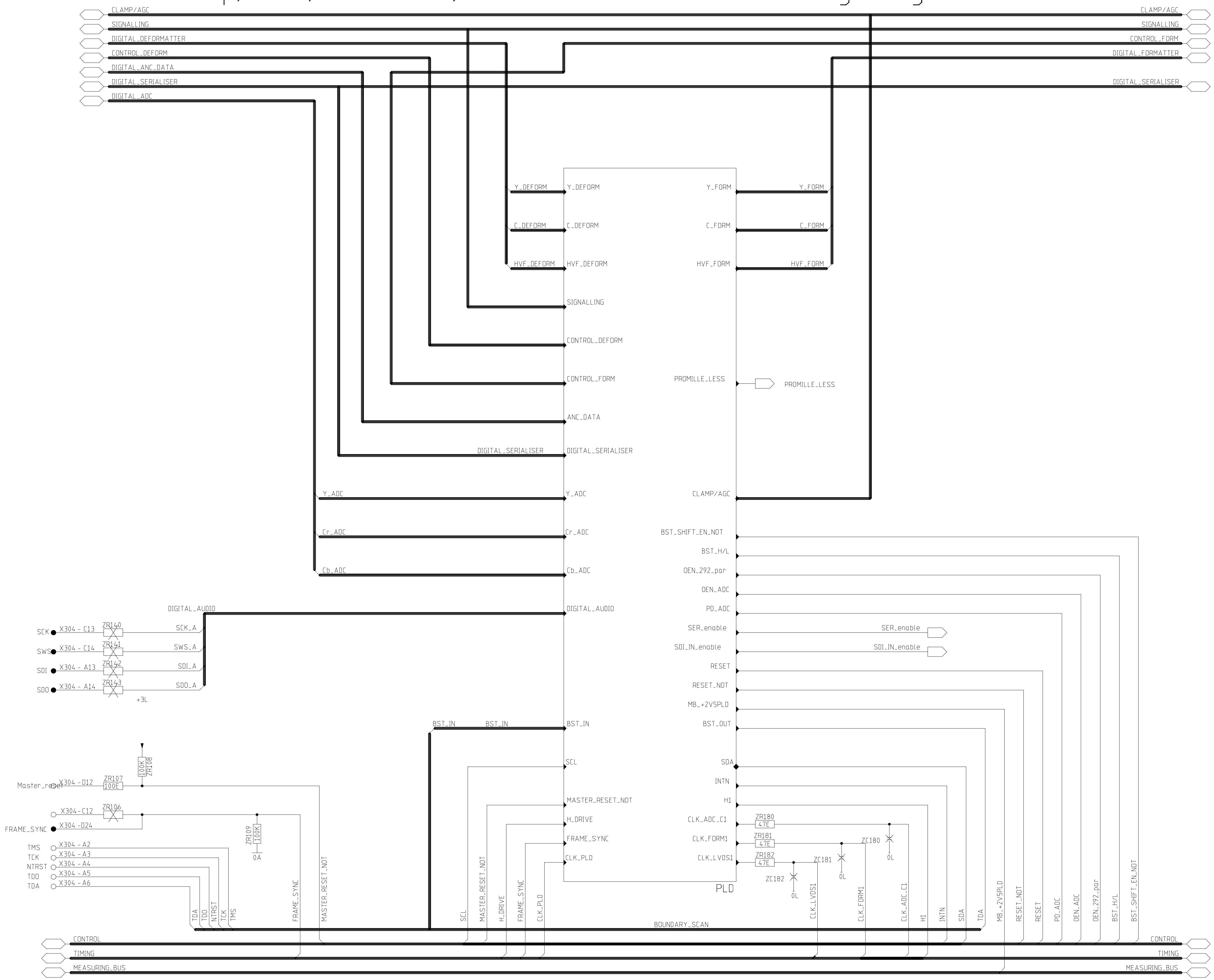
SERIAL DIGITAL CABLE DRIVER

0A_SER
ZR530
ZR531
ZR532
ZR533
ZR534
ZC530 1u6
ZC531
ZIC530 GS1508
RSET
BIAND. REF. & BIAS. CIRC
SDI
SDI_NOT
SDO
SDO_NOT
ZR535 SDO_1
ZR536 SDO_2
ZR537 SDO_3

CONTROL
TIMING
MEASURING_BUS

COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED		
ASS.NO:	3922 406 89870	
ASS.NAME:	DIG.OUTP.HD-BASEST.	
STATUS:	00	
PCB.NO:	3922 411 88613	
CIRCUIT DIAGRAM	CURR. DATE:	2002-04-08
	PREV. DATE:	2002-04-08
R.VOET	ORG. DATE:	2002-04-08
PROPERTY OF:	8	SHEET 130 - 3
THOMSON MULTIMEDIA BROADCAST SOLUTIONS BREDA - THE NETHERLANDS		

PLD (clamp, AGC, CbCr mux, source select and test signal generator)



CLAMP/AGC
SIGNALLING
DIGITAL_DEFORMATTER
CONTROL_DEFORM
DIGITAL_ANC_DATA
DIGITAL_SERIALISER
DIGITAL_ADC
CONTROL_FORM
DIGITAL_FORMATTER
Y_DEFORM
C_DEFORM
HVF_DEFORM
SIGNALLING
CONTROL_DEFORM
CONTROL_FORM
ANC_DATA
DIGITAL_SERIALISER
Y_ADC
Cr_ADC
Cb_ADC
DIGITAL_AUDIO
BST_IN
SCL
MASTER_RESET_NOT
H_DRIVE
FRAME_SYNC
CLK_PLD
Y_FORM
C_FORM
HVF_FORM
PROMILLE_LESS
BST_SHIFT_EN_NOT
BST_H/L
OEN_292_par
OEN_ADC
PD_ADC
SER_enable
SDI_IN_enable
RESET
RESET_NOT
MB_+2V5PLD
BST_OUT
SDA
INTN
H1
CLK_ADC_C1
CLK_FORM1
CLK_LVDS1
PLD
SCK
SWS
SDI
SDO
X304 - C13
X304 - C14
X304 - A13
X304 - A14
ZR140
ZR141
ZR142
ZR143
SCK_A
SWS_A
SDI_A
SDO_A
+3L
Master_reset
X304 - D12
ZR107
100E
ZR108
100K
X304 - C12
X304 - D24
ZR106
FRAME_SYNC
ZR109
100K
0A
TMS
TCK
NTRST
TDO
TDA
X304 - A2
X304 - A3
X304 - A4
X304 - A5
X304 - A6
ZR180
47E
ZR181
47E
ZR182
47E
ZC180
ZC181
ZC182
0L
BOUNDARY_SCAN
CONTROL
TIMING
MEASURING_BUS
THOMSON MULTIMEDIA BROADCAST SOLUTIONS

COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED

ASS.NO:	3922 406 89870
ASS.NAME:	DIG.OUTP.HD-BASEST.
STATUS:	00
PCB.NO:	3922 411 88613
CIRCUIT DIAGRAM	CURR. DATE: 2002-04-08
	PREV. DATE: 2002-04-08
R.VOET	ORG. DATE: 2002-04-08
PROPERTY OF: 8	SHEET 130 - 4

THOMSON MULTIMEDIA BROADCAST SOLUTIONS
BREDA - THE NETHERLANDS

THOMSON MULTIMEDIA BROADCAST SOLUTIONS

SERIAL DIGITAL FORMATTER

LVDS DRIVERS

CLAMP/AGC
SIGNALLING
DIGITAL_SERIALISER
DIGITAL_FORMATTER
CONTROL_FORM
TIMING

Y_FORM(9) ZR810 YC_SER(19)
Y_FORM(8) ZR811 YC_SER(18)
Y_FORM(7) ZR812 YC_SER(17)
Y_FORM(6) ZR813 YC_SER(16)
Y_FORM(5) ZR814 YC_SER(15)
Y_FORM(4) ZR815 YC_SER(14)
Y_FORM(3) ZR816 YC_SER(13)
Y_FORM(2) ZR817 YC_SER(12)
Y_FORM(1) ZR818 YC_SER(11)
Y_FORM(0) ZR819 YC_SER(10)
C_FORM(9) ZR820 YC_SER(9)
C_FORM(8) ZR821 YC_SER(8)
C_FORM(7) ZR822 YC_SER(7)
C_FORM(6) ZR823 YC_SER(6)
C_FORM(5) ZR824 YC_SER(5)
C_FORM(4) ZR825 YC_SER(4)
C_FORM(3) ZR826 YC_SER(3)
C_FORM(2) ZR827 YC_SER(2)
C_FORM(1) ZR828 YC_SER(1)
C_FORM(0) ZR829 YC_SER(0)

ZIC800 GS1511

Y_FORM(9)	103	DATA_IN(19)	MSB	DATA_OUT(19)	64 YC_SER(19)
Y_FORM(8)	104	DATA_IN(18)		DATA_OUT(18)	63 YC_SER(18)
Y_FORM(7)	105	DATA_IN(17)		DATA_OUT(17)	62 YC_SER(17)
Y_FORM(6)	106	DATA_IN(16)		DATA_OUT(16)	61 YC_SER(16)
Y_FORM(5)	107	DATA_IN(15)		DATA_OUT(15)	60 YC_SER(15)
Y_FORM(4)	108	DATA_IN(14)		DATA_OUT(14)	57 YC_SER(14)
Y_FORM(3)	111	DATA_IN(13)		DATA_OUT(13)	56 YC_SER(13)
Y_FORM(2)	112	DATA_IN(12)		DATA_OUT(12)	55 YC_SER(12)
Y_FORM(1)	113	DATA_IN(11)		DATA_OUT(11)	54 YC_SER(11)
Y_FORM(0)	114	DATA_IN(10)	LSB	DATA_OUT(10)	53 YC_SER(10)
C_FORM(9)	117	DATA_IN(9)	MSB	DATA_OUT(9)	52 YC_SER(9)
C_FORM(8)	118	DATA_IN(8)		DATA_OUT(8)	49 YC_SER(8)
C_FORM(7)	119	DATA_IN(7)		DATA_OUT(7)	48 YC_SER(7)
C_FORM(6)	120	DATA_IN(6)		DATA_OUT(6)	45 YC_SER(6)
C_FORM(5)	121	DATA_IN(5)		DATA_OUT(5)	44 YC_SER(5)
C_FORM(4)	122	DATA_IN(4)		DATA_OUT(4)	43 YC_SER(4)
C_FORM(3)	123	DATA_IN(3)		DATA_OUT(3)	42 YC_SER(3)
C_FORM(2)	124	DATA_IN(2)		DATA_OUT(2)	41 YC_SER(2)
C_FORM(1)	125	DATA_IN(1)		DATA_OUT(1)	40 YC_SER(1)
C_FORM(0)	126	DATA_IN(0)	LSB	DATA_OUT(0)	39 YC_SER(0)

LUMA: DATA_IN(19) MSB … DATA_IN(10) LSB
CHROMA: DATA_IN(9) MSB … DATA_IN(0) LSB

	1	PCLK_IN
H_FORM	21	H
V_FORM	22	V
F_FORM	23	F
CODE_PROTECT	8	CODE_PROTECT
BLANK_NOT	6	BLANK_NOT
ZR806	36	OEN_NOT
RESET IE	11	SRST
	10	BP_SC
DET_TRS	5	DET_TRS
	12	TRS_Y/C
TRS_INS_FORM	13	TRS_INS
LN_INS_FORM	15	LN_INS
CRC_INS_FORM	16	CRC_INS
RSTLN	9	RSTLN_NOT

+3L_FORM
ZR800 ZR802 100K ZR804 100K
ZR801 100K ZR803 ZR805
0L 0L 0L

ZR807
ZC807
0L

+3L_FORM
35 18 99 102 76 77 80 83 84 85 86 87 88 89 92 95 96 97 98 100 101
VDD
ZIC800 GS1511 GND
7 17 70
0L

ZR808 0E ZR809
CLK_FORM CLK_FORM1

CONTROL
TIMING
MEASURING_BUS

CLK_LVDS1
ZR979
ZR969 0E CLK_LVDS

ZIC970 DS90CR217

+3L ZR978 100K
27 PWRDWNN
26 TXCLKIN
PLL
TXCLKOUT+ 32
TXCLKOUT- 33
TXOUT2+ 34
TXOUT2- 35
TXOUT1+ 38
TXOUT1- 39
TXOUT0+ 40
TXOUT0- 41

LVDS_SPARE(1)	25	TXIN20
YC_SER(19)	23	TXIN19
YC_SER(18)	22	TXIN18
YC_SER(17)	20	TXIN17
YC_SER(16)	19	TXIN16
YC_SER(15)	18	TXIN15
YC_SER(14)	16	TXIN14
YC_SER(13)	15	TXIN13
YC_SER(12)	13	TXIN12
YC_SER(11)	12	TXIN11
YC_SER(10)	10	TXIN10
YC_SER(9)	9	TXIN9
YC_SER(8)	7	TXIN8
YC_SER(7)	6	TXIN7
YC_SER(6)	4	TXIN6
YC_SER(5)	3	TXIN5
YC_SER(4)	1	TXIN4
YC_SER(3)	48	TXIN3
YC_SER(2)	47	TXIN2
YC_SER(1)	45	TXIN1
YC_SER(0)	44	TXIN0

TTL PARALLEL 10 BIT LVDS

TO SDTV OUTPUT HD BASESTATION BOARD

ZR970 0 X304 -C17 YC_292-6
ZR971 0 X304 -C18 YC_292-6_ret
ZR972 0 X304 -D16 YC_292-7
ZR973 0 X304 -D15 YC_292-7_ret
ZR974 0 X304 -C15 YC_292-8
ZR975 0 X304 -C16 YC_292-8_ret
ZR976 0 X304 -D14 YC_292-9
ZR977 0 X304 -D13 YC_292-9_ret
X940 -2 1-CLK-
X940 -1 1-CLK+
X940 -11 1-OUT0-
X940 -10 1-OUT0+
X940 -8 1-OUT1-
X940 -7 1-OUT1+
X940 -5 1-OUT2-
X940 -4 1-OUT2+
0L X940 -3 0L
X940 -6 0L
X940 -9 0L
X940 -12 0L

ZIC960 DS90CR217

+3L ZR968 100K
27 PWRDWNN
26 TXCLKIN
PLL
TXCLKOUT+ 32
TXCLKOUT- 33
TXOUT2+ 34
TXOUT2- 35
TXOUT1+ 38
TXOUT1- 39
TXOUT0+ 40
TXOUT0- 41

LVDS_SPARE(2)	25	TXIN20
YC_SER(19)	23	TXIN19
YC_SER(18)	22	TXIN18
YC_SER(17)	20	TXIN17
YC_SER(16)	19	TXIN16
YC_SER(15)	18	TXIN15
YC_SER(14)	16	TXIN14
YC_SER(13)	15	TXIN13
YC_SER(12)	13	TXIN12
YC_SER(11)	12	TXIN11
YC_SER(10)	10	TXIN10
YC_SER(9)	9	TXIN9
YC_SER(8)	7	TXIN8
YC_SER(7)	6	TXIN7
YC_SER(6)	4	TXIN6
YC_SER(5)	3	TXIN5
YC_SER(4)	1	TXIN4
YC_SER(3)	48	TXIN3
YC_SER(2)	47	TXIN2
YC_SER(1)	45	TXIN1
YC_SER(0)	44	TXIN0

TTL PARALLEL 10 BIT LVDS

ZR980
ZC981
0L

TO SYNC ENCODER HD BASESTATION BOARD

ZR960 X304 -C23 YC_292-0
ZR961 X304 -C24 YC_292-0_ret
ZR962 X304 -D22 YC_292-1
ZR963 X304 -D21 YC_292-1_ret
ZR964 X304 -C21 YC_292-2
ZR965 X304 -C22 YC_292-2_ret
ZR966 X304 -D20 YC_292-3
ZR967 X304 -D19 YC_292-3_ret
X960 -2 2-CLK-
X960 -1 2-CLK+
X960 -11 2-OUT0-
X960 -10 2-OUT0+
X960 -8 2-OUT1-
X960 -7 2-OUT1+
X960 -5 2-OUT2-
X960 -4 2-OUT2+
0L X960 -3 0L
X960 -6 0L
X960 -9 0L
X960 -12 0L

ZR981 0L 100K X304 -A19 YC_292-14
ZR982 0L 100K X304 -A20 YC_292-14_ret
ZR983 0L 100K X304 -B18 YC_292-15
ZR984 0L 100K X304 -B17 YC_292-15_ret
ZR985 0L 100K X304 -A17 YC_292-16
ZR986 0L 100K X304 -A18 YC_292-16_ret
ZR987 0L 100K X304 -B16 YC_292-17
ZR988 0L 100K X304 -B15 YC_292-17_ret
ZR989 0L 100K X304 -A15 YC_292-18
ZR990 0L 100K X304 -A16 YC_292-18_ret
ZR991 0L 100K X304 -B14 YC_292-19
ZR992 0L 100K X304 -B13 YC_292-19_ret
ZR993 0L 100K X304 -D23 YC_292_clk0-ret
ZR994 0L 100K X304 -C19 YC_292-4
ZR995 0L 100K X304 -C20 YC_292-4_ret
ZR996 0L 100K X304 -D18 YC_292-5
ZR997 0L 100K X304 -D17 YC_292-5_ret
ZR998 0L 100K X304 -B24 YC_292_clk1
ZR999 0L 100K X304 -B23 YC_292_clk1_ret

CONTROL
TIMING
MEASURING_BUS

COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED

ASS.NO:	3922 406 89870
ASS.NAME:	DIG.OUTP.HD-BASEST.
STATUS:	00
PCB.NO:	3922 411 88613
CIRCUIT DIAGRAM	CURR. DATE: 2002-04-08
	PREV. DATE: 2002-04-08
R.VOET	ORG. DATE: 2002-04-08
PROPERTY OF:	8 SHEET 130 - 5

THOMSON MULTIMEDIA BROADCAST SOLUTIONS
BREDA - THE NETHERLANDS

THOMSON MULTIMEDIA BROADCAST SOLUTIONS

TIMING
SIGNALLING
SIGNALLING

74MHz OSCILLATOR

4V6REF — ZR157 10E — ZC156 220u — ZC157 22n — ZL150 220nH — ZC150 220p — ZC151 47p — ZC152 47p
+5A — ZR158
+3L_OSC — ZR159
ZR150 3E3 — ZTS150 BFS19N — ZR151 680E
BA792 ZD150 — BA792 ZD151
7.425MHZ — ZB151 — ZR147 100K — ZR146 100K — ZR148 100K — BB147 ZD147 — BB147 ZD148
7.41758MHZ — ZB150
ZR152 680E — ZR153 680E — ZC141 220p — ZMP140
ZR154 10E — ZR155 1K — ZR156 1K — ZIC150 AD8014ART
ZR144 1K — ZR145 10K — ZC140 1n
ZC145 22u — PROMILLE_LESS

CLOCK BUFFER

+3L_OSC — ZC170 1n — ZR170 — ZR171 0L — ZR172 100K
ZIC170 74AC04SC
ZR173 47E — ZC173 0L — CLK_FORM
ZR174 47E — ZC174 0L — CLK_PLD
ZR175 47E — ZC175 0L — CLK_SER
ZR176 47E — ZC176 0L — CLK_LVDS
ZR177 47E — ZC177 0L — CLK_ADC_Y
ZR178 — ZC178 0L — CLK_ADC_C
ZR179 75E — ZX170

4V6REF — ZR149 100E — ZR183 4K7 — ZR184 4K7 — ZR185 10K LR — ZR186 — ZR187 18K — ZR188
+15V — ZR189
ZIC161 PC74HC14053D — MUXDX1 3X1 3X2
PROMILLE_LESS

ZC160 1n — ZD160 BAS28 — ZD160 BAS28

STATUS LEDS

+3L — ZR129 330E — ZR121 — ZR123 330E — ZD128 RD — ZD120 GR — ZD122 GR
+3L_DEFORM — BC860B ZTS124 — BC860B ZTS126
EPLD_ACTIVE_NOT — ZR128 22K — ZTS128 BC850N
PLL_LOCK_REC — ZR120 — ZTS120 BC850N
PLL_LOCK_SER — 22K ZR122 — ZTS122 BC850N
ZD124 GR — ZD126 GR — ZR125 0L — ZR127 0L
LINE_CRC_ERR_Y — ZR124
LINE_CRC_ERR_C — ZR126

MEASURING BUS

ZMP160 — ZC164 1n — ZR166 -5A
ZIC160 LM358D — ZR165 100E — ZC161 22n — ZR160 68K -5A — ZR162 — ZR161 4K7 2V5REF — ZC162 22n — ZR163 8K2 — ZR164 47K — ZC163 100n — ZR167 1K — MB_OSC_AGC
ZC154 1n — ZC155 1n
PROMILLE_LESS — ZIC161 PC74HCT4053D MUXDX — ZMP160
ZIC160 LM358D — MB_PLL

+5A — ZR110 100K — ZR111 100K — ZR112 100K — ZR113 100K
MBUS1-A0 — MBUS1-A1 — MBUS1-A2 — MBUS1-ON
ZIC111 PC74HC4051T MUXDX
MB_PLL
ZD110 BAS28 — ZMP110 — ZR115 100E — ZC110 22n — ZD110 BAS28 -5A

+5A — ZR116 100K — ZR117 100K — ZR118 100K — ZR119 100K
MBUS2-A0 — MBUS2-A1 — MBUS2-A2 — MBUS2-ON
ZIC112 PC74HC4051T MUXDX

MB_CLAMP_Y — MB_CLAMP_Cr — MB_CLAMP_Cb — MB_AGC1_Y — MB_AGC1_Cr — MB_AGC1_Cb — MB_VCO_REC — MB_VCO_SER — MB_IJI_REC — MB_IJI_SER — MB_+5A — MB_-5A — MB_-5L — MB_OSC_AGC — MB_+2V5PLD
MEASURING_BUS

EXTERNAL AGC

ZR114 1K — X304 -A1 — Measuring-bus
ZIC194 PC74HC14053D MUXDX
ZR280 — ZR281 — ZR282 — ZC281 — ZC280 AD706 — ZC282 — ZR283 — X304 -C7 — System_AGC_Y — 1V6REF
ZR380 — ZR381 — ZR382 — ZC381 — ZC280 AD706 — ZC382 — ZR383 — X304 -B6 — System_AGC_R-Y — 1V6REF
ZR480 — ZR481 — ZR482 — ZC481 — ZC480 AD706 — ZC482 — ZR483 — X304 -B11 — System_AGC_B-Y — 1V6REF
ZR485 0E — ZC480 AD706 — ZR484 100K

AGC2_Y — AGC2_Cr — AGC2_Cb — AGC2_WIN
CLAMP/AGC

H-drive — X304 - A12
CLKLOCK — X304 -B1

I2C

+3L — ZR101 100K — ZR103 100K — ZR105 100K — ZMP102 — ZMP101 — ZMP100
X304 - A7 — ZR100 100E
X304 - A8 — ZR102 100E
X304 - A9 — ZR104 100E
INTN — SCL — SDA
subaddress 2 — ZIC100 PCF8582C2 — A0 A1 A2 — SCL SDA PTC
subaddress 4 — ZIC110 PCF8574TS — A0 A1 A2 — P0 P1 P2 P3 P4 P5 P6 P7 — MBUS1-A0 MBUS1-A1 MBUS1-A2 MBUS1-ON MBUS2-A0 MBUS2-A1 MBUS2-A2 MBUS2-ON — SCL SDA INT — INTN
CONTROL
MEASURING_BUS
CLAMP/AGC

LN/EAV/SAV/YCS/CCS_ERR

+3L_DEFORM
LN_ERR — ZR130 — BC860B ZTS130 — ZD130 GR — ZR131
EAV_ERR — ZR132 — BC860B ZTS132 — ZD132 GR — ZR133
SAV_ERR — ZR134 — BC860B ZTS134 — ZD134 GR — ZR135
YCS_ERR — ZR136 — BC860B ZTS136 — ZD136 GR — ZR137
CCS_ERR — ZR138 — BC860B ZTS138 — ZD138 GR — ZR139

ZIC161 PC74HCT2053D — G3 — 1MUXDX 3X1 3X2 — ZR168 100K

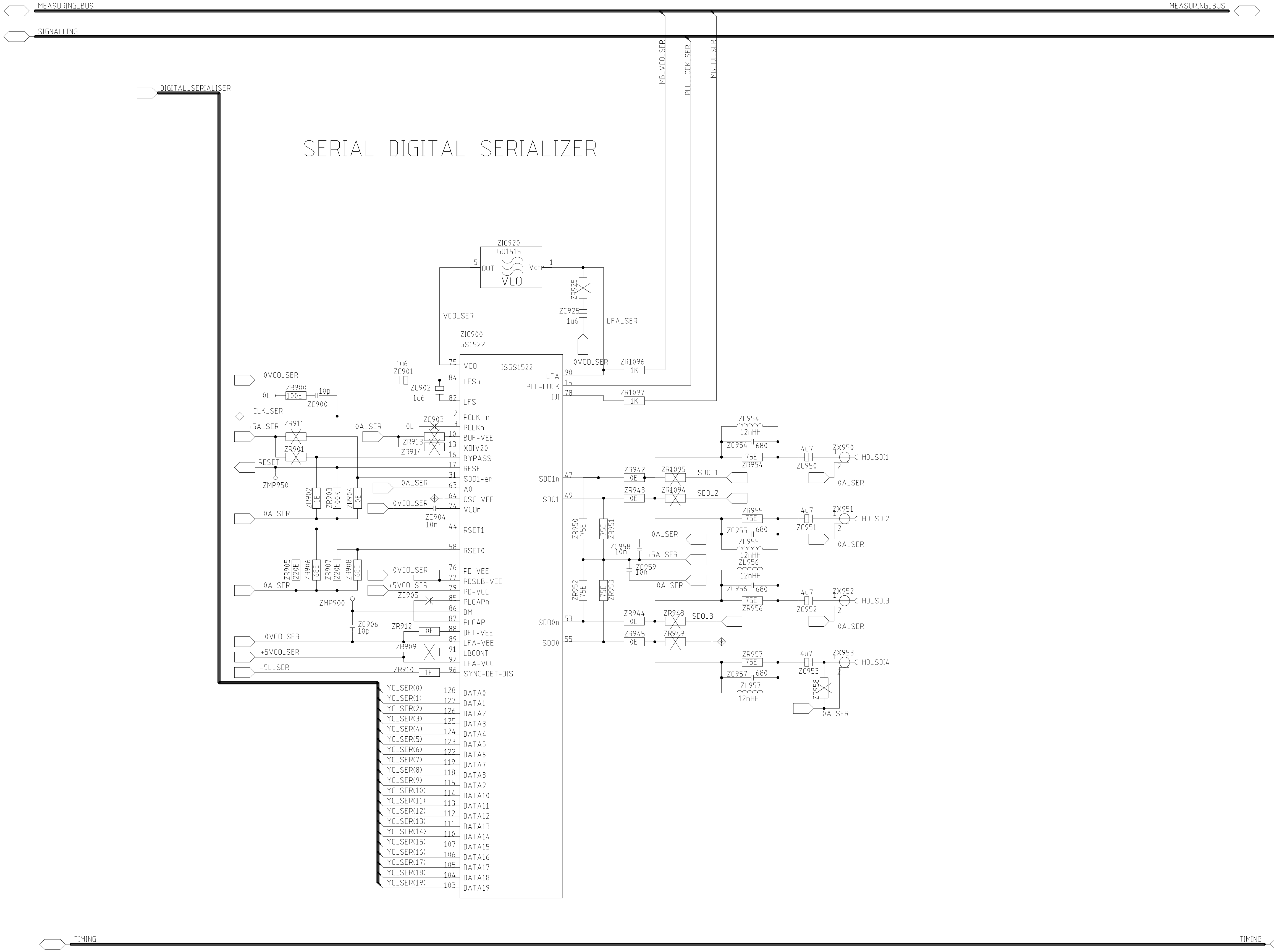
COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED

ASS.NO:	3922 406 89870
ASS.NAME:	DIG.OUTP.HD-BASEST.
STATUS:	00
PCB.NO:	3922 411 88613
CIRCUIT DIAGRAM	CURR. DATE: 2002-04-08
	PREV. DATE: 2002-04-08
R.VOET	ORG. DATE: 2002-04-08
PROPERTY OF:	8 — SHEET 130 - 6

THOMSON MULTIMEDIA BROADCAST SOLUTIONS
BREDA - THE NETHERLANDS

THOMSON MULTIMEDIA BROADCAST SOLUTIONS

SERIAL DIGITAL SERIALIZER

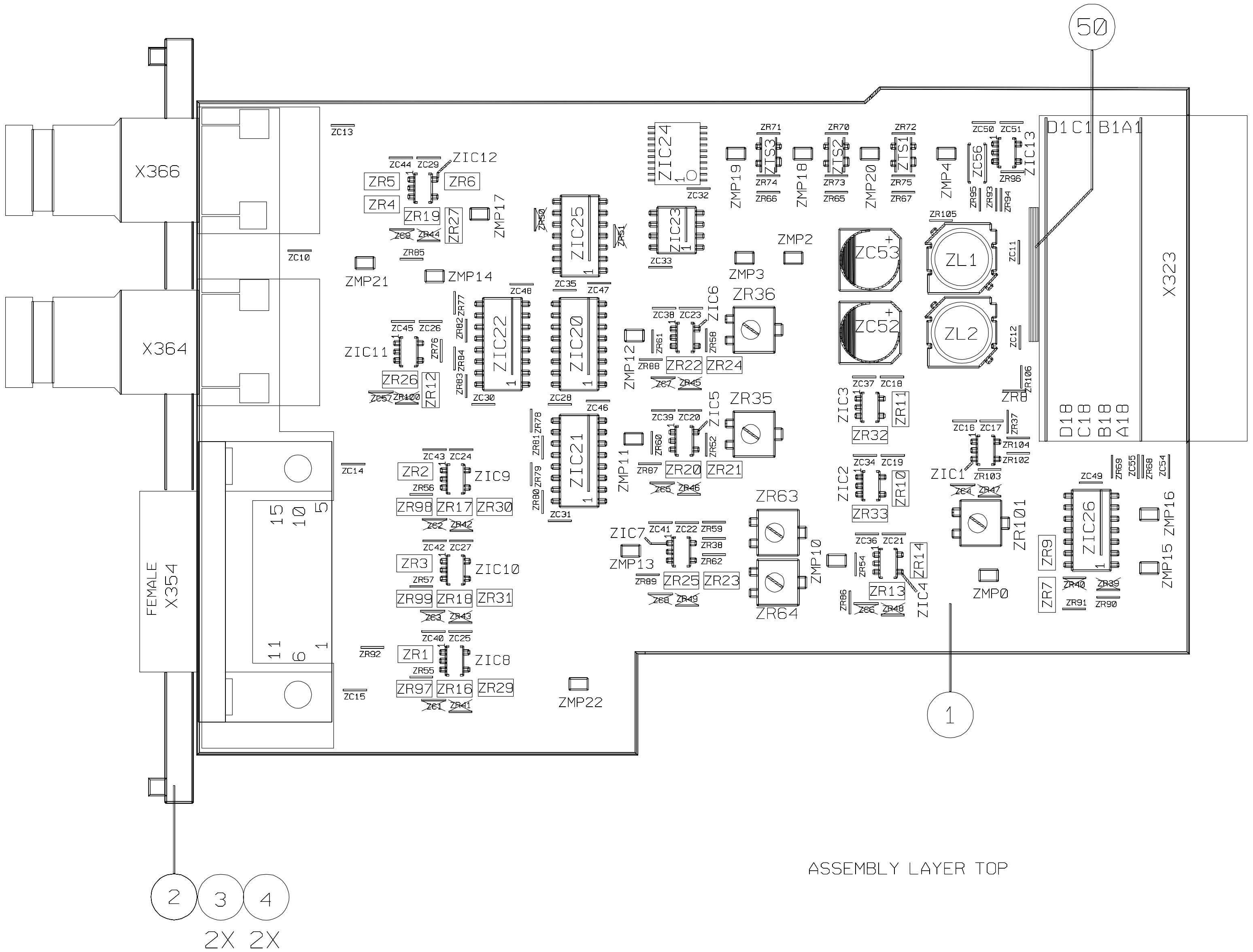


MEASURING_BUS
SIGNALLING
DIGITAL_SERIALISER
MB_VCO_SER
PLL_LOCK_SER
MB_LI_SER
ZIC920
GO1515
VCO
OUT
Vctr
ZR925
ZC925
1u6
LFA_SER
VCO_SER
ZIC900
GS1522
ISGS1522
0VCO_SER
ZR1096
1K
ZR1097
1K
LFA
PLL-LOCK
LJL
VCO
LFSn
LFS
PCLK-in
PCLKn
BUF-VEE
XDIV20
BYPASS
RESET
SDO1-en
A0
OSC-VEE
VCOn
RSET1
RSET0
PD-VEE
PDSUB-VEE
PD-VCC
PLCAPn
DM
PLCAP
DFT-VEE
LFA-VEE
LBCONT
LFA-VCC
SYNC-DET-DIS
DATA0
DATA1
DATA2
DATA3
DATA4
DATA5
DATA6
DATA7
DATA8
DATA9
DATA10
DATA11
DATA12
DATA13
DATA14
DATA15
DATA16
DATA17
DATA18
DATA19
YC_SER(0)
YC_SER(19)
CLK_SER
+5A_SER
0A_SER
+5VCO_SER
+5L_SER
ZMP950
ZMP900
SDO1n
SDO1
SDO0n
SDO0
SDO_1
SDO_2
SDO_3
HD_SDI1
HD_SDI2
HD_SDI3
HD_SDI4
ZL954
12nHH
ZX950
ZX951
ZX952
ZX953
4u7
75E
680
TIMING

COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED

ASS.NO:	3922 406 89870
ASS.NAME:	DIG.OUTP.HD-BASEST.
STATUS:	00
PCB.NO:	3922 411 88613
CIRCUIT DIAGRAM	CURR. DATE: 2002-04-08
	PREV. DATE: 2002-04-08
R.VOET	ORG. DATE: 2002-04-08
PROPERTY OF: 8	SHEET 130 - 7

THOMSON MULTIMEDIA BROADCAST SOLUTIONS
BREDA - THE NETHERLANDS



ASSEMBLY LAYER TOP

STATUS : 03	
ASS. 12NC: 3922 406 88740	
ASS. NAME: MON OPTION HD BS	
PCB 12NC.: 3922 411 88742	
ASSEMBLY TOP	CURR. DATE: 02-05-29
SCALE 1.5:1	PREV. DATE: 02-02-27
P.BOENDERS	ORG. DATE: 01-01-31
PROPERTY OF :	SHEET: 110-1
THOMSON MULTIMEDIA BROADCAST SOLUTIONS – BREDA – THE NETHERLANDS	

THOMSON MULTIMEDIA BROADCAST SOLUTIONS

THOMSON MULTIMEDIA BROADCAST SOLUTIONS

ASSEMBLY LAYER BOTTOM

STATUS : 03
ASS. 12NC: 3922 406 88740
ASS. NAME: MON OPTION HD BS
PCB 12NC.: 3922 411 88742
ASSEMBLY BOTTOM
SCALE 1.5:1
P.BOENDERS
CURR. DATE:02-05-29
PREV. DATE:02=02-27
ORG. DATE: 01-01-31
PROPERTY OF :
SHEET:110-2
THOMSON MULTIMEDIA BROADCAST SOLUTIONS
– BREDA – THE NETHERLANDS

THOMSON MULTIMEDIA BROADCAST SOLUTIONS

COMPONENTS MARKED WITH A CROSS ARE NOT MOUNTED		
ASS.NO:	3922 406 88740	
ASS.NAME:	MON OPTION HD BS	
STATUS:	03	
PCB.NO:	3922 411 88742	
CIRCUIT DIAGRAM	CURR. DATE:	2002-05-29
	PREV. DATE:	2001-02-27
P. Boenders	ORG. DATE:	2001-01-31
PROPERTY OF:	SH 01	SHEET: 130 - 01
THOMSON MULTIMEDIA BROADCAST SOLUTIONS BREDA - THE NETHERLANDS		