# LDK 5460

## TriaxHD Adapter for LDK 6000HD Series

# Technical Manual


3922 496 48831 St.01

PHILIPS

# Declaration of Conformity

We, Philips Digital Video Systems 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

# LDK 5460
# Triax HD Adapter

## Technical Manual
## 3922 496 48831

## Contents

# About This Manual

**Service policy**
The LDK 5460 is a sophisticated triax HD adaptor 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 triax adaptor 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 triax adaptor. Information on the operation of the triax adaptor is to be found in the Operator's Manual.

This technical manual is an integral part of the service policy. It ensures that you will be able to install and set-up your triax adaptor to meet the requirements of your environment. This information on the installation of the triax adaptor 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 five sections:

Section 1: Safety Information.
Contains important safety information and should be read before carrying out any work on the triax adaptor.

Section 2: Installation.
Gives instructions on the integration of the triax adaptor into the operating environment and the customization of certain hardware functions

Section 3: Replacements.
Gives information on the replacement of components at first line level.

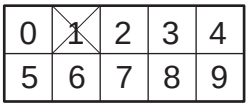
Section 4: Adjustments.
Contains the adjustment procedures to be followed to obtain the best performance from the triax adaptor.

Section 5: Wiring Diagrams
Contains the wiring diagrams of the triax adaptor.

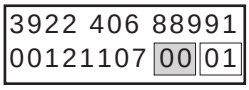
Section 6: Exploded Views
Contains the Exploded Views & Mechanical Partslist of the triax adaptor.

**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.

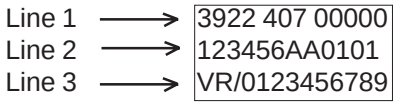



A sticker is used on the units themselves to identify them and to indicate their status. For example, in the illustration below, the top line is the 12-digit number that identifies the unit type.




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.




**Line 1**

This is the code number of the printed circuit board assy. (PCB)

**Line 2**

This is the serial number of the PCB. The first 6 digits and the 2 letters are for internal use. The last four digits reperesent the date of the manufacturing: wwyy.
Example:
123456AA1402 means the PCB is manufactured in week 14 of the year 2002.

**Line 3**

This is the status of the PCB.
The digit after the first slash is the status. If there is no number before the slash, it means that the status is less than 10, a 1 before the slash means the status is between 10 and 19, a 2 before the slash means between 20 and 29 etc.
Example:
VR4567891012 means status 4
VR3/78901234 means status 37.

Example of LDK number:
LDK 4501/01 means 8926 **450 10101**
LDK 4500/00 means 8926 **450 00001**

Numbers of printed circuit board assy
- 3922 406 xxxxx or 3922 407 xxxxx

Number (screened in PCB layout) of printed circuit board assy: 3922 411xxxxx. (not a sparepart)

# Section 1

# Safety Information

READ THIS SECTION CAREFULLY
BEFORE INSTALLING OR
SERVICING THIS EQUIPMENT

*This section contains information which must be referenced before installation, maintenance or service of the triax adaptor. The meaning of warning and caution messages is explained and several warnings and cautions which are relevant to the equipment are given. A brief reference to some first aid practices is also provided.*

## Contents

## Safety Summary

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

Before connecting the equipment to the mains of the building installation, the proper functioning of the protective earth lead of the building 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.

### Symbol 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. |

## Cautions and Warnings

When performing service, be sure to read and comply with the warning and caution notices appearing in the manual. 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 BASE STATION MUST BE MOUNTED IN A 19" RACK WHICH HAS SAFETY COVERS ACCORDING TO EN60065.

**Caution**

DO NOT CONNECT A TRIAX CABLE FROM THE LDK 6 CAMERA FAMILY TO THIS SYSTEM

NEVER CONNECT THE TRIAX CABLE FROM A CAMERA TO A CPU OF A DIFFERENT FAMILY; NEVER CONNECT THE LDK FAMILY TO THE TTV FAMILY.

Components marked ⚠ on the circuit diagram are critical for safety. They must only be replaced with specified part numbers. Parts in this category also 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. Under no circumstances 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.

## Mains Lead Wiring

**- important 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.

## First Aid

Personnel engaged in the installation, operation, maintenance or servicing of this equipment are urged to become familiar with First-Aid theory and practises. The following information is not intended to be complete First-Aid procedures, it is brief and is only to be used as a reference. It is the duty of all personnel using the equipment to be prepared to give adequate Emergency First-Aid and thereby prevent avoidable loss of life.

**Treatment of electrical shock**

DO NOT TOUCH THE VICTIM WITH YOUR BARE HANDS until the circuit is broken.

SWITCH OFF. If this is not possible, PROTECT YOURSELF with some dry insulating material and pull the victim clear of the conductor.

**Treatment of electrical burns**

Extensive burned and broken skin:

a. Cover area with clean sheet or cloth. (Cleanest available cloth article).
b. Do not break blisters, remove tissue, remove adhered particles of clothing, or apply any salve or ointment.
c. Treat victim for shock as required.
d. Arrange transportation to a hospital as quickly as possible.
e. If arms or legs are affected keep them elevated.

If it is anticipated that qualified medical help will not be available for at least an hour and the victim is conscious and not vomiting, give him a weak solution of salt and soda: 1 level teaspoonful of salt and 1/2 level teaspoonful of baking soda to each quart of luke warm water. Allow victim to sip slowly about 4 ounces (half glass) over a period of 15 minutes. Discontinue fluid if vomiting occurs. Do not give alcohol.

Less severe burns (1st and 2nd degree):

a. Apply cool (not ice cold) compresses using the cleanest available cloth article.
b. Do not break blisters, remove tissue, remove adhered particles of clothing, or apply salve or ointment.
c. Apply clean dry dressing if necessary.
d. Treat victim for shock as required.
e. Arrange transportation to a hospital as quickly as possible.
f. If arms or legs are affected keep them elevated.

# Artificial Respiration

**The expired air method**

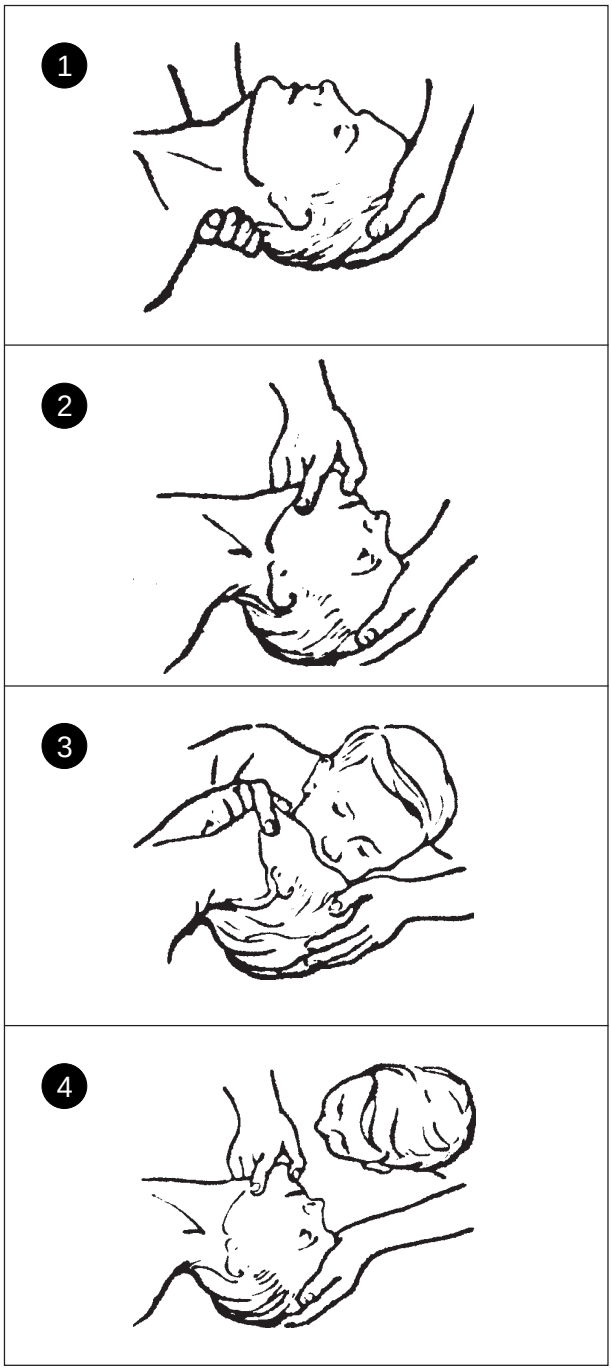
1. It is essential to commence artificial respiration without delay. Send for medical assistance as soon as possible.
   Lay the patient on his back with his arms to his sides. If on a slope have the stomach slightly lower than the chest. Make a brief inspection of the mouth and throat to ensure that they are clear of obvious obstruction.
   Kneel on one side of the patient level with his head, place one hand under his neck and the other hand on top of his head.

2. Lift the neck and tilt the head back as far as possible. Move the hand from under the neck and place it on the chin of the patient, the thumb between the chin and mouth, the index finger along the line of the jaw, the remaining fingers curled. Whilst positioning the patient, open your mouth and take deep breaths.

3. Using the thumb of the hand on the chin to keep the lips sealed, open your mouth wide and make a seal round the patients nose and blow into it.

4. After blowing, turn your head to observe the rise of the chest.

Start with ten quick deep breaths and then continue at the rate of twelve to fifteen breaths per minute. This should be continued until the patient revives or a doctor certifies death.




**Notes**

If no air enters the patients lungs, the nose may be blocked and the mouth should be opened using the hand on the chin; open your mouth wide and making a seal round his mouth blow into his mouth. Turn the head to observe the chest rise. This may be used as an alternative to blowing into the nose even when the nose is not blocked, but in this case the nose must be sealed either with the cheek or by moving the hand from the top of the head and pinching the nostrils. The head must be kept at full backwards tilt.

In case of facial injuries it may be necessary to do a manual method of artificial respiration (Holger Nielsen).

**If victim is responsive:**

a. Keep him warm
b. Keep him as quiet as possible
c. Loosen his clothing

# Section 2

# Installation

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

## Contents

## Packing/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.

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.

## Attaching an Adapter

The LDK 6000 Camera head is a multi-role camera head that can be used with various adapters. To attach an adapter to the camera proceed as follow:

**Caution**

Be extremely careful with the connectors between the camera head and the adapter. Do not allow the guide pins to damage the pins of the connector.

**Caution**

Follow these steps in the order given. Tightening the screws in the wrong order could result in mechanical damage to the camera.

a. Using the rail **(1)** on the bottom of the camera head as a guide, fit the guide pins **(2)** on either side of the connector and the guide pin **(3)** at the top rear of the camera head into the corresponding slots of the adapter.
b. First, tighten the two horizontal screws **(4)** on the top of camera.
c. Next, tighten the two horizontal screws **(5)** at the front of the camera.
d. Lastly, tighten the vertical screw **(6)** in the handle of the camera.

## Detaching an Adapter

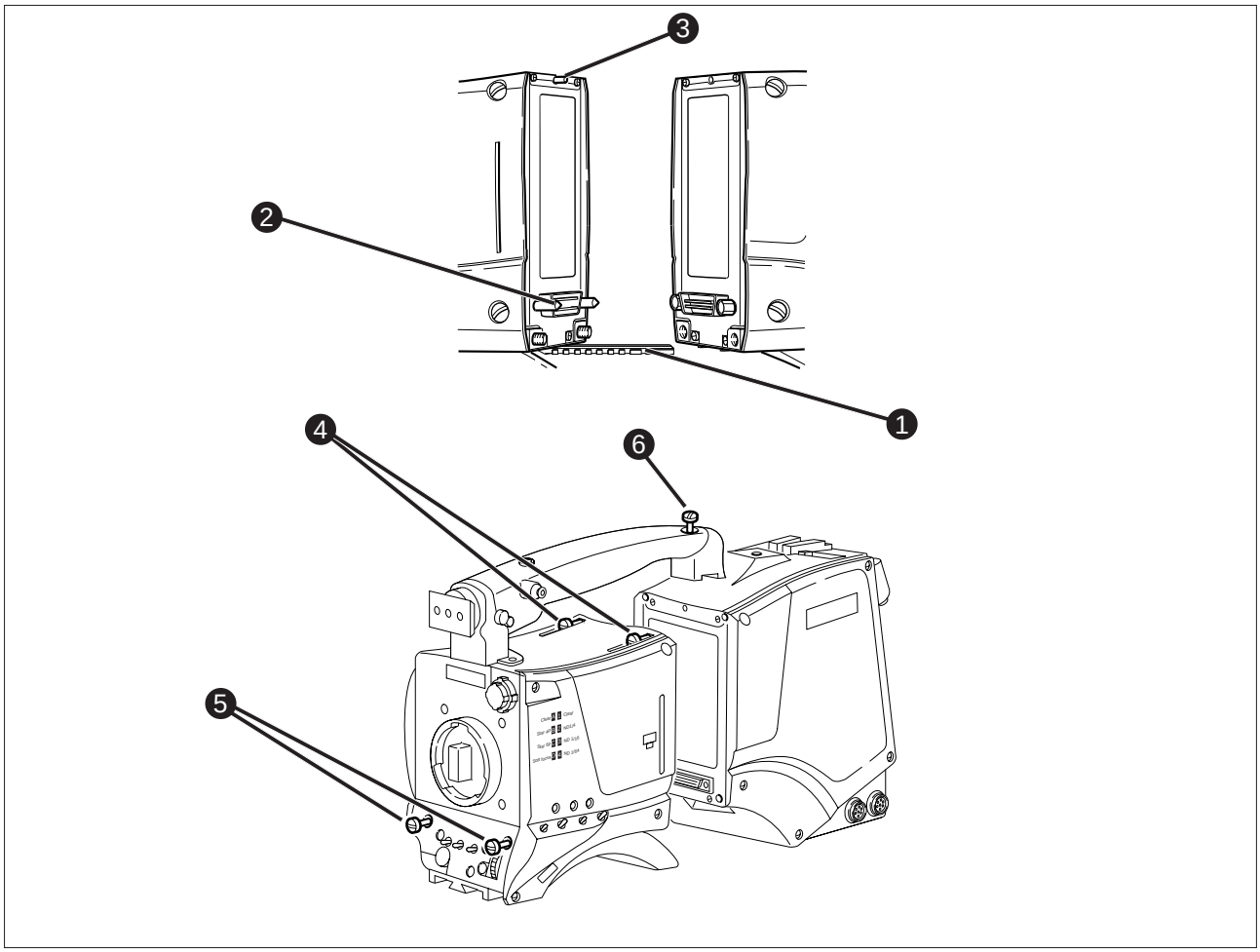
To detach an adapter from the camera head follow the steps for attaching it in the reverse order.

**Caution**

Loosening the screws in the wrong order could result in mechanical damage to the camera.

**Note**

The procedure is given for the Triax adapter LDK 5460. Follow the same procedure for the other adapters.

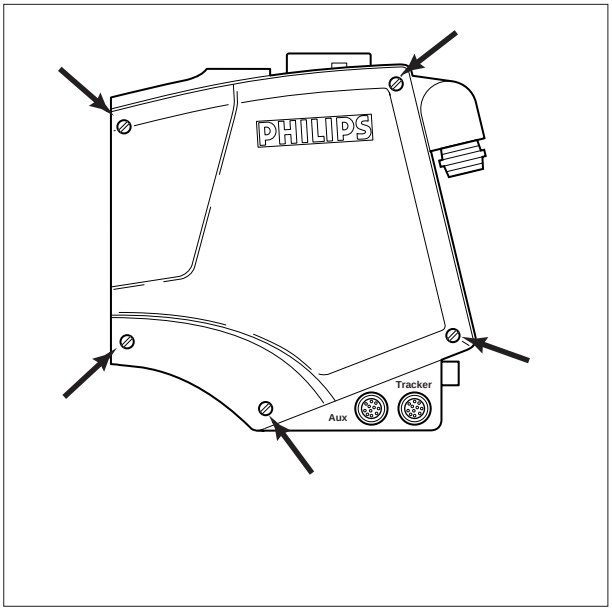


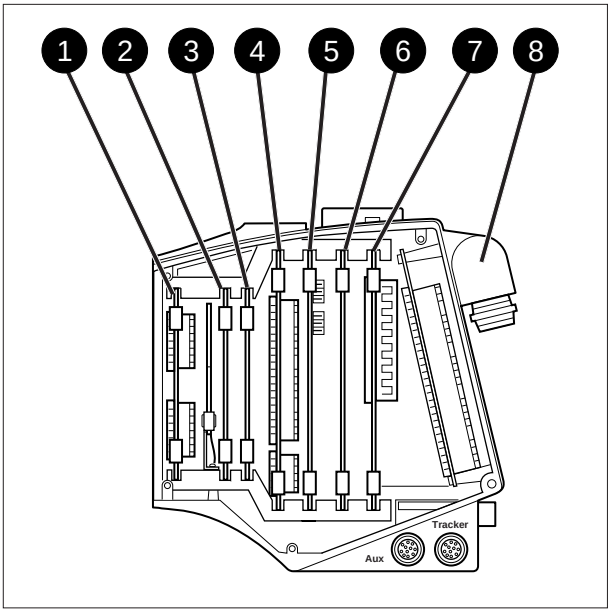
## Hardware Customization

The camera is delivered in a ready-to-use state, however, there are occasions when it might be necessary to re-adjust some functions after, for example, fitting a new board.
A large number of functions can be set-up using the control facilities of the menu system. In addition to this software set-up there are some functions which can be selected or adjusted internally in the camera.
Refer to the next chapters for instructions.

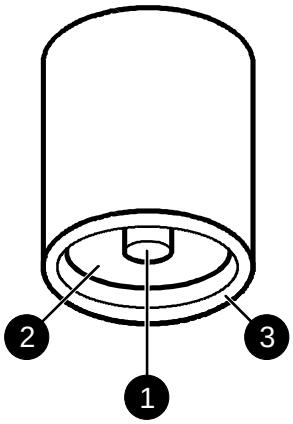
**Location of boards**
Unsrew the five screws on the left side panel and swing down the cover.

1. Video Rec / Converter
2. Conv./NTSC Encoder board
3. Data board
4. Video Mux board
5. Audio/Intercom TX/RXboard
6. Audio/Intercom LF board
7. Power board
8. Triax backpanel



## Triax connector




**3-pin; panel view**

**Fischer**
1. Inner pin: Signals + power
2. Inner shield: Return
3. Outer shield: Camera housing

part number 2432 020 00009

**Trilock**
1. Inner pin: Signals + power
2. Inner shield: Return
3. Outer shield: Camera housing

part number 3922 040 02682

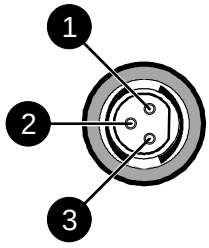
**ARD**
1. Inner pin: Signals + power
2. Inner shield: Return
3. Outer shield: Camera housing

part number 3922 040 01492

**LEMO**
1. Inner pin: Signals + power
2. Inner shield: Return
3. Outer shield: Camera housing

part number 3922 040 02541

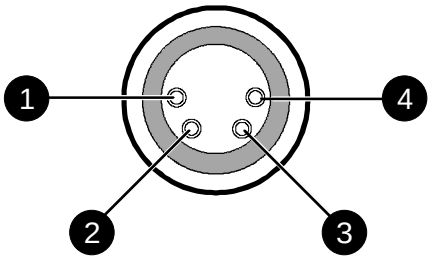
## Script light connector




1. +12V (Maximum Dissipation 3W)
2. Power Return
3. Shield

**Fischer 3-pole female; panel view --Cable end part: 2432-026-00274**

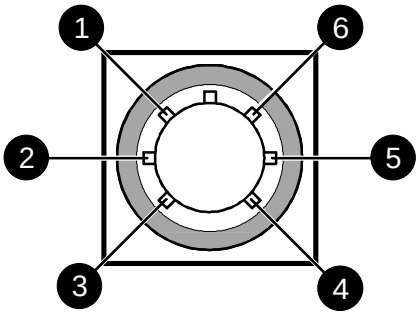
## Power input connector




1. Gnd
2. n.c.
3. n.c.
4. +10,5V.....17V

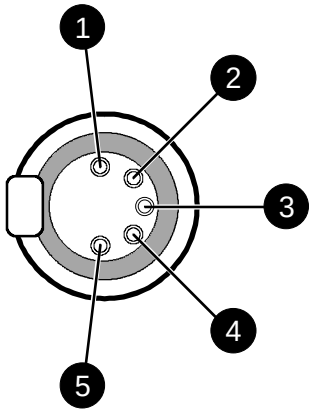
**XLR4-pin male; panel view --Cable end part: 5322-267-41043**

### Camera headset connector




1. Telephone left
2. Not connected
3. Microphone
4. Microphone return
5. Telephone right
6. Telephone return

**Tuchel 6-pin female; panel view --Cable end part: 5322-265-30365**

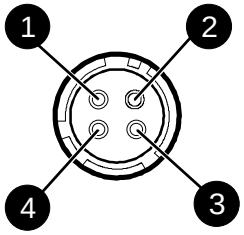



1. Microphone return
2. Microphone
3. Telephone return
4. Telephone left
5. Telephone right

- Microphone level -58dBm/-20dBm switchable
- Microphone impedance 200 ohm
- Telephone level +6dBm nominal
- Telephone output impedance <10 ohm

**XLR 5-pin female; panel view --Cable end Part:2422-026-03399**

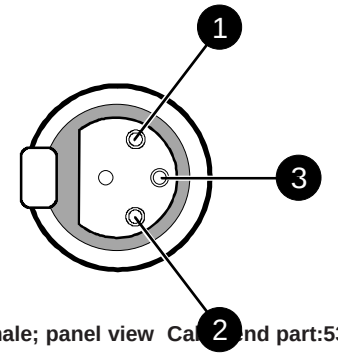
### Power output connector




1. Gnd
2. On air
3. n.c.
4. +12 Vdc (max. 18W)

**Hirose 4-pin male; panel view ---Cable end part: 2422-026-05246**

### Audio microphone connectors

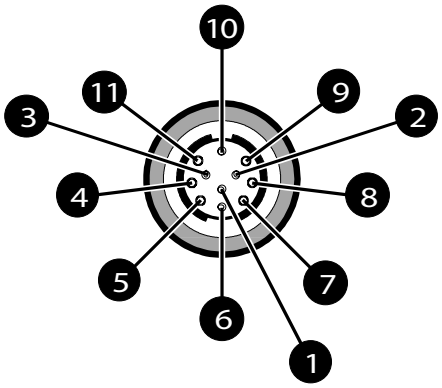



1. Audio Screen
2. Audio In
3. Audio Return

- Microphone impedance > 200 ohm
- Sensitivity remote controlled via base station:
  range: -70 to -28 dBm
  maximum input = -6 dBm
- Signal at pin 2 of audio input is in phase with signal at pin 2 of audio output on Base Station

**XLR 3-pin female; panel view Cable end part:5322-267-41055**

## Auxiliary connector

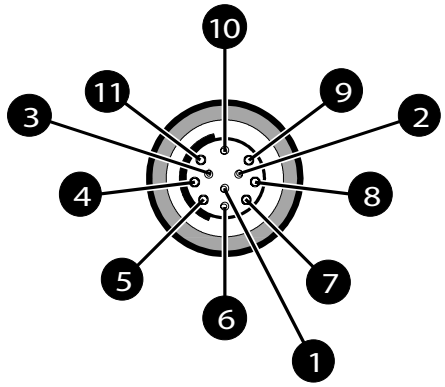



Fischer 11-pole female; panel view --Cable end part: 5322-264-10229

1. +5VL
2. 0VL
3. AN0
4. AN1
5. Spare
6. On-air
7. Private Data Camera - CPU
8. Ground
9. Private Data CPU - Camera
10. Ground
11. Shield

Shield of cable directly to the connector housing.

## Tracker communication connector




Fischer 11-pole female; --- cable end 5322-264-50265

1. On-air signal return
2. Tracker microphone return
3. Tracker microphone input
4. Production tracker
5. Sidetone/engineering tracker
6. Intercom return
7. Program sound tracker
8. Cameraman microphone
9. Tally control tracker
   (Cmos level, R out = 1k)
10. +12V; I max. = 100mA
11. +12V return

- Microphone level -58dBu/-20dBu switchable
- Microphone impedance 200 ohm
- Telephone level + 6dBu
- Telephone output impedance <10 ohm

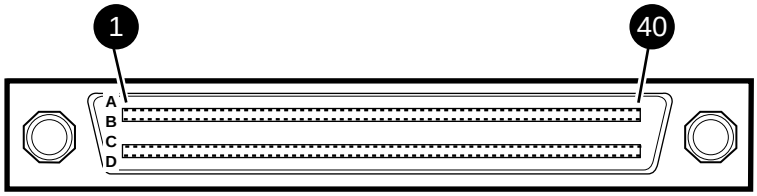
Shield of cable directly to the connector housing.

## Connector numbers

| Panel Connector | Type | Cable End PN | Chassic PN |
|---|---|---|---|
| Triax | 3-pin Trilock | 5322 218 11778 | -- |
| Auxiliary | 11-pin Fisher | 5322 264 10229 | cable end |
| Tracker | 11-pin Fisher | 5322 264 10229 | cable end |
| Power output | 4-pin Hirose | 2422 026 05246 | cable end |
| Headset | 5-pin XLR female | 5322 265 11107 | -- |
| Ext video/Tp | 2-pin Coax female | 5322 204 10303 | -- |
| Script light | 3-pin Fisher | 2432 026 00274 | cable end |
| Power input | 4-pin XLR4 male | 5322-267-41043 | |
| Audio Mic | 3-pin XLAR3 Female | 5322 267 41055 | |

## Docking connector Triax Adapter (X10)

| A row | name | B row | name | C row | name | D row | name |
|---|---|---|---|---|---|---|---|
| 1 | Ion data | 1 | Ion data N | 1 | GND | 1 | + batt |
| 2 | SDA_C | 2 | SCL_C | 2 | GND | 2 | + batt |
| 3 | INTN_C | 3 | audio indication | 3 | GND | 3 | + batt |
| 4 | AB batt sense | 4 | batt sense | 4 | GND | 4 | + batt |
| 5 | adpt id 0 | 5 | adpt id 1 | 5 | GND | 5 | + batt |
| 6 | adpt id 2 | 6 | adpt id 3 | 6 | GND | 6 | + batt |
| 7 | cam id 0 | 7 | cam id 1 | 7 | YB9_RET | 7 | YB8 |
| 8 | RXD | 8 | PIP | 8 | YB9 | 8 | YB8_RET |
| 9 | sync | 9 | blanking | 9 | YB7_RET | 9 | YB6 |
| 10 | white pulse 1 | 10 | white pulse 2 | 10 | YB7 | 10 | YB6_RET |
| 11 | colour framing | 11 | frame reset | 11 | YB5_RET | 11 | YB4 |
| 12 | BS_TDA | 12 | H lock | 12 | YB5 | 12 | YB4_RET |
| 13 | PIP video | 13 | PIP video ret | 13 | YB3_RET | 13 | YB2 |
| 14 | BS_TDV | 14 | BS_TMS | 14 | YB3 | 14 | YB2_RET |
| 15 | adapter vf video | 15 | adapter vf video ret | 15 | YB1_RET | 15 | YB0 |
| 16 | BS_TCK | 16 | BS_TRSTN | 16 | YB1 | 16 | YB0_RET |
| 17 | ext video | 17 | ext video ret | 17 | GND | 17 | GND |
| 18 | -5V | 18 | -5V | 18 | -5V | 18 | -5V |
| 19 | +5V | 19 | +5V | 19 | +5V | 19 | +5V |
| 20 | +3.3V | 20 | +3.3V | 20 | +3.3V | 20 | +3.3V |
| 21 | +5VD | 21 | +5VD | 21 | +5VD | 21 | +5VD |
| 22 | mic Y | 22 | mic Ys | 22 | +12VFC | 22 | +12VFC |
| 23 | mic X | 23 | mic Xs | 23 | GND | 23 | GND |
| 24 | SHIELD | 24 | SHIELD_S | 24 | CR9_RET | 24 | CR8 |
| 25 | audio level | 25 | audio level RET | 25 | CR9 | 25 | CR8_RET |
| 26 | power switch | 26 | TXD | 26 | CR7_RET | 26 | CR6 |
| 27 | +5VS | 27 | -5VS | 27 | CR7 | 27 | CR6_RET |
| 28 | Fsync_out | 28 | Fsync_out ret | 28 | CR5_RET | 28 | CR4 |
| 29 | spare 1 | 29 | spare 2 | 29 | CR5 | 29 | CR4_RET |
| 30 | Clock_scaler | 30 | Clock_scaler_N | 30 | CR3_RET | 30 | CR2 |
| 31 | G9 | 31 | G9 ret | 31 | CR3 | 31 | CR2_RET |
| 32 | G8 | 32 | G8 ret | 32 | CR1_RET | 32 | CR0 |
| 33 | G7 | 33 | G7 ret | 33 | CR1 | 33 | CR0_RET |
| 34 | G6 | 34 | G6 ret | 34 | GND | 34 | housing |
| 35 | G5 | 35 | G5 ret | 35 | GND | 35 | housing |
| 36 | G4 | 36 | G4 ret | 36 | GND | 36 | housing |
| 37 | G3 | 37 | G3 ret | 37 | n.c | 37 | |
| 38 | G2 | 38 | G2 ret | 38 | n.c | 38 | |
| 39 | G1 | 39 | G1 ret | 39 | -80V | 39 | |
| 40 | G0 | 40 | G0 ret | 40 | -80V | 40 | |




**160-pin female; panel view**

# Specifications

## LDK 6000 with Triax adapter LDK 5460

**General data**

Power requirements
triax powered or 12V dc
Power consumption
34 W (Head + Triax Adaptor + VF)
Operating temperatures
-20 to +40°C (-4 to +113°F)
Storage temperatures
-20 to +60°C (-4 to +140°F)
Weight (approx.)
4.4 kg (9.7 lbs) incl. 2-inch VF and Multi-Purpose adapter
Dimensions
197 x 117 x 349 (H x W x L in mm.)
Triax*HD* cable length
Y/C transmission over 1,000 m. (3,300 ft.) with 14 mm. cable
Viewfinder CRT
2" or 7" monochrome
2" Viewfinder resolution
>600 TV lines (centre)
7" Viewfinder resolution
>800 TV lines (centre)

**Camera Head**

Pick-up device
3x2/3" Philips HD-DPM+™ CCD's, 1080i/720p switchable
3x2/3" Philips HD-FT CCD's, 1080i or 720p
Picture elements
9.2 million pixels 1920 (H) x 4320 (V) effective

HDTV Aspect Ratio
16:9
Temporal frequency
59.94 or 50Hz.
Smear
No vertical smear
Optical system
F1.4 prism system
Optical filters
1st Wheel Clear, 1/4 ND, 1/16 ND. 1/64 ND
2nd Wheel Clear, 4-point star, 6-point star, soft-focus
Electronic filters
3200K, 4700K, 5600K, 7200K, FL, 2AWB presets, Continues Auto White, Colour Filter
Digital quantization
12 bits A to D
Digital signal processing
>22-bits
Sensitivity
2000 lux (186 ft cd) at F7.0 (typical, 1080i mode)
Gain
-6dB to +12dB in 3dB steps (user definable presets)
S/N ratio
52 dB in Y (typical)
Modulation depth
40% at 27 MHz
Exposure control
Down to 1/500 sec.
Clean scanning
50.6 to 125 Hz (at 50 Hz temp. freq.)
61 to 150 Hz (at 59.94 Hz temp. freq.)

**Connectors**

Front microphone In.
1x XLR 3, balanced, +48V, CH1 on HD Base Station
Viewfinder out
20-pin
Lens out
12-pin
Control bus
9-pin, RS232 compatible
Docking connector
160-pin

**Connectors LDK 5460 Triax*HD* Adapter**

Triax*HD*
Trilock, Fischer, ARD or Lemo
Video CVBS Out
BNC 1x, 1.0 Vpp; 75 Ohm;
Video HD SDI Out
BNC 1x, SMPTE 292M, 0.8 Vpp; 75 Ohm; 1.5 Gb/s optional
Monitor Out
BNC 1x, Y-signal of viewfinder or external video, 1 Vpp; 75 Ohm
Teleprompter Out
BNC 1x, 1 Vpp; 75 Ohm
Rear microphone In (2x)
2x XLR-3 female, balanced, +48V selectable
DC 12Volts In
XLR-4 male
DC Out 1
12 Volts, 1.5 A, 4 pins Fischer (DC and Tally)
Scriptlight
12 Volts, 0.25A, 3 pin Fischer
Tracker
11 pins (Comm. / Signalling)
Auxilary/ Data
11 pins (Private date)
Intercom
1x XLR-5 female or Tuchel, with channels for ENG/PROD/PROG

**Connectors LDK 5600 Multi-Purpose Adapter**

Video HD SDI Out
BNC 1x, SMPTE 292M, 0.8 Vpp; 75 Ohm; 1.5 Gb/s
Viewfinder Out
BNC 1x, 1.0 Vpp; 75 Ohm;
Genlock In
BNC 1x, HD tri-level sync.,0.6 Vpp; 75 Ohm;
LCP
Connection to LCP-100
VTR
26-pin, analog component HD video
DC 12 Volts In
XLR-4 male

These typical specifications are valid for PAL and NTSC systems and are subject to change without notice.

# Section 3

# 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 will help you replace the numbered printed circuit boards and access the interior of the adapter to replace connector boards or connectors.

After a printed circuit board has been replaced it is sometimes necessary to carry out adjustments to match the new boards to your camera 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. Do not forget to mount all washers to ensure that the correct level of electromagnetic shielding is maintained.

To get access to the numbered printed circuit boards it is only necessary to remove the left cover.

To replace connector boards or connectors it is necessary to detach the adapter from the camera head and follow the procedure to get access to the interior of the adapter.

## Jigs & Tools

Special tools for adapter

Nut driver with Thandle and Hex drive
Nut driver Fisher plug
Nut driver BNC connector
PCB extender small
PCB extender large

For partnumbers see chapter Parts Lists.

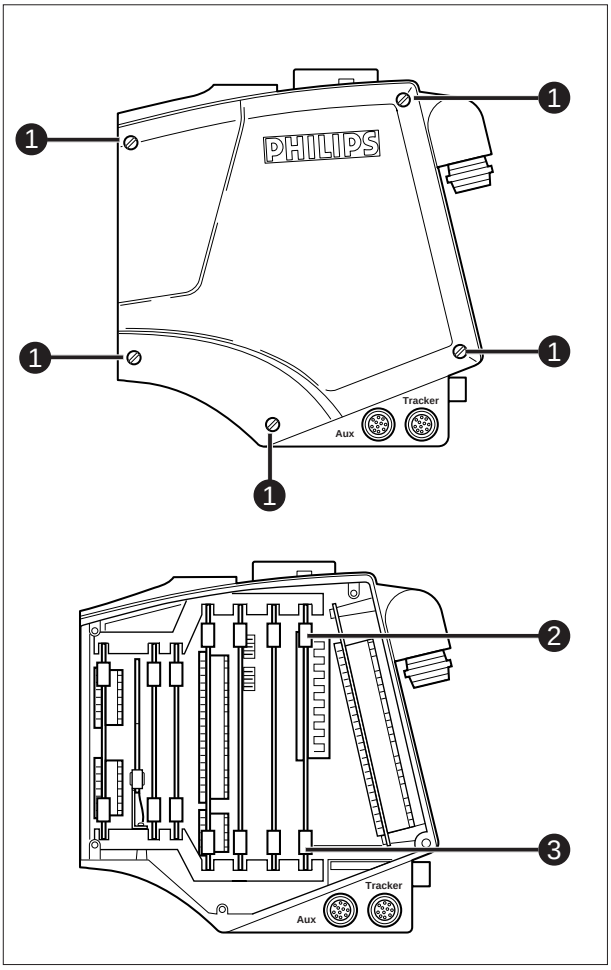
## Printed circuit modules

**Gaining access to the boards**
To access the numbered printed circuit boards remove the left side cover of the adapter as follows:
a. Unscrew the five screws ❶ on the left side cover.
b. Remove the cover.

**Location of boards**
The printed circuit boards in the adapter are marked as follows:

| | |
|---|---|
| **3a** | Video Rec / Converter HD |
| **3b** | DAC. ENC. SDI. Board |
| **4** | Data board |
| **6** | Video Mux |
| **7** | Audio/Intercom TX/RX |
| **8** | Audio/Intercom LF board |
| **9** | Power board |

**Removing a board**
To remove a printed circuit board proceed as follows:
a. Pull up the top print ejector ❷ and pull down the bottom print ejector ❸ to release the printed circuit board from its connector.
b. Pull horizontally on these ejectors to slide the board clear of the adapter.

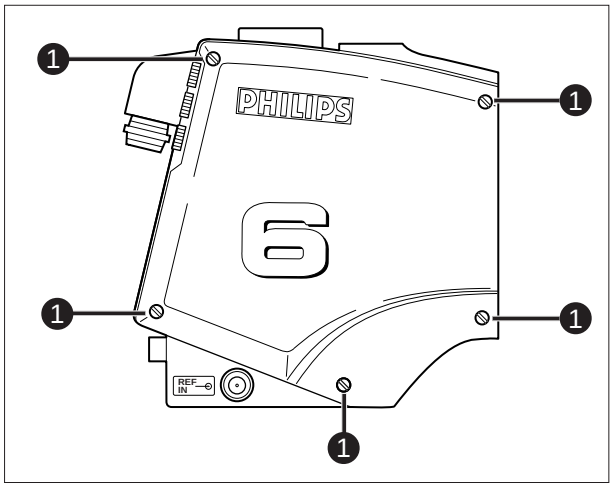


# Replacing connectors

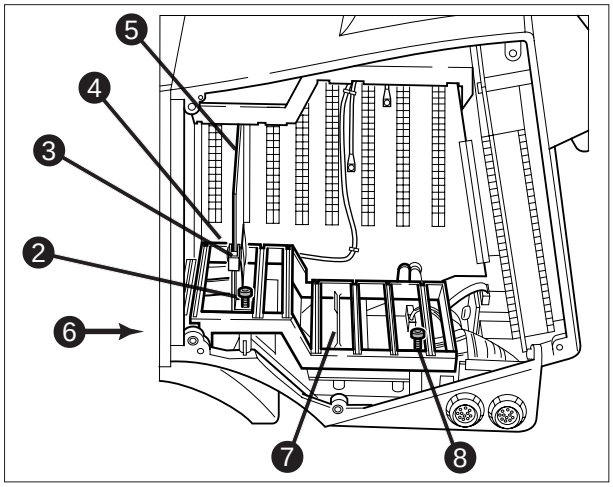
**Removing the lower guide frame**

To access interior of the adapter proceed as follows:

a. Detach the adapter from the camera head.
b. Remove the left side cover and all the numbered printed circuit boards as described above.
c. Unscrew the five screws ❶ on the right side cover and remove the cover.



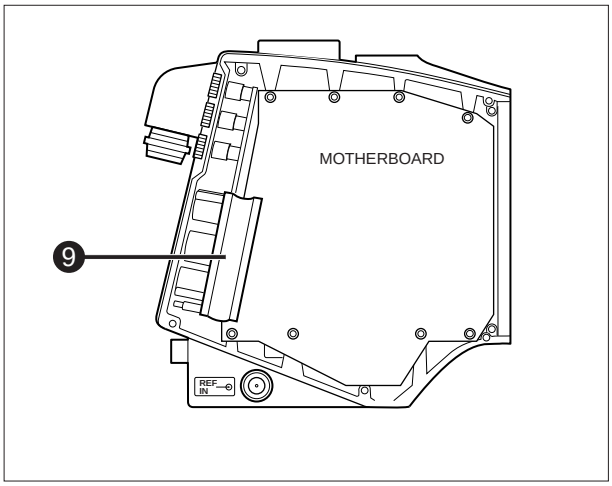

d. Remove the screw ❷ securing the flat cable connector board support bracket ❸ and remove the bracket from the PC board guide frame ❹.



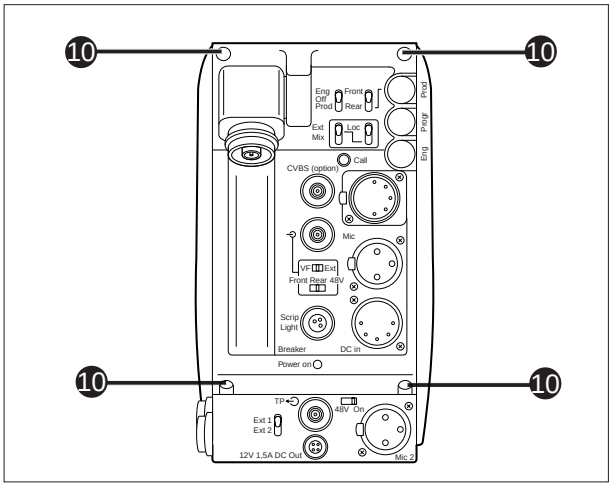

e. Disconnect the flat cable connector board ❺ from the motherboard.
f. Underneath the front of the adapter remove the two screws ❻ securing the PC board guide frame support bracket ❼.
g. Remove the screw ❽ securing the PC board guide frame ❹ and remove the frame.

**Removing the back**

h. Disconnect the B, R and G coax cables coming from the back, from the motherboard using the correct tool (part no. 5322 395 10802). Remove the coax cables from their clips on the motherboard
i. Disconnect the connectors ❾ connecting the back to the motherboard.



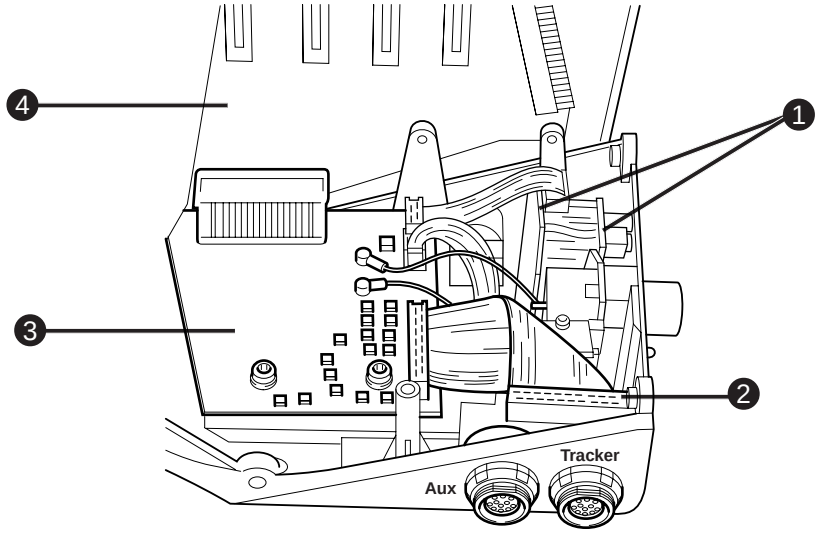

j. Remove the four screws ❿ securing the back to the adapter chassis and remove the back.



## Connector board identification

The connector boards in the adapter are as follows:

1. Audio connector board
2. Fischer connector board
3. Connector board
4. Triax motherboard



# Section 4

# Adjustments

This section contains the adjustment procedures to be followed to obtain the best performance from the camera. These procedures need only be used if, following a module replacement, the camera does not perform according to specifications.

## Contents

## Introduction

This unit is factory tested and adjusted for operational use. Under normal circumstances, the internal automatic calibration procedures do not need to be started and the internal potentiometers do not need to be adjusted.

The only situation that might require some realignment of the adapter is when a printed circuit board has been replaced.

If it is discovered that the unit is misaligned, the following procedures are given as a guide for competent service personnel, who have a thorough knowledge of the camera and have the use of calibrated equipment, to realign the unit.

If no improvement can be achieved or an adjustment is out of range, please contact your local supplier or the nearest Philips Digital Service Centre.

The adjustment procedures are designed as separate units. Within a numbered procedure do not change the position of switches or jumpers unless instructed to do so in the procedure.

These adjustment procedures are for the Triax Adapter. However, for practical purposes the Triax Adapter is used together with the camera head to facilitate some measurements.

## Test Equipment

The following is a list of equipment required to carry out the adjustment procedure:

- Set of board extenders LDK 5820/01
- Oscilloscope (with cursor measurement)
- Waveform monitor

## Set-up Instructions

Before carrying out any adjustments the following steps are recommended:

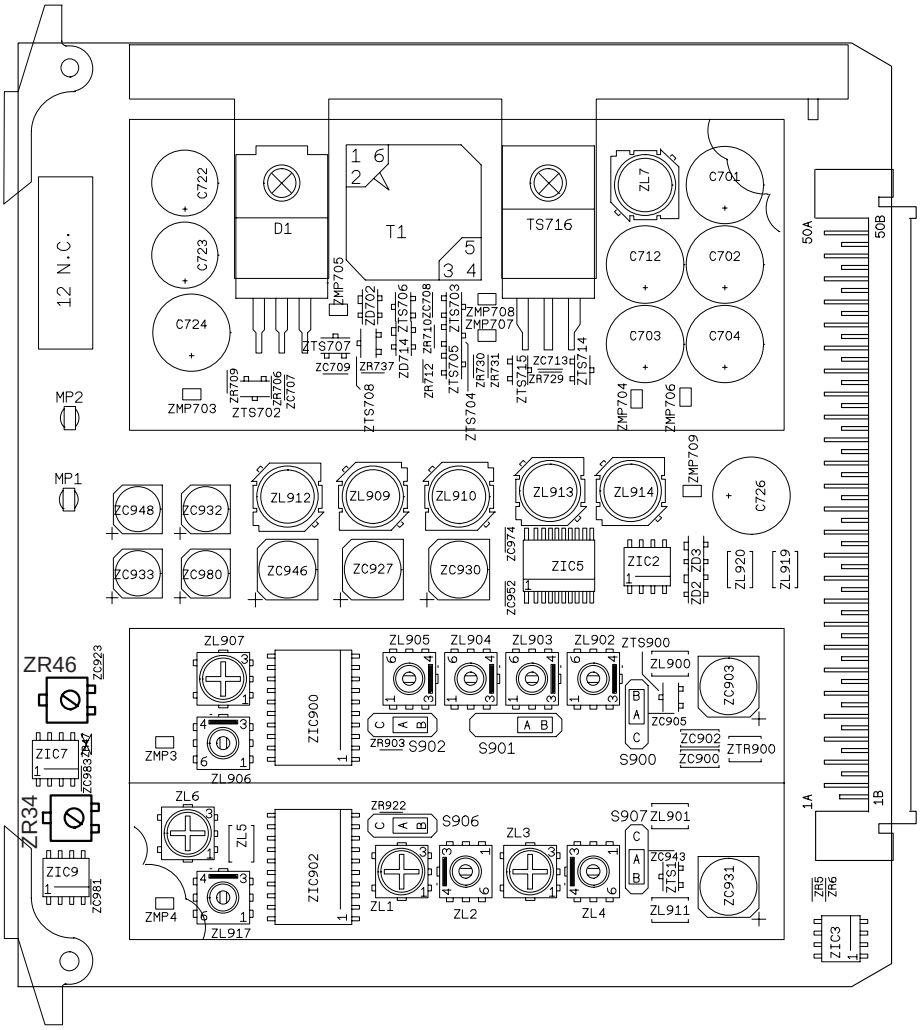
- Attach the adapter to the camera.
- Install the camera on a tripod.
- Attach the lens and the necessary cables.
- Allow the camera to warm-up.

**CAUTION:**
Do not attempt to improve camera performance
by adjusting individual potentiometers, jumpers or switches
as this may lead to complete misalignment of the camera.

**CAUTION:**
Do not realign individual potentiometers, jumpers or switches
not mentioned in this chapter or earlier in this manual.
These adjustment points are for factory use only.

**CAUTION:**
Switch off the power supply to the camera
before removing or replacing printed circuit boards.

## Video Receiver converter



## Video Receiver converter

**Set-up**

1. Switch off the power. Place video receiver board on service extender. Switch on power.

**Tp gain adjustment**

2. Insert colour bar signal to Telepromter input of the basestation.
3. Measure at Telepromter output of the camera and adjust Zr46 for 1Vpp.

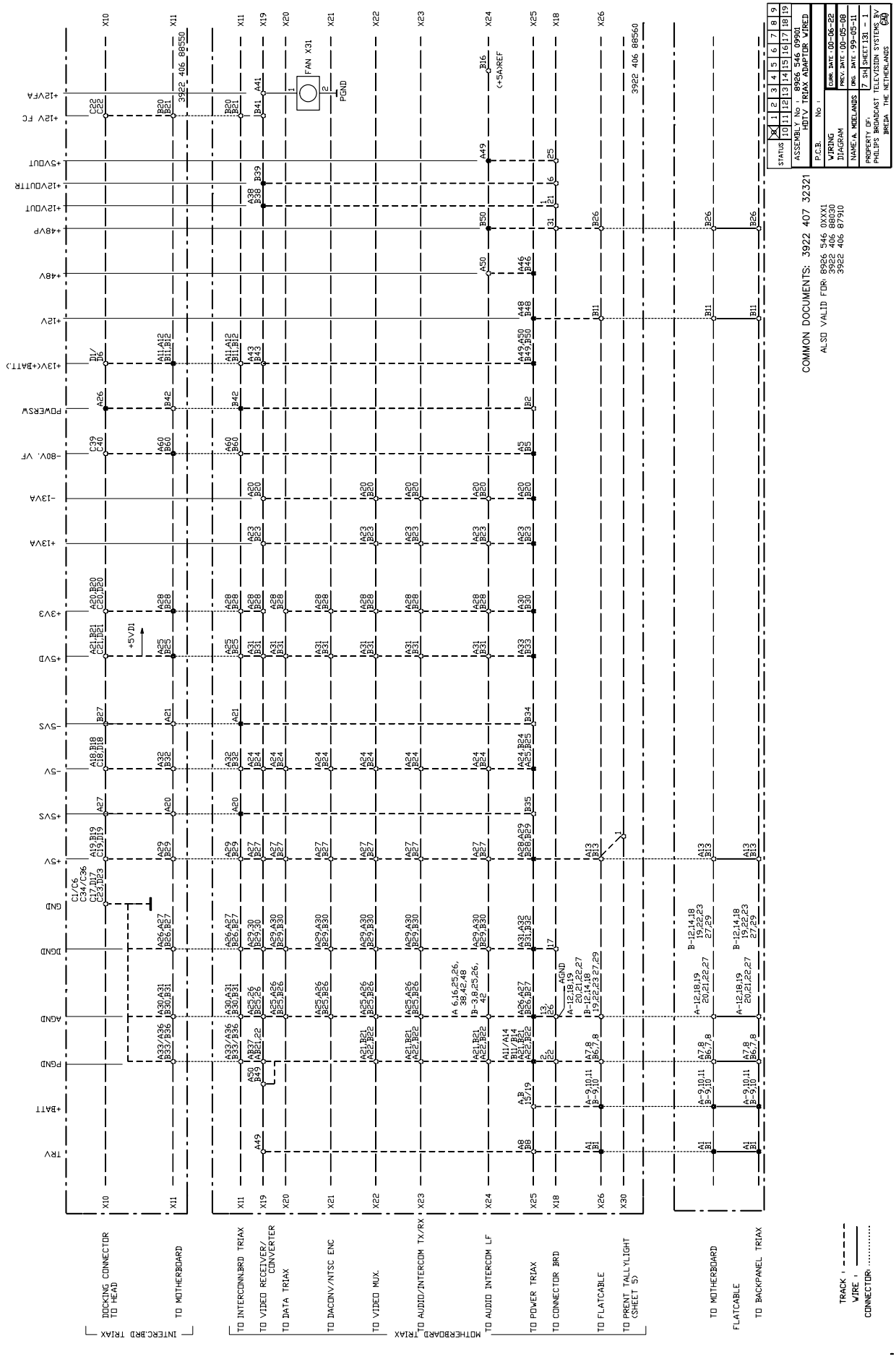
**Ext. Video gain adjustment**

4. Insert colourbar signal to Ext 1 input on the basestation.
5. Set VF/Ext switch at the triax backpanel to Ext.
6. Select Ext 1 of the triax backpanel.
7. Measure at Ext output of the camera and adjust Zr34 fo 1Vpp

# Section 5

# Wiring Diagrams

## Contents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INTERC.BRD TRIAX
TO MOTHERBOARD
TO INTERCONN.BRD TRIAX
TO VIDEO RECEIVER/ CONVERTER
TO DATA TRIAX
TO DACONV/NTSC ENC
TO VIDEO MUX.
TO AUDIO/INTERCOM TX/RX
TO AUDIO INTERCOM LF
MOTHERBOARD TRIAX
TO POWER TRIAX
TO CONNECTOR BRD
TO FLATCABLE
TO PRENT TALLYLIGHT (SHEET 5)
TO MOTHERBOARD
FLATCABLE
TO BACKPANEL TRIAX
FAN X31
PGND
(+5A)REF
+5VD1
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3922 406 87910
ASSEMBLY NO 8926 546 09901
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NAME: A. MIDELANDS
DRG. DATE: 99-05-11
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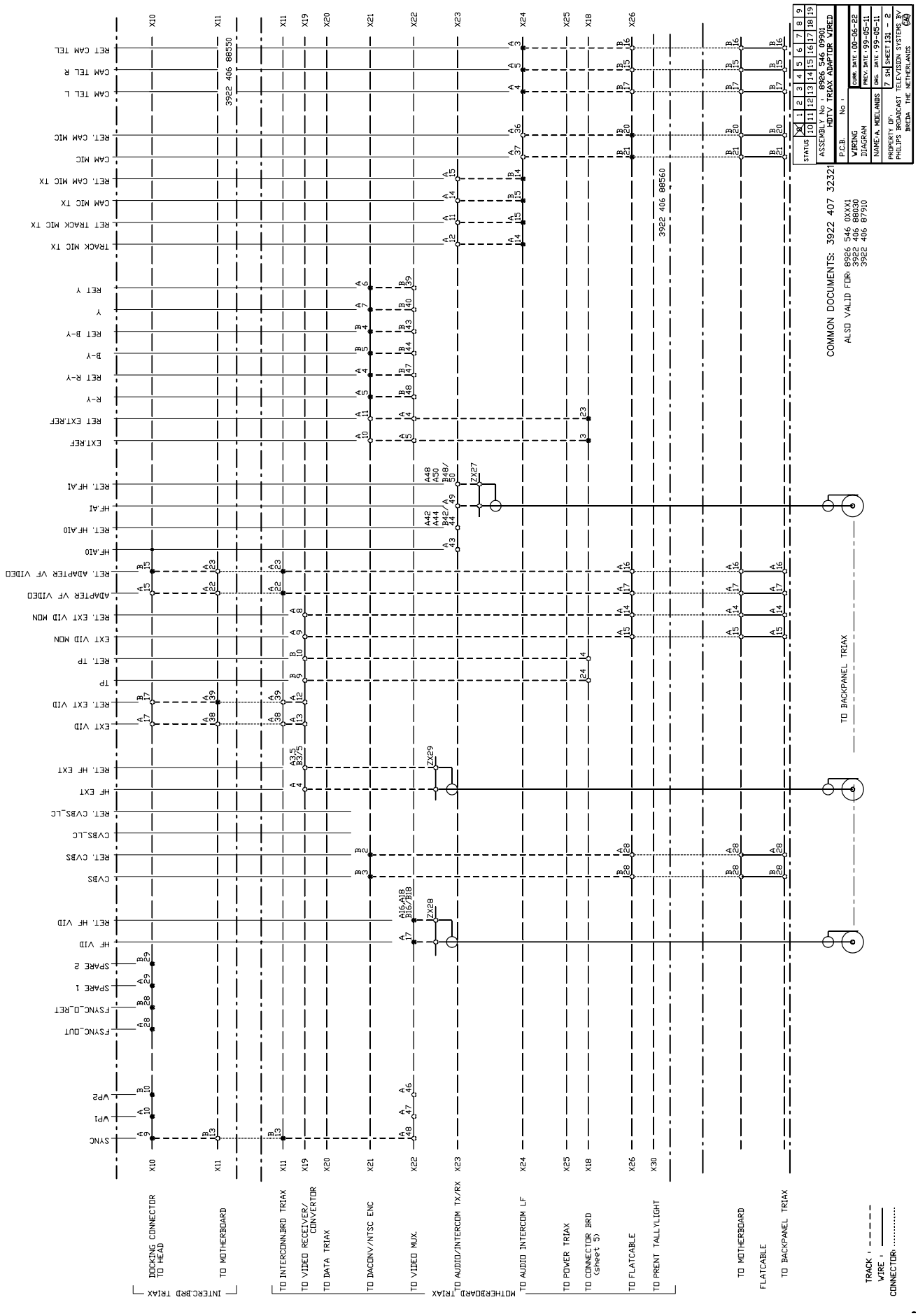
WIRE :
CONNECTOR :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ORG. DATE: 99-05-11
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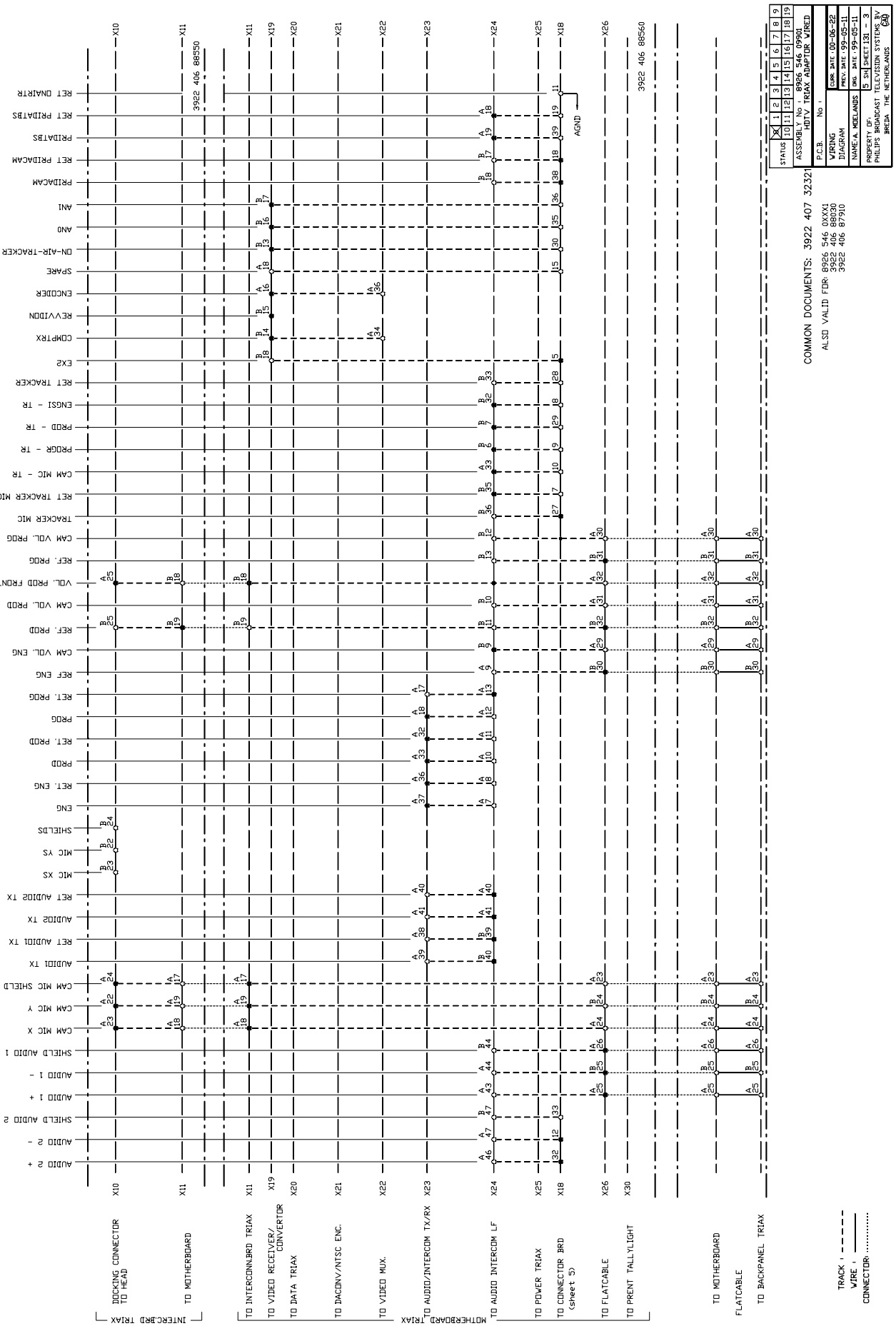
DOCKING CONNECTOR TO HEAD
TO MOTHERBOARD
INTERC.BRD TRIAX
TO INTERCONN.BRD TRIAX
TO VIDEO RECEIVER/ CONVERTOR
TO DATA TRIAX
TO DACONV/NTSC ENC
TO VIDEO MUX.
TO AUDIO/INTERCOM TX/RX
MOTHERBOARD TRIAX
TO AUDIO INTERCOM LF
TO POWER TRIAX
TO CONNECTOR BRD (sheet 5)
TO FLATCABLE
TO PRENT TALLYLIGHT
TO BACKPANEL TRIAX
TO MOTHERBOARD
FLATCABLE
TO BACKPANEL TRIAX
TRACK
WIRE
CONNECTOR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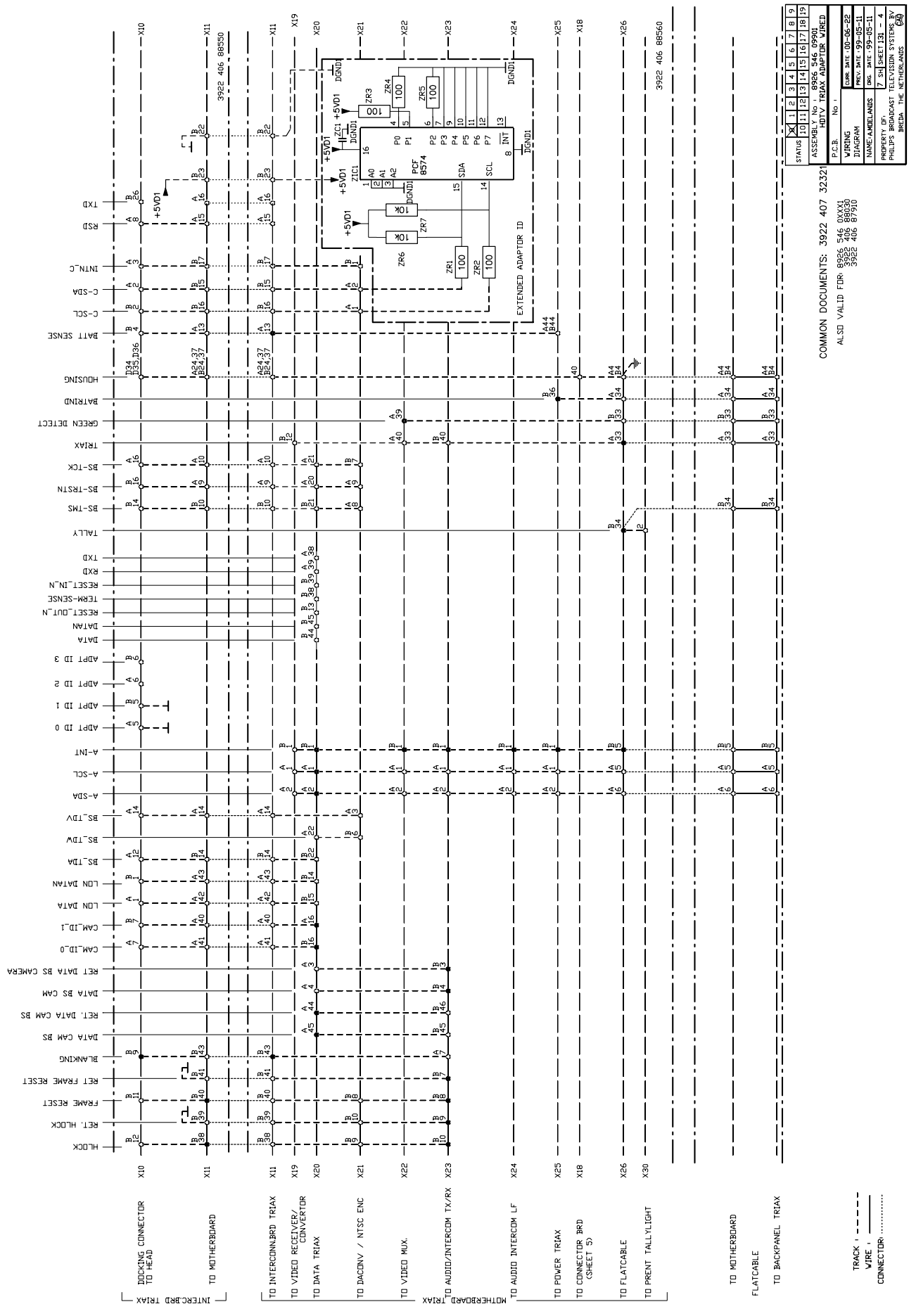
P.C.B. No :
WIRING DIAGRAM
NAME: A. MIDELANDS
DRG. DATE: 99-05-11
PREV. DATE: 99-05-11
CORR. DATE: 00-06-22
SHEET 131 - 3
PHILIPS BROADCAST TELEVISION SYSTEMS BV BREDA THE NETHERLANDS
DOCKING CONNECTOR TO HEAD
TO MOTHERBOARD
INTERC.BRD TRIAX
TO INTERCONN.BRD TRIAX
TO VIDEO RECEIVER/ CONVERTOR
TO DATA TRIAX
TO DACONV/NTSC ENC.
TO VIDEO MUX.
TO AUDIO/INTERCOM TX/RX
MOTHERBOARD TRIAX
TO AUDIO INTERCOM LF
TO POWER TRIAX
TO CONNECTOR BRD (sheet 5)
TO FLATCABLE
TO PRENT TALLYLIGHT
TO MOTHERBOARD
FLATCABLE
TO BACKPANEL TRIAX
AGND
TRACK :
WIRE :
CONNECTOR: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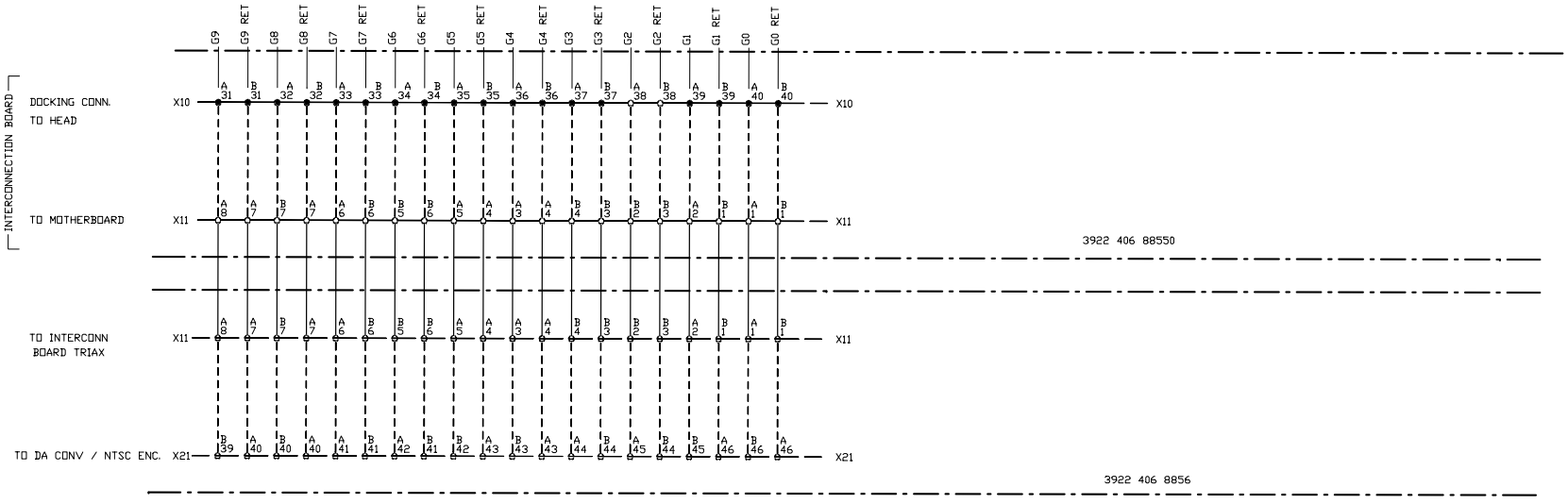
EXTENDED ADAPTOR ID
PCF 8574
TO MOTHERBOARD
TO BACKPANEL TRIAX
TO FLATCABLE
TO PRENT TALLYLIGHT
TO CONNECTOR BRD (SHEET 5)
TO POWER TRIAX
TO AUDIO INTERCOM LF
TO AUDIO/INTERCOM TX/RX
TO VIDEO MUX.
TO DACONV / NTSC ENC
TO DATA TRIAX
TO VIDEO RECEIVER/ CONVERTOR
TO INTERCONN.BRD TRIAX
TO MOTHERBOARD
DOCKING CONNECTOR TO HEAD
INTERC.BRD TRIAX
MOTHERBOARD TRIAX
TRACK :
WIRE :
CONNECTOR :

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WIRE :
CONNECTOR:

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ALSO VALID FOR: 8926 546 0XXX1
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3922 406 87910

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| | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |

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HDTV TRIAX ADAPTOR WIRED

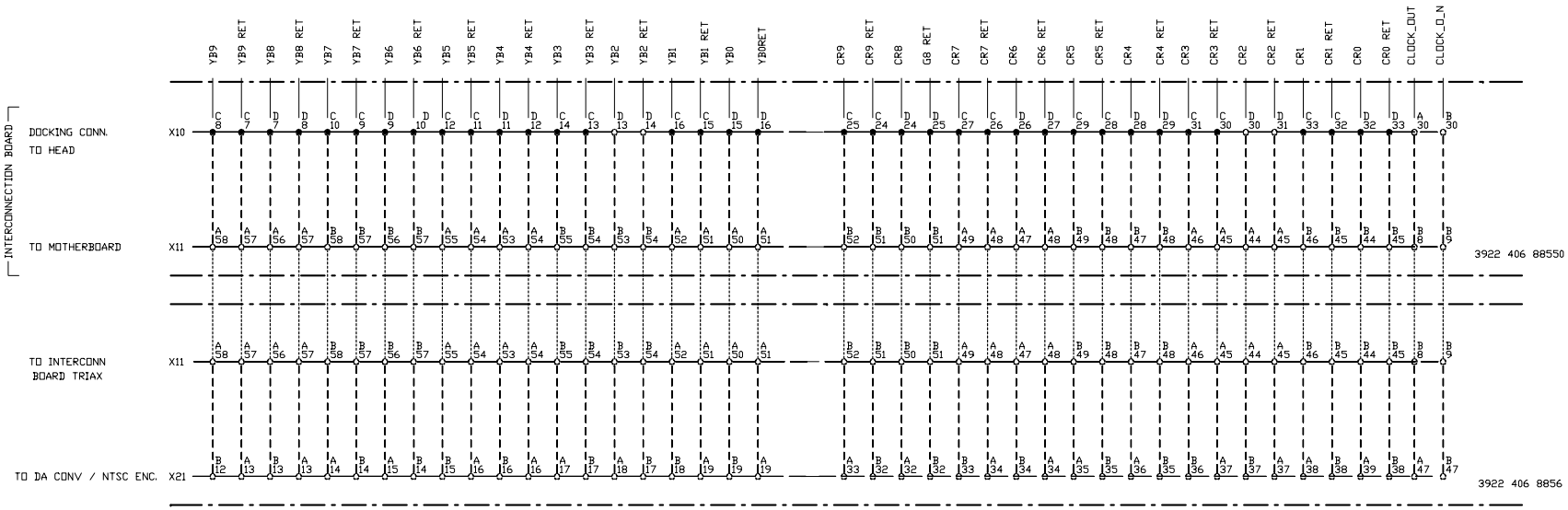
P.C.B. No :

WIRING DIAGRAM — CURR. DATE : 00-06-22
PREV. DATE : 99-05-11

NAME: A. MOELANDS — ORG. DATE : 99-05-11

PROPERTY OF:
PHILIPS BROADCAST TELEVISION SYSTEMS BV
BREDA THE NETHERLANDS

7 SH. SHEET 131 – 5




FLATCABLE

TO BACKPANEL TRIAX

TRACK :
WIRE :
CONNECTOR:

COMMON DOCUMENTS: 3922 407 32321

ALSO VALID FOR: 8926 546 0XXX1
3922 406 88030
3922 406 87910

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
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ASSEMBLY No : 8926 546 09901
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P.C.B. No :

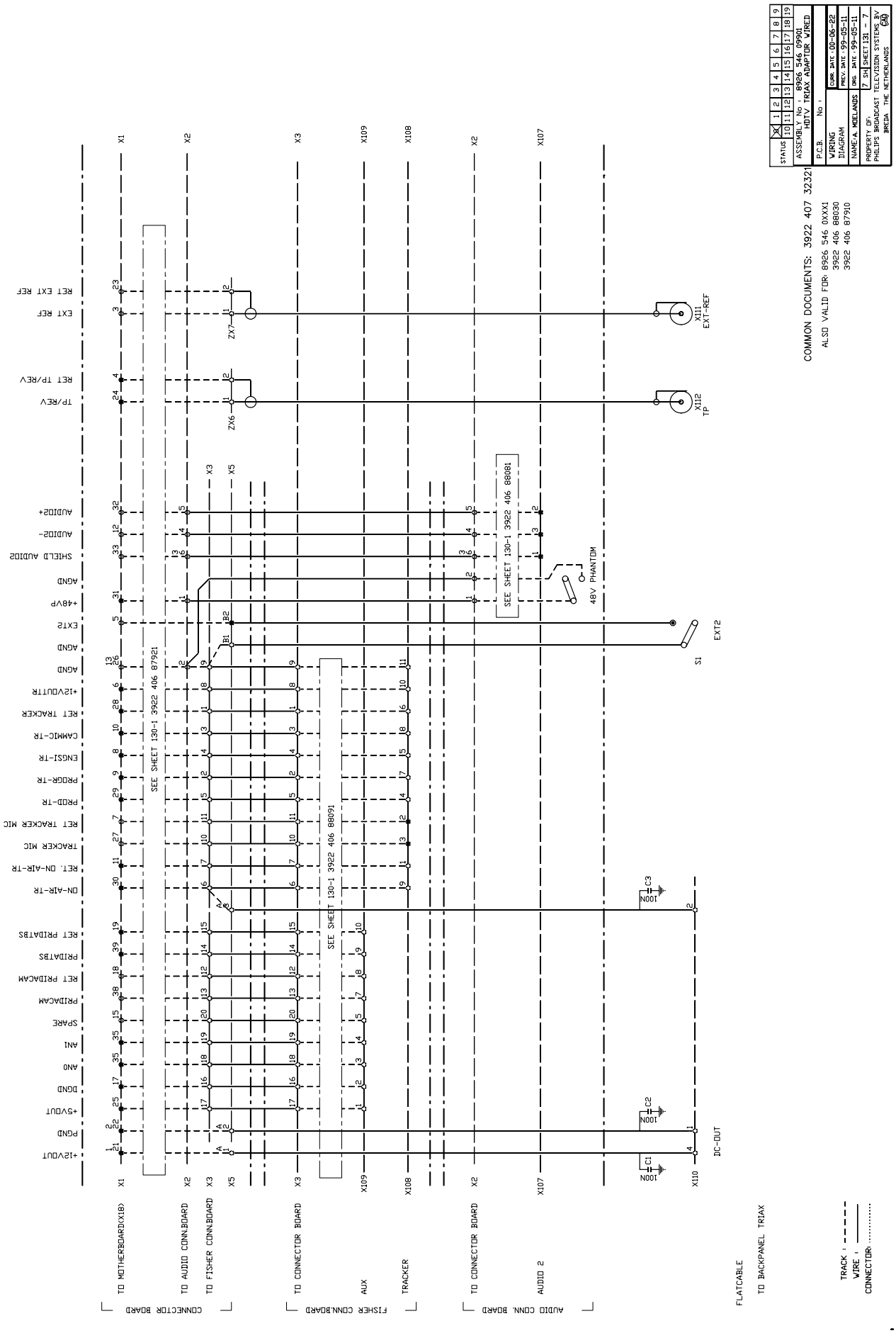
WIRING DIAGRAM — CURR. DATE : 00-06-22
PREV. DATE : 99-05-11

NAME : A. MOELANDS — ORG. DATE : 99-05-11

PROPERTY OF:
PHILIPS BROADCAST TELEVISION SYSTEMS BV
BREDA THE NETHERLANDS

7 SH. SHEET 131 – 6

CAD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CORR. DATE: 00-06-22
PREV. DATE: 99-05-11
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BREDA THE NETHERLANDS
TO MOTHERBOARD(X18)
TO AUDIO CONN.BOARD
TO FISHER CONN.BOARD
TO CONNECTOR BOARD
AUX
TRACKER
TO CONNECTOR BOARD
AUDIO 2
CONNECTOR BOARD
FISHER CONN.BOARD
AUDIO CONN. BOARD
FLATCABLE
TO BACKPANEL TRIAX
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SEE SHEET 130-1 3922 406 88091
SEE SHEET 130-1 3922 406 88081
48V PHANTOM
EXT-REF
TP
EXT2
IC-OUT
+12VOUT
PGND
+5VOUT
DGND
AN0
AN1
SPARE
PRIDACAM
RET PRIDACAM
PRIDATBS
RET PRIDATBS
DN-AIR-TR
RET. DN-AIR-TR
TRACKER MIC
RET TRACKER MIC
PROD-TR
PRODR-TR
ENGSI-TR
CAMMIC-TR
RET TRACKER
+12VOUTTR
AGND
AGND
EXT2
+48VP
AGND
SHIELD AUDIO2
AUDIO2-
AUDIO2+
TP/REV
RET TP/REV
EXT REF
RET EXT REF

# Section 6

# Mechanical Exploded Views

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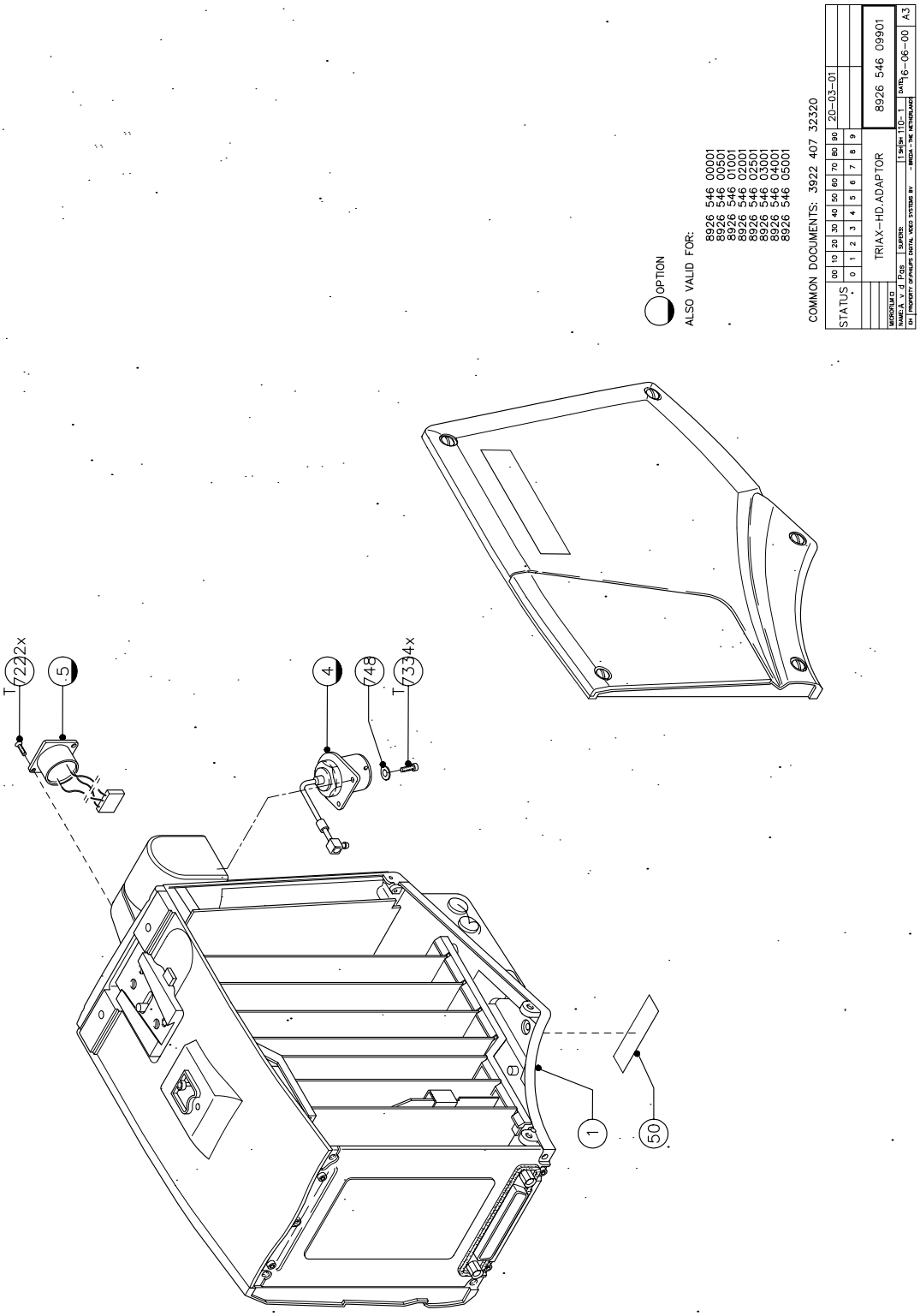
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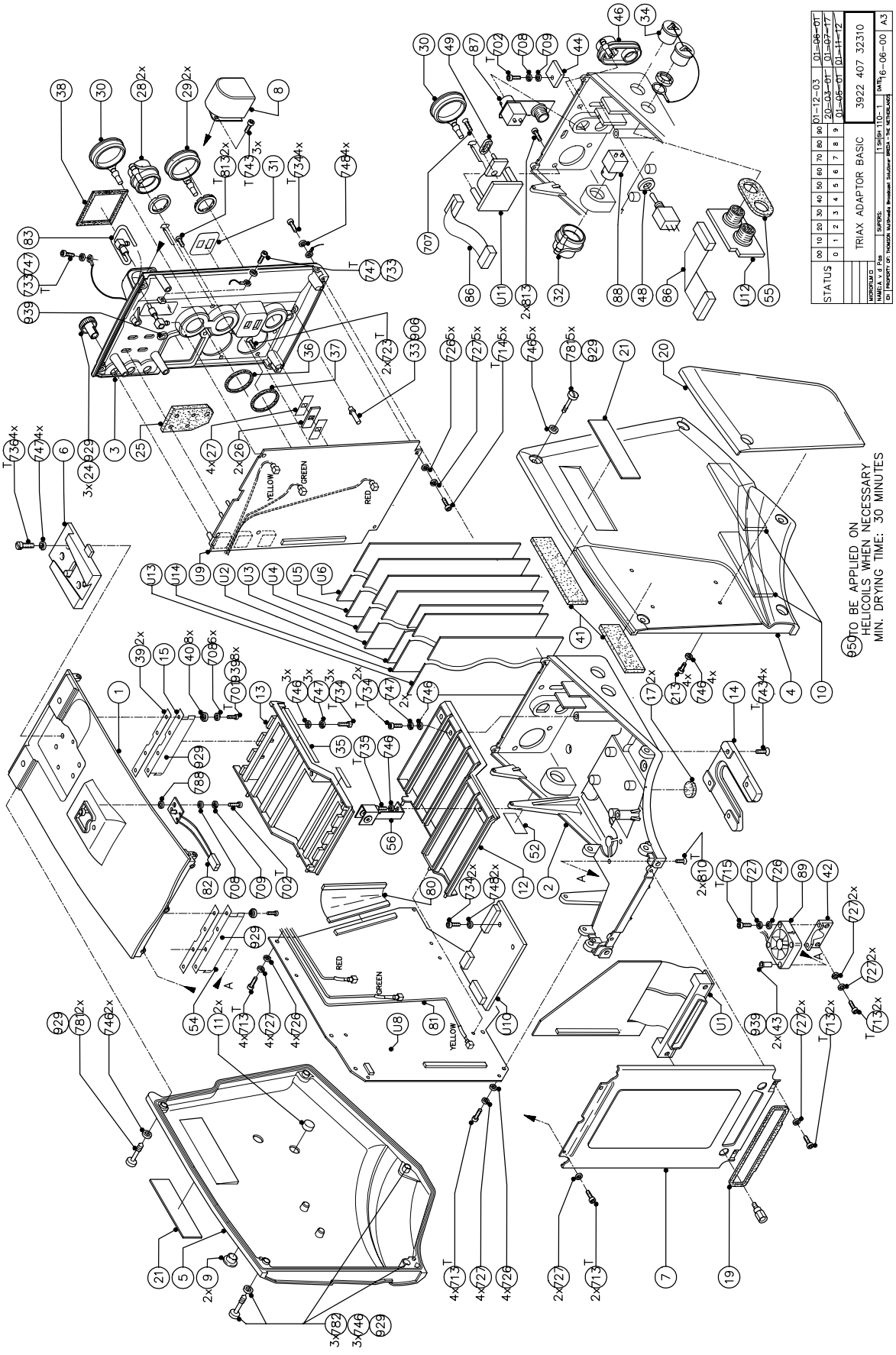
DATE 6-06-00
A3
T722x
5
4
748
T734x
1
50


TRIAX ADAPTOR BASIC
3922 407 32310
STATUS
01-06-01
01-07-17
01-11-12
01-12-03
20-03-01
01-05-01
DATE 16-06-00
A3
TO BE APPLIED ON HELICOILS WHEN NECESSARY
MIN. DRYING TIME: 30 MINUTES
YELLOW
GREEN
RED