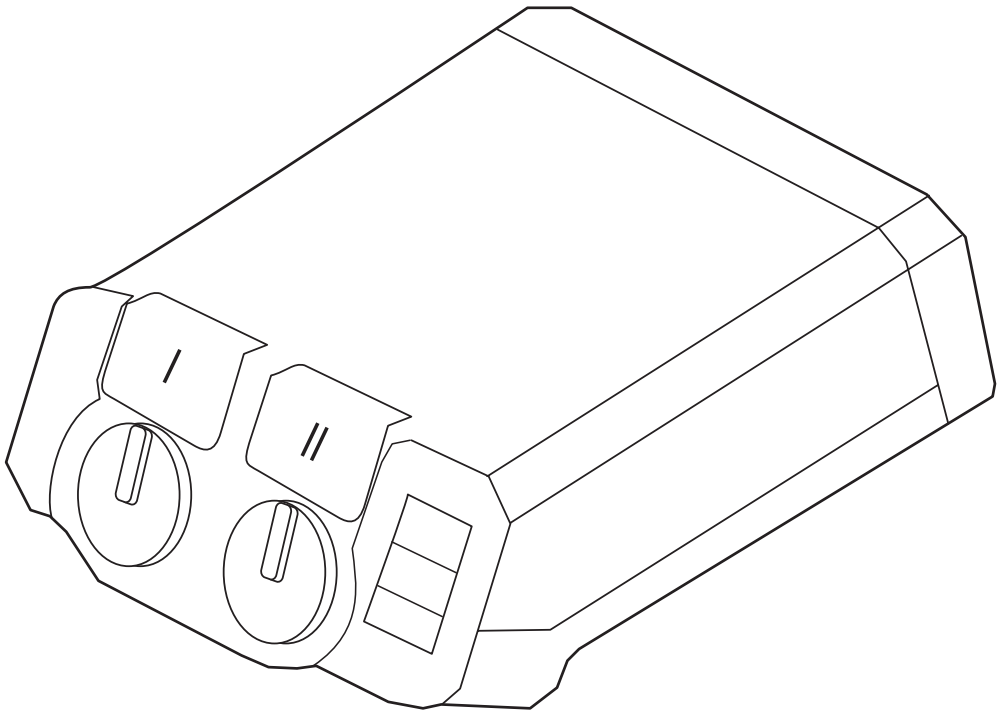
USER MANUAL

MODEL BP325

Belt-Pack Intercom Station



RTS™

9350-5690-00 Rev H 8/02

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38109-709 Rev A 10/97

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PATENT NOTICE

This equipment contains and uses a design embodied in United States Patent No. 4,358,644: “A Bilateral Current Source for a Multi-terminal Intercom”. This design employs a two-wire to four-wire converter.

UNPACKING AND INSPECTION

Immediately upon receipt of the equipment, inspect the shipping container and the contents carefully for any discrepancies or damage. Should there be any, notify the freight company and the dealer at once.

WARRANTY INFORMATION

RTS products are warranted by Telex Communications, Inc. to be free from defects in materials and workmanship for a period of three years from the date of sale.

The sole obligation of Telex during the warranty period is to provide, without charge, parts and labor necessary to remedy covered defects appearing in products returned prepaid to Telex. This warranty does not cover any defect, malfunction or failure caused beyond the control of Telex, including unreasonable or negligent operation, abuse, accident, failure to follow instructions in the Service Manual or the User Manual, defective or improper associated equipment, attempts at modification and repair not authorized by Telex, and shipping damage. Products with their serial numbers removed or effaced are not covered by this warranty.

To obtain warranty service, follow the procedures entitled “Procedure For Returns” and “Shipping to Manufacturer for Repair or Adjustment”.

This warranty is the sole and exclusive express warranty given with respect to RTS products. It is the responsibility of the user to determine before purchase that this product is suitable for the user’s intended purpose.

ANY AND ALL IMPLIED WARRANTIES, INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY ARE LIMITED TO THE DURATION OF THIS EXPRESS LIMITED WARRANTY.

NEITHER TELEX NOR THE DEALER WHO SELLS RTS PRODUCTS IS LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY KIND.

CUSTOMER SUPPORT

Technical questions should be directed to:

Customer Service Department
RTS/Telex,
12000 Portland Avenue South..
Burnsville, MN 55337 U.S.A.
Telephone: (952) 884-4051
Fax: (800) 323-0498

RETURN SHIPPING INSTRUCTIONS

PROCEDURE FOR RETURNS

If a repair is necessary, contact the dealer where this unit was purchased.

If repair through the dealer is not possible, obtain a RETURN AUTHORIZATION from:

Customer Service Department
Telex Communications, Inc.
Telephone: (877) 863-4169
Fax: (800) 323-0498

DO NOT RETURN ANY EQUIPMENT DIRECTLY TO THE FACTORY WITHOUT FIRST OBTAINING A RETURN AUTHORIZATION.

Be prepared to provide the company name, address, phone number, a person to contact regarding the repair, the type and quantity of equipment, a description of the problem and the serial number(s).

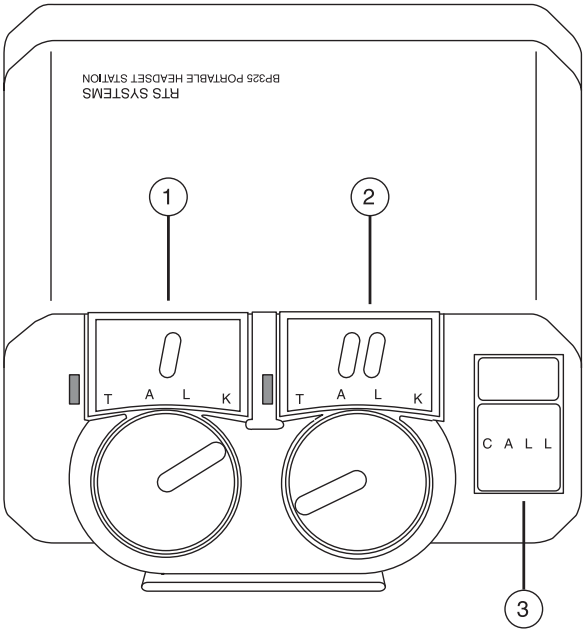
SHIPPING TO MANUFACTURER FOR REPAIR OR ADJUSTMENT

All shipments of RTS products should be made via United Parcel Service or the best available shipper, prepaid. The equipment should be shipped in the original packing carton; if that is not available, use any suitable container that is rigid and of adequate size. If a substitute container is used, the equipment should be wrapped in paper and surrounded with at least four inches of excelsior or similar shock-absorbing material. All shipments must be sent to the following address and must include the Return Authorization.

Factory Service Department
Telex Communications, Incorporated
West 1st Street
Blue Earth, MN 56013 U.S.A.

Upon completion of any repair the equipment will be returned via United Parcel Service or specified shipper collect.

TABLE OF CONTENTS



1. Channel 1 talk button, indicator light and listen volume control.
2. Channel 2 talk button, indicator light and listen volume control.
3. Call button and indicator light.
4. Carbon-mic headset jack. May also be used for external mic switch. See "Programable Options".
5. Program volume control. Active only when using the line loop connector for optional program input. See "Programable Options".
6. Monaural dynamic-mic headset jack.
7. Intercom line loop connector for connection to additional intercom stations. May also be used for external program input, external mic switch, or a non-standard power source. See "Programable Options" and "Alternate Powering Methods".
8. Intercom line connector. For connection to intercom system.
9. Stereo dynamic-mic headset jack.
10. Rear cover removal to set options: Loosen two screws (10a) and remove one screw (10b).

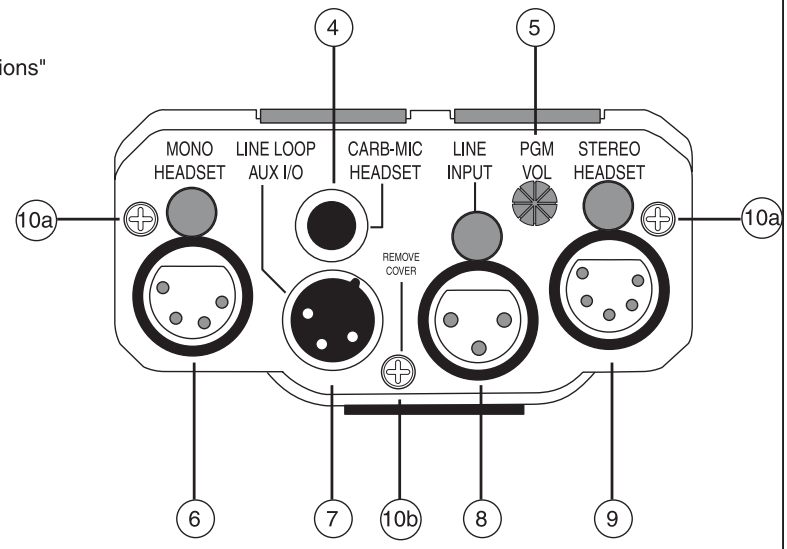


Figure 1. BP325 Reference View

CONNECTIONS AND OPERATION

This section describes operation of the BP325 as supplied from the factory. Use of an RTS power supply to power the intercom system is assumed. For options and use of an alternate power source, see “Programmable Options”, page 3 and “Alternate Powering Methods, page 6.

CONNECTIONS

Headset

Connect a headset using one of the three headset connectors on the back panel. The MONO HEADSET and STEREO HEADSET connectors are for monaural or stereo dynamic-mic headsets. The CARB-MIC HEADSET connector is for a monaural carbon-mic headset. Refer to the specifications for pin-outs of these connectors if needed.

Intercom Channels

Connect the BP325 to the intercom system using the LINE INPUT connector on the back panel.

If desired, connect an additional intercom station to the intercom system using the LINE LOOP connector on the back panel.

OPERATION

1. Attach the BP325 to your belt or other convenient location using the belt clip on the rear panel.

2. Put on the headset and adjust the listen volume controls while listening to the intercom channels.

3. A TALK button may be activated in either of two ways:

   Momentary Mode: Press and hold the TALK button, then speak into the microphone. The green talk LED will remain lit while the TALK button is held. Release the TALK button when finished talking. The talk LED will turn off.

   Latching Mode for Hands-free Conversation: Tap the TALK button (do not press and hold). The green talk LED will turn on and remain on. When finished talking, tap the TALK button again. The talk LED will turn off.

4. Calling an intercom channel:

   a. Turn on the TALK button for the channel to be called (the green talk LED should be lit).

   b. Press and hold the CALL button. The red call LED will light while the button is pressed, indicating that a call signal is being sent. When a response is heard, release the CALL button and begin your conversation.

   c. Turn off the TALK button when finished with your conversation.

5. Receiving a call:

   a. When there is an incoming call on a channel, the red call LED will flash.

   b. If a talk LED is also flashing, this indicates that you need to activate that TALK button to begin your conversation.

   c. If no talk LED is flashing, this indicates that the TALK button is already on; simply begin your conversation.

6. Sending a Talk-off Signal: The BP325 can generate an inaudible signal which can be used to deactivate the talk buttons on other intercom stations connected to an intercom channel. (May be used with models BP325, MCE325 and MRT327). This feature is useful when an unattended intercom station has its microphone activated and is causing noise on an intercom channel. To send a talk-off signal:

   a. Turn off both TALK buttons on the BP325.

   b. Tap the CALL button three quick taps. The red call LED will turn on for about 2 seconds.

   c. While the red call LED is on, momentarily press the TALK button for the channel that has the TALK button to be turned off. This will send the signal and turn off the remote TALK button.

PROGRAMMABLE OPTIONS

Several internal option switches and jumpers can modify the belt pack's operation. The factory settings are summarized below. To change any of the factory settings, remove the rear cover screws as shown in Figure 1. Jumper and switch locations are shown on the label inside the rear cover.

FACTORY SETTINGS

Jumpers (W1-W7)

No.	Description	Factory setting
W1	CH1 Intercom Audio Listen Option note 1	On
W2	CH2 Intercom Audio Listen Option note 1	On
W3	Program input to left headphone Option note 2	Off
W4	Program input to right headphone Option note 2	Off
W5	Stereo/Mono operation Option note 3	Stereo
W6	Not Used	
W7	CARB-MIC Jack Function Option note 4	Headset

DIP Switches (S1)

No.	Description	Factory setting
1	Call Signal Transmit Disable	Off
2	Momentary Only Talk Button, CH2 Option note 5	Off
3	CH2 Talk Disable Option note 6	Off
4	CH1 Talk Disable Option note 6	Off
5	Momentary Only Talk Button, CH1 Option note 5	Off
6	Talk-off Transmit Enable Option note 7	On
7	Not used	Off
8	Talk-off Receive Enable Option note 8	On

OPTION NOTES

1. Listen is factory set to be on all the time on both channels. Setting W1 to the off position will disable intercom listen audio on channel 1 (usually the left headphone of a stereo headset). Setting W2 to the off position will disable intercom listen audio on channel 2 (usually the right headphone of a stereo headset). Listen disable could be used, for example, when you want to use the left side of a stereo headphone exclusively for program audio input and the right side for a single channel of intercom audio. In this case you would:

    a. Set W1 to "off" to disable channel 1 intercom audio listen to the left headphone.

    b. Set DIP switch 4 to "on" to disable channel 1 talk. (See option note 6.)

    c. Setup the left channel for program input. (See option note 2.)

2. To use program audio input:

   a. Unplug the LINE LOOP connector from J6, and plug it into J5. (Refer to the label inside the BP325 rear cover.)

   b. If you are using a stereo headset: set W3 and/or W4 to "on" to route the program audio to the left headphone, right headphone or both headphones. If you are using a mono headset, set both W3 and W4 to "on".

   c. Connect the program source to the LINE LOOP connector using an XLR-3-32 female receptacle wired as follows:

      Pin 1 - Common
      Pin 2 - Program input high
      Pin 3 - Program input low

   d. Adjust program input volume using the PGM VOL control on the back panel.

3. W5 applies to a stereo dynamic-mic headset connected to the STEREO HEADSET jack. With W5 set in the stereo position, intercom channel 1 will be heard in the left headphone only, and channel 2 will be heard only in the right. In the mono position, both intercom channels (and program audio if connected) will be heard in both headphones. If you are using monaural headphones connected to the MONO HEADSET jack, W5 may be left in the stereo position.

4. The CARB-MIC connector may be used to connect either a headset or an external mic on/off switch. (If you are using a carbon-mic headset, but still wish to use an external mic switch, the LINE LOOP connector may alternatively be used for the mic switch. See note 9, below.) To use the CARB-MIC connector for an external mic on/off switch:

   a. Place jumper W7 in the "EXT MIC SW" position.

   b. Use a stereo phone plug to connect the external switch to the CARB-MIC HEADSET jack:

      Tip - Remote Mic Switch Normal-open Contact
      Ring - No connection
      Sleeve - Remote Mic Switch Common

   c. To use the external mic switch, first set one or both TALK buttons to the latched-on position. Then, press the external mic switch to turn the TALK button(s) on. Release the mic switch to turn the TALK button(s) off. Note: the TALK buttons may still be turned on or off from the BP325; however, the external mic switch will not work unless the TALK buttons are first turned on at the BP325.

5. As supplied, the TALK buttons feature a dual-action momentary/latching operation: press and hold for momentary talk, then release when finished; or tap to latch "on" for hands-free talk, and tap again to turn off when finished talking. If desired, the latching operation may be defeated, and the TALK buttons may be operated in momentary mode only.

6. Setting DIP switch 3 to the "on" position will disable the channel 2 TALK button. Setting DIP switch 4 to the "on" position will disable the channel 1 TALK button.

7. As supplied, the BP325 can generate an inaudible talk-off signal which can be used to deactivate the talk buttons on other intercom stations connected to an intercom channel. To turn this feature off, set DIP switch 6 to the "off" position.

8. As supplied, other intercom stations can deactivate the TALK buttons on the BP325 using the talk-off feature from their intercom stations. To disable this feature, set DIP switch 8 in the "off" position.

9. Using the LINE LOOP connector for an external mic on/off switch:

   a. Unplug the LINE LOOP connector from J6 on the circuit board, and plug it into J4.

   b. Connect the external mic switch to the LINE LOOP connector using an XLR-3-32 female receptacle wired as follows:

      Pin 1 - Remote Mic Switch Common
      Pin 2 - No connection
      Pin 3 - Remote Mic Switch Normal-open Contact

c. To use the external mic switch, first set one or both TALK buttons to the latched-on position. Then, press the external mic switch to turn on the TALK button(s). Release the mic switch to turn off the TALK button(s). Note: the TALK buttons may still be turned on or off from the BP325; however, the external mic switch will not work unless the TALK buttons are first turned on at the BP325.

SIDETONE ADJUSTMENT

You can change the level of your own voice heard in your headphones while talking on an intercom channel. Adjust R39 to change your voice level when talking on channel 1. Adjust R52 to change your voice level when talking on channel 2.

ALTERNATE POWERING METHODS

GENERAL

When using an RTS power supply to power the intercom system, power is carried to the BP325 on pin 2 of the LINE INPUT connector along with the channel 1 audio. Pin 1 is the DC return. The unique design of RTS power supplies permits power to be carried on an audio channel. RTS power supplies also provide the proper terminating impedance for each intercom channel. If a non-RTS power supply is used, there are two alternatives for connecting power and intercom audio.

The first method uses channel 1 only to connect the non-RTS power supply. Audio on channel 1 will be unusable as the power supply will look like a short circuit at audio frequencies. Channel 2, however, will still be operational. Also, channel 2 will require a terminating impedance, since this is not supplied by the non-RTS power supply.

The second method allows the use of a non-RTS power supply while still maintaining two audio channels. This method requires an additional wire to the belt pack, and the LINE LOOP connector will not be usable for connecting another intercom station. Also, each intercom channel must be properly terminated. The two methods are discussed below.

METHOD ONE: ONE CHANNEL OPERATION WITH A NON-RTS POWER SUPPLY

Using an XLR-3-32 female connector, connect the external power source and the channel terminating components to the LINE INPUT connector as shown in Figure 2.

If desired, the LINE LOOP connector may be used to connect power and audio to an additional intercom station.

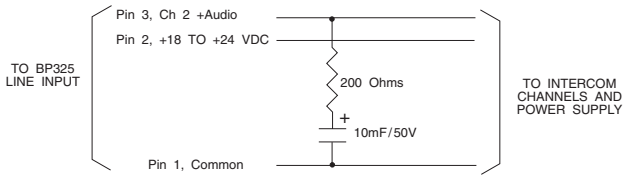


Figure 2. LINE INPUT Connector Wiring for 1-Channel Operation with Non-RTS Power Supply

METHOD TWO: TWO CHANNEL OPERATION WITH A NON-RTS POWER SUPPLY

1. Refering to Figure 1, remove all three screws (10a and 10b) on the back connector panel of the BP325. Remove the rear cover/belt clip assembly.

2. There are two connectors that connect the main circuit board to the front panel circuit board. Pry the tabs on these two connectors to disconnect them. Remove the back connector panel and main circuit board from the belt pack.

3. On the bottom side of the main circuit board, cut the trace as shown in Figure 3.

4. Reassemble the main circuit board and rear connector panel to the belt pack.

   Note: If the rear connector panel becomes separated from the main circuit board at any time, make sure that the shaft of the program volume control knob inserts into the program volume control potentiometer on the main circuit board during reassembly.

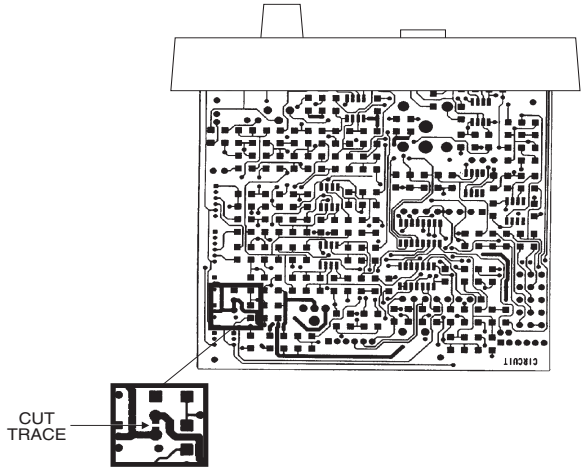


Figure 3. Bottom View of the Main Circuit Board

5. Refering to the label on the inside of the rear cover, unplug the LINE LOOP connector from J6 and plug it into J4.

6. Reassemble the rear cover.

7. Using an XLR-3-32 female receptacle, connect the external power source to the LINE LOOP connector as shown in Figure 4. Connect +DC to pin 2 and connect power supply common to pin 1.

8. Using an XLR-3-32 male plug, connect intercom channels and termination components as shown in Figure 5. Plug this connector into the LINE INPUT jack of the BP325.

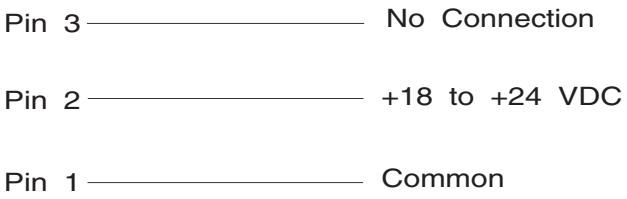


Figure 4. LINE LOOP Connector Wiring for 2-Channel Operation with Non-RTS Power Supply

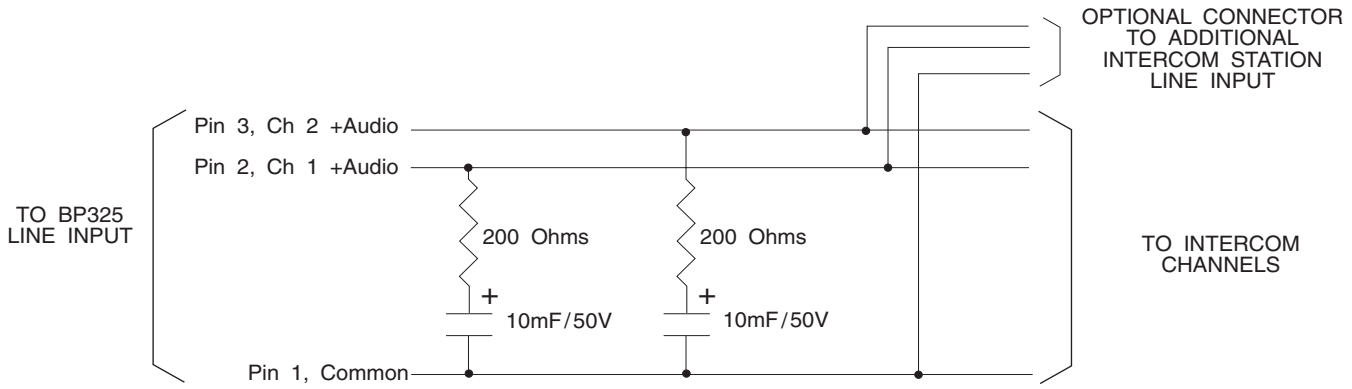


Figure 5. LINE INPUT Connector Wiring for 2-Channel Operation with Non-RTS Power Supply

SPECIFICATIONS

Dimensions
5.00" High x 3.75" Wide x 2.05" Deep
(127mm x 96.3mm x 52.1mm)

Weight
0.5 pounds (225 grams)

Exterior
Polystyrene and polycarbonate mix; gray textured main body

Power Requirements

Input DC Voltage
+18 to +35 volts DC, operating; -200 to +36 volts DC without damage

DC Current
mA
Average talk + call light: 6No signal: 27 milliamperes
Average talk (25 ohm headphones, 10 dB below clipping): 43 0 mA

Impedance Across Intercom Line
10,000 ohms typical

Ambient Temperature Range
Operating: 0° C to 50° C
Storage: -40° C to 125° C

Noise Contribution to 200-0hm Intercom Line
-75 dBu

Headphone Amplifier
Maximum Voltage Gain: 30 dB
Frequency Response: 100 Hz to 8 kHz, +/-3 dB
Headphone impedance: 50 to 600 ohms
Output Power: 150 mW/50 ohms
Output voltage level: 8 volts peak-to-peak

Microphone Preamplifier
Maximum Voltage Gain: 54 dB
Frequency Response: 100 Hz to 8 kHz, +/-3 dB
Input Impedance: 1,000 ohms, balanced
Limiter Range: 30 dB

Program Input
Maximum input level: +20 dBu
Nominal input level: -10 to +8 dBu
Frequency response: 100 Hz to 12 kHz, +/-3 dB

Monaural Dynamic-mic Headset Connector
XLR-4-31 receptacle (J13)
Pin 1 - Microphone low
Pin 2 - Microphone high
Pin 3 - Common
Pin 4 - Headphone high

Stereo Dynamic-mic Headset Connector
XLR-5-31 receptacle (J14)
Pin 1 - Microphone low
Pin 2 - Microphone high
Pin 3 - Common
Pin 4 - Headphone left high
Pin 5 - Headphone right high

Carbon-mic Headset Connector (J1)
1/4-inch, 3-conductor Phone Jack

Used for Headset
Tip - Carbon microphone
Ring - Headphone
Sleeve - Common

Used for Mic Switch
Tip - Remote switch normal-open contact
Ring - No connection
Sleeve - Remote switch common

Intercom Line Input Connector (J11)
XLR-3-31 female receptacle
Pin 1 - Common
Pin 2 - Channel 1 intercom audio and +DC
Pin 3 - Channel 2 intercom audio

Line Loop/Aux Connector (J10)
XLR-3-32 male receptacle

Used for Loop-through:
Pin 1 - Common
Pin 2 - Channel 1 intercom audio and +DC
Pin 3 - Channel 2 intercom audio

Used for Program Input:
Pin 1 - Common
Pin 2 - Program input high
Pin 3 - Program input low

Used for Remote Mic Switch and/or External Power:
Pin 1 - Common
Pin 2 - +18 to +24 volts DC
Pin 3 - Remote switch normal-open contact

SPECIFICATION NOTES:

0 dBu = 0.775 volts rms

0 dBm = 1 milliwatt

All product information and specifications subject to change without notice.

REPLACEMENT PARTS

WHERE TO OBTAIN PARTS

Parts may be obtained directly from RTS at:

Telex/RTS Systems
12000 Portland Avenue South
Burnsville, MN 55337
Phone: (952) 884-4051
Fax: (800) 323-0498

MECHANICAL PARTS

(Reference AS3233 Drawing)

MECHANICAL PARTS			
Item No.	**Qty**	**Description**	**RTS Part No.**
1	1	Front Panel/Chassis	9090-3232-00
2	1	Rear Panel (120V version)	9080-3229-01
	1	Rear Panel (220V version)	9080-3229-00
3	1	Printed Circuit Board Assy (Ref Section 6.3 for electrical parts)	9030-3225-00
4	2	Top/Bottom Cover	9100-3230-00
5	4	Transformer Bracket	9110-2629-00
6	1	Power Transformer (T101)	9140-2623-00
7	8	Washer, #6 Shoulder, Nylon	1006-0017-00
10	16	Screw, 4-40 X 3/8	1008-4035-00
11	8	Screw, 6-32 X 1/4" Pan Head, Phil	1008-6038-00
12	4	Screw, 6-32 X 3/8" Pan Head, Phil	1008-6013-00
13	4	Screw, 6-32 X 2" Pan Hd, Phil	1008-6036-00
14	8	Screw, 8-32 X 3/8" Pan Head, Phil	1008-8022-00
15	8	Washer, Lock, Int Th, #6	1006-0006-00
17	8	Washer, Lock, Int Th, #8	1006-0027-00
18	16	Nut, Keps, #4-40	1007-0001-00
19	4	Nut, Keps, #6-32	1007-0002-00
20	1	Nut, #6-32	1007-0003-00
22	1	Knob, Gray	2703-0002-00
23	1	Cap, Gray with Dot	2705-0001-00
24	1	Fuseholder, PCB Mount	2802-0011-01
25	1	Fuse holder Cap	57074-006

ELECTRICAL PARTS

ELECTRICAL PARTS		
Ref No.	**Description**	**RTS Part No.**
C102	Capacitor, Elect, 22uF, 50V	1513-R226-4I
C103	Capacitor, Elect, 22uF, 50V	1513-R226-4I
C104	Capacitor, Elect, 22uF, 50V	1513-R226-4I
C105	Capacitor, Ceramic, 2200pF, 5kV	517003-003
C106	Capacitor, Ceramic, 2200pF, 5kV	517003-003
C109	Capacitor, Ceramic Disc, 0.01uF, 1kV	1510-R103-2R
C110	Capacitor, Ceramic Disc, 0.01uF, 1kV	1510-R103-2R
C113	Capacitor, Ceramic Disc, 0.01uF, 1kV	1510-R103-2R
C114	Capacitor, Ceramic Disc, 0.01uF, 1kV	1510-R103-2R
C117	Capacitor, Elect, 11000uF, 75V	1513-R119-4K
C121	Capacitor, Elect, 10uF, 50V	1513-R106-4I
C122	Capacitor, Ceramic, Mono, 0.22uF, 50V	1511-R224-2I
C123	Capacitor, Elect, 10uF, 16V	1513-R106-4E
C124	Capacitor, Elect, 100uF, 16V	1513-R107-4E
C125	Capacitor, Ceramic Disc, 0.01uF, 1kV	1510-R103-2R
C126	Capacitor, Ceramic, Mono, 0.1uF, 50V	1511-R104-2I
C127	Capacitor, Ceramic, Mono, 0.01uF, 50V	1511-R103-2I
C128	Capacitor, Elect, 1uF, 35V	1513-R105-4G
C202	Capacitor, Elect, 10uF, 16V	1513-R106-4E
C203	Capacitor, Elect, 10uF, 16V	1513-R106-4E
C204	Capacitor, Elect, 10uF, 16V	1513-R106-4E
C206	Capacitor, Elect, 100uF, 25V	1513-R107-4F
C207	Capacitor, Elect, 100uF, 35V	1513-R107-4G
C208	Capacitor, Ceramic Disc, 220pF, 50V	1510-R221-2I
C209	Capacitor, Ceramic, Mono, 0.22uF, 50V	1511-R224-2I
C210	Capacitor, Ceramic, Mono, 0.1uF, 50V	1511-R104-2I
C211	Capacitor, Ceramic Disc, 120pF, 50V	1510-R121-2I
C212	Capacitor, Elect, 22uF, 50V	1513-R226-4I
C213	Capacitor, Ceramic Disc, 0.1, 500V	1510-R104-2Q
C214	Capacitor, Elect, 22uF, 50V	1513-R226-4I
C215	Capacitor, Ceramic Disc, .01uF, 1kV	1510-R103-2R
C216	Capacitor, Ceramic, Mono, 0.1uF, 50V	1511-R104-2I
C217	Capacitor, Elect, 22uF, 50V	1513-R226-4I
C302	Capacitor, Elect, 10uF, 16V	1513-R106-4E
C303	Capacitor, Elect, 10uF, 16V	1513-R106-4E
C304	Capacitor, Elect, 10uF, 16V	1513-R106-4E
C306	Capacitor, Elect, 100uF, 25V	1513-R107-4F
C307	Capacitor, Elect, 100uF, 35V	1513-R107-4G
C308	Capacitor, Ceramic Disc, 220pF, 50V	1510-R221-2I
C309	Capacitor, Ceramic, Mono, 0.22uF, 50V	1511-R224-2I
C310	Capacitor, Ceramic, Mono, 0.1uF, 50V	1511-R104-2I
C311	Capacitor, Ceramic Disc, 120pF, 50V	1510-R121-2I
C312	Capacitor, Elect, 22uF, 50V	1513-R226-4I
C313	Capacitor, Ceramic Disc, 0.1, 500V	1510-R104-2Q
C314	Capacitor, Elect, 22uF, 50V	1513-R226-4I
C315	Capacitor, Ceramic Disc, 0.01uF, 1kV	1510-R103-2R
C316	Capacitor, Ceramic, Mono, 0.1uF, 50V	1511-R104-2I
C317	Capacitor, Elect, 22uF, 50V	1513-R226-4I
C402	Capacitor, Elect, 10uF, 16V	1513-R106-4E
C403	Capacitor, Elect, 10uF, 16V	1513-R106-4E
C404	Capacitor, Elect, 10uF, 16V	1513-R106-4E
C406	Capacitor, Elect, 100uF, 25V	1513-R107-4F
C407	Capacitor, Elect, 100uF, 35V	1513-R107-4G
C408	Capacitor, Ceramic Disc, 220pF, 50V	1510-R221-2I
C409	Capacitor, Ceramic, Mon, 0.22uF, 50V	1511-R224-2I

ELECTRICAL PARTS		
Ref No.	**Description**	**RTS Part No.**
C410	Capacitor, Ceramic, Mono, 0.1uF, 50V	1511-R104-2I
C411	Capacitor, Ceramic Disc, 120pF, 50V	1510-R121-2I
C412	Capacitor, Elect, 22uF, 50V	1513-R226-4I
C413	Capacitor, Ceramic Disc, 0.1, 500V	1510-R104-2Q
C414	Capacitor, Elect, 22uF, 50V	1513-R226-4I
C415	Capacitor, Ceramic Disc, 0.01uF, 1kV	1510-R103-2R
C416	Capacitor, Ceramic, Mono, 0.1uF, 50V	1511-R104-2I
C417	Capacitor, Elect, 22uF, 50V	1513-R226-4I
C601	Capacitor, Mylar, 0.001uF, 50V	1514-R102-2I
C602	Capacitor, Ceramic Disc, 100pF, 50V	1510-R101-2I
C603	Capacitor, Ceramic, Mono, 0.22uF, 50V	1511-R224-2I
C604	Capacitor, Elect, 47uF, 16V	1513-R476-4E
C605	Capacitor, Elect, 47uF, 50V	1513-R476-4I
C606	Capacitor, Elect, 10uF, 50V	1513-R106-4I
C607	Capacitor, Ceramic Disc, 10pF, 50V	1510-R100-2I
D101	Diode, Rectifier, 7A, MR752	1601-0752-00
D102	Diode, Rectifier, 7A, MR752	1601-0752-00
D105	Diode, Rectifier, 7A, MR752	1601-0752-00
D106	Diode, Rectifier, 7A, MR752	1601-0752-00
D109	Diode, Rectifier, 1A, 1N4004	1601-4004-00
D110	Diode, Rectifier, 1A, 1N4004	1601-4004-00
D111	Diode, Rectifier, 1A, 1N4004	1601-4004-00
D112	Diode, Rectifier, 1A, 1N4004	1601-4004-00
D201	Diode, Zener, 1/2W, 10V, 5%, 1N5240B	1601-5240-0B
D202	Diode, Zener, 1/2W, 20V, 5%, 1N5250B	1601-5250-0B
D203	Diode, Zener, 5W, 36V, 5%, 1N5365B	1601-5365-0B
D204	Diode, Rectifier, 1A, 1N4004	1601-4004-00
D205	Diode, Zener, 1/2W, 20V, 5%, 1N5250B	1601-5250-0B
D206	Diode, Rectifier, 1A, 1N4004	1601-4004-00
D207	Diode, Zener, 1/2W, 5.1V, 5%, 1N5231B	1601-5231-0B
D208	Diode, Zener, 1/2W, 5.1V, 5%, 1N5231B	1601-5231-0B
D209	Diode, Zener, 1/2W, 5.1V, 5%, 1N5231B	1601-5231-0B
D210	Diode, Zener, 1/2W, 5.1V, 5%, 1N5231B	1601-5231-0B
D211	Diode, Signal, 1N914B	1601-0914-0B
D212	Diode, Signal, 1N914B	1601-0914-0B
D214	Diode, Rectifier, 7A, MR752	1601-0752-00
D215	Diode, Signal, 1N914B	1601-0914-0B
D301	Diode, Zener, 1/2W, 10V, 5%, 1N5240B	1601-5240-0B
D302	Diode, Zener, 1/2W, 20V, 5%, 1N5250B	1601-5250-0B
D303	Diode, Zener, 5W, 36V, 5%, 1N5365B	1601-5365-0B
D304	Diode, Rectifier, 1A, 1N4004	1601-4004-00
D305	Diode, Zener, 1/2W, 20V, 5%, 1N5250B	1601-5250-0B
D306	Diode, Rectifier, 1A, 1N4004	1601-4004-00
D307	Diode, Zener, 1/2W, 5.1V, 5%, 1N5231B	1601-5231-0B
D308	Diode, Zener, 1/2W, 5.1V, 5%, 1N5231B	1601-5231-0B
D309	Diode, Zener, 1/2W, 5.1V, 5%, 1N5231B	1601-5231-0B
D310	Diode, Zener, 1/2W, 5.1V, 5%, 1N5231B	1601-5231-0B
D311	Diode, Signal, 1N914B	1601-0914-0B
D312	Diode, Signal, 1N914B	1601-0914-0B
D314	Diode, Rectifier, 7A, MR752	1601-0752-00
D315	Diode, Signal, 1N914B	1601-0914-0B

ELECTRICAL PARTS		
Ref No.	**Description**	**RTS Part No.**
D401	Diode, Zener, 1/2W, 10V, 5%, 1N5240B	1601-5240-0B
D402	Diode, Zener, 1/2W, 20V, 5%, 1N5250B	1601-5250-0B
D403	Diode, Zener, 5W, 36V, 5%, 1N5365B	1601-5365-0B
D404	Diode, Rectifier, 1A, 1N4004	1601-4004-00
D405	Diode, Zener, 1/2W, 20V, 5%, 1N5250B	1601-5250-0B
D406	Diode, Rectifier, 1A, 1N4004	1601-4004-00
D407	Diode, Zener, 1/2W, 5.1V, 5%, 1N5231B	1601-5231-0B
D408	Diode, Zener, 1/2W, 5.1V, 5%, 1N5231B	1601-5231-0B
D409	Diode, Zener, 1/2W, 5.1V, 5%, 1N5231B	1601-5231-0B
D410	Diode, Zener, 1/2W, 5.1V, 5%, 1N5231B	1601-5231-0B
D411	Diode, Signal, 1N914B	1601-0914-0B
D412	Diode, Signal, 1N914B	1601-0914-0B
D414	Diode, Rectifier, 7A, MR752	1601-0752-00
D415	Diode, Signal, 1N914B	1601-0914-0B
D601	Diode, Rectifier, 1A, 1N4004	1601-4004-00
D602	Diode, Rectifier, 1A, 1N4004	1601-4004-00
DS5	Overheat Indicator Lamp	1802-0006-00
DS101	LED, Red	1801-0147-0R
DS201	LED, Green	1801-0147-0G
DS301	LED, Green	1801-0147-0G
DS401	LED, Green	1801-0147-0G
F105	Fuse, 3A Slow Blo (100-120 VAC use)	2801-0018-00
	Fuse, 1.5A Slow Blo (200-240 VAC use)	2801-0019-00
F201	Fuse, 3A Fast Blo	50547-010
F301	Fuse, 3A Fast Blo	50547-010
F401	Fuse, 3A Fast Blo	50547-010
J101	Connector, 3-Pin Audio, Male	2018-0010-00
J102	Connector, 3-Pin Audio, Male	2018-0010-00
J103	Connector, 3-Pin Audio, Male	2018-0010-00
J104	Connector, 3-Pin Audio, Male	2018-0010-00
J105	Connector, 3-Pin Audio, Male	2018-0010-00
J106	Connector, 3-Pin Audio, Male	2018-0010-00
J107	Connector, 4-Pin Audio, Male	2018-0006-00
J108	Connector, 4-Pin Audio, Male	2018-0006-00
J109	Connector, 4-Pin Audio, Male	2018-0006-00
J110	Connector, 3-Pin Audio, Female	2018-0011-00
J111	Connector, Cordset, AC	2018-0012-00
LS-1	Audible Alert	2605-0003-00
Q101	Transistor, NPN, 2N5210	1602-5210-00
Q201	Transistor, NPN, 2N5210	1602-5210-00
Q301	Transistor, NPN, 2N5210	1602-5210-00
Q401	Transistor, NPN, 2N5210	1602-5210-00
R101	Resistor, Carbon, 100K, 5%, 1/4W	1402-1003-5D
R102	Resistor, Carbon, 100K, 5%, 1/4W	1402-1003-5D
R103	Resistor, Carbon, 100K, 5%, 1/4W	1402-1003-5D
R107	Resistor, Carbon, 5.6K, 5%, 1/4W	1402-5601-5D
R108	Resistor, Carbon, 240 ohm 5%, 1/4W	1402-2400-5D
R109	Resistor, Carbon, 1.3K, 5%, 1/4W	1402-1301-5D
R110	Resistor, Carbon, 240 ohm, 5%, 1/4W	1402-2400-5D
R111	Resistor, Variable, Audio, 10K	1406-0032-00
R113	Resistor, Carbon, 10K, 5%, 1/2W	1402-1002-5E
R114	Resistor, Carbon, 4.7K, 5%, 1/4W	1402-4701-5D
R115	Resistor, Carbon, 100K, 5%, 1/4W	1402-1003-5D
R116	Resistor, Carbon, 2.2M, 5%, 1/4W	1402-2204-5D
R117	Resistor, Carbon, 1.0M, 5%, 1/4W	1402-1004-5D

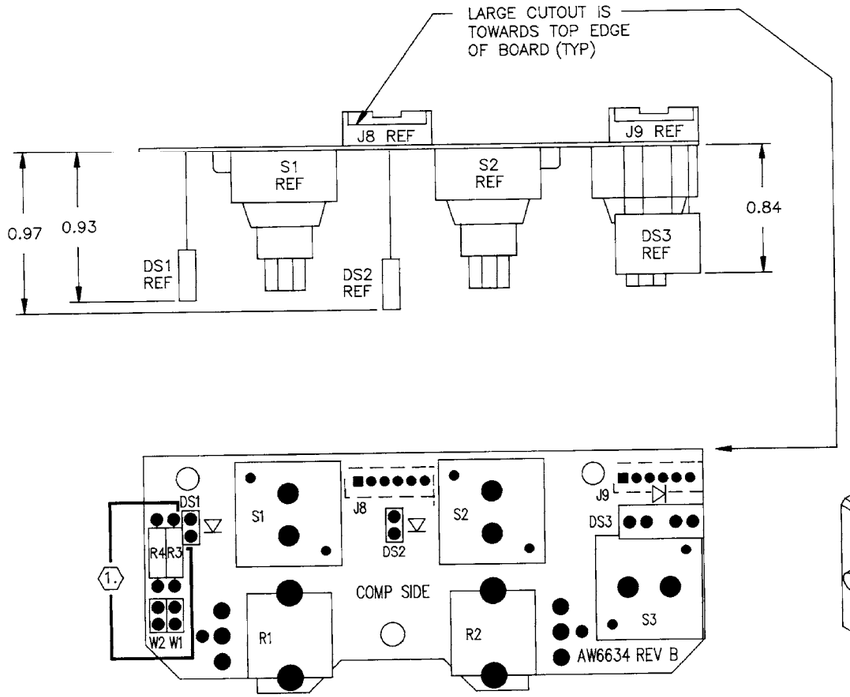
ELECTRICAL PARTS		
Ref No.	**Description**	**RTS Part No.**
R118	Resistor, Carbon, 47K, 5%, 1/4W	1402-4702-5D
R119	Resistor, Carbon, 2.2K, 5%, 1/4W	1402-2201-5D
R120	Resistor, Carbon, 22K, 5%, 1/4W	1402-2202-5D
R121	Resistor, Carbon, 11K, 5%, 1/4W	1402-1102-5D
R122	Resistor, Carbon, 1K, 5%, 1/4W	1402-1001-5D
R123	Resistor, Carbon, 100K, 5%, 1/4W	1402-1003-5D
R201	Resistor, Metal Film, 10.0K, 1%, 1/4W	1403-1002-2D
R202	Resistor, Metal Film, 10.0K, 1%, 1/4W	1403-1002-2D
R203	Resistor, Carbon, 10K, 5%, 1/4W	1402-1002-5D
R204	Resistor, Carbon, 2.7 ohm, 5%, 1/4W	1402-2R70-5D
R205	Resistor, Carbon, 3.6K, 5%, 1/4W	1402-3601-5D
R206	Resistor, Carbon, 10K, 5%, 1/4W	1402-1002-5D
R207	Resistor, Carbon, 390 ohm, 5%, 1/4W	1402-3900-5D
R208	Resistor, Metal Film, 2.26K, 1%, 1/4W	1403-2261-2D
R210	Resistor, Carbon, 22K, 5%, 1/4W	1402-2202-5D
R211	Resistor, Metal Film, 243 ohm, 1%, 1/4W	1403-2430-2D
R212	Resistor, Carbon, 47 ohm, 5%, 1/4W	1402-47R0-5D
R213	Resistor, Carbon, 47 ohm, 5%, 1/4W	1402-47R0-5D
R214	Resistor, Metal Film, 47.5K, 1%, 1/4W	1403-4752-2D
R215	Resistor, Metal Film, 47.5K, 1%, 1/4W	1403-4752-2D
R216	Resistor, Metal Film, 42.2K, 1%, 1/4W	1403-4222-2D
R217	Resistor, Carbon, 100 ohm, 5%, 1/4W	1402-1000-5D
R218	Resistor, Carbon, 10K, 5%, 1/4W	1402-1002-5D
R219	Resistor, Wirewound, 2.0 ohm, 5%, 5W	1404-02R0-5I
R220	Resistor, Metal Film, 100 ohm, 1%, 1/4W	1403-1000-2D
R221	Resistor, Wirewound, 2.0 ohm, 5%, 5W	1404-02R0-5I
R222	Resistor, Carbon, 470 ohm, 5%, 1/4W	1402-4700-5D
R223	Resistor, Metal Film, 42.2K, 1%, 1/4W	1403-4222-2D
R225	Resistor, Metal Film, 100 ohm, 1%, 1/4W	1403-1000-2D
R226	Resistor, Carbon, 22K, 5%, 1/4W	1402-2202-5D
R227	Resistor, Carbon, 3.3K, 5%, 1W	1402-3301-5F
R301	Resistor, Metal Film, 10.0K, 1%, 1/4W	1403-1002-2D
R302	Resistor, Metal Film, 10.0K, 1%, 1/4W	1403-1002-2D
R303	Resistor, Carbon, 10K, 5%, 1/4W	1402-1002-5D
R304	Resistor, Carbon, 2.7 ohm, 5%, 1/4W	1402-2R70-5D
R305	Resistor, Carbon, 3.6K, 5%, 1/4W	1402-3601-5D
R306	Resistor, Carbon, 10K, 5%, 1/4W	1402-1002-5D
R307	Resistor, Carbon, 390 ohm, 5%, 1/4W	1402-3900-5D
R308	Resistor, Metal Film, 2.26K, 1%, 1/4W	1403-2261-2D
R310	Resistor, Carbon, 22K, 5%, 1/4W	1402-2202-5D
R311	Resistor, Metal Film, 243 ohm, 1%, 1/4W	1403-2430-2D
R312	Resistor, Carbon, 47 ohm, 5%, 1/4W	1402-47R0-5D
R313	Resistor, Carbon, 47 ohm, 5%, 1/4W	1402-47R0-5D
R314	Resistor, Metal Film, 47.5K, 1%, 1/4W	1403-4752-2D
R315	Resistor, Metal Film, 47.5K, 1%, 1/4W	1403-4752-2D
R316	Resistor, Metal Film, 42.2K, 1%, 1/4W	1403-4222-2D
R317	Resistor, Carbon, 100 ohm, 5%, 1/4W	1402-1000-5D
R318	Resistor, Carbon, 10K, 5%, 1/4W	1402-1002-5D
R319	Resistor, Wirewound, 2.0 ohm, 5%, 5W	1404-02R0-5I
R320	Resistor, Metal Film, 100 ohm, 1%, 1/4W	1403-1000-2D
R321	Resistor, Wirewound, 2.0 ohm, 5%, 5W	1404-02R0-5I
R322	Resistor, Carbon, 470 ohm, 5%, 1/4W	1402-4700-5D
R323	Resistor, Metal Film, 42.2K, 1%, 1/4W	1403-4222-2D
R325	Resistor, Metal Film, 100 ohm, 1%, 1/4W	1403-1000-2D

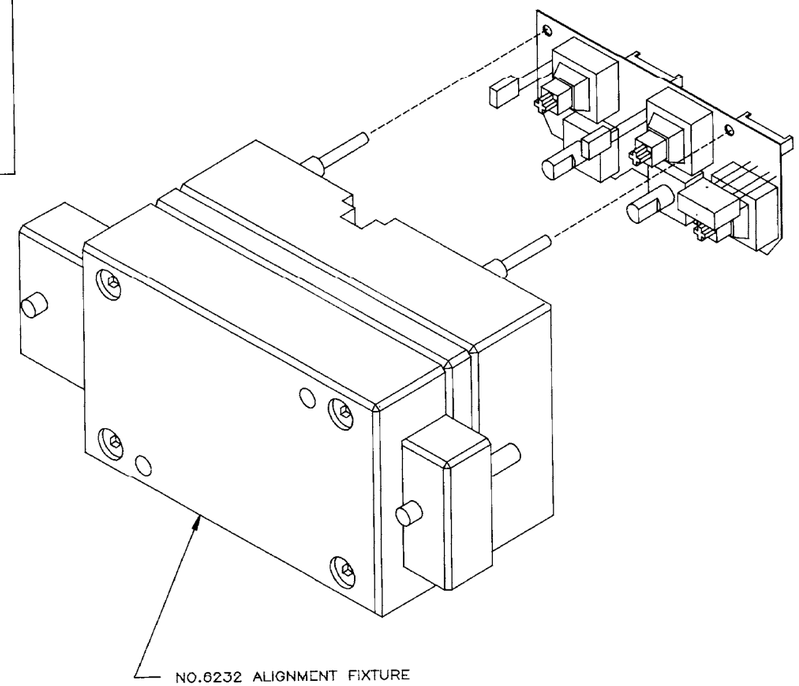
ELECTRICAL PARTS		
Ref No.	**Description**	**RTS Part No.**
R326	Resistor, Carbon, 22K, 5%, 1/4W	1402-2202-5D
R327	Resistor, Carbon, 3.3K, 5%, 1W	1402-3301-5F
R401	Resistor, Metal Film, 10.0K, 1%, 1/4W	1403-1002-2D
R402	Resistor, Metal Film, 10.0K, 1%, 1/4W	1403-1002-2D
R403	Resistor, Carbon, 10K, 5%, 1/4W	1402-1002-5D
R404	Resistor, Carbon, 2.7 ohm, 5%, 1/4W	1402-2R70-5D
R405	Resistor, Carbon, 3.6K, 5%, 1/4W	1402-3601-5D
R406	Resistor, Carbon, 10K, 5%, 1/4W	1402-1002-5D
R407	Resistor, Carbon, 390 ohm, 5%, 1/4W	1402-3900-5D
R408	Resistor, Metal Film, 2.26K, 1%, 1/4W	1403-2261-2D
R410	Resistor, Carbon, 22K, 5%, 1/4W	1402-2202-5D
R411	Resistor, Metal Film, 243 ohm, 1%, 1/4W	1403-2430-2D
R412	Resistor, Carbon, 47 ohm, 5%, 1/4W	1402-47R0-5D
R413	Resistor, Carbon, 47 ohm, 5%, 1/4W	1402-47R0-5D
R414	Resistor, Metal Film, 47.5K, 1%, 1/4W	1403-4752-2D
R415	Resistor, Metal Film, 47.5K, 1%, 1/4W	1403-4752-2D
R416	Resistor, Metal Film, 42.2K, 1%, 1/4W	1403-4222-2D
R417	Resistor, Carbon, 100 ohm, 5%, 1/4W	1402-1000-5D
R418	Resistor, Carbon, 10K, 5%, 1/4W	1402-1002-5D
R419	Resistor, Wirewound, 2.0 ohm, 5%, 5W	1404-02R0-5I
R420	Resistor, Metal Film, 100 ohm, 1%, 1/4W	1403-1000-2D
R421	Resistor, Wirewound, 2.0 ohm, 5%, 5W	1404-02R0-5I
R422	Resistor, Carbon, 470 ohm, 5%, 1/4W	1402-4700-5D
R423	Resistor, Metal Film, 42.2K, 1%, 1/4W	1403-4222-2D
R425	Resistor, Metal Film, 100 ohm, 1%, 1/4W	1403-1000-2D
R426	Resistor, Carbon, 22K, 5%, 1/4W	1402-2202-5D
R427	Resistor, Carbon, 3.3K, 5%, 1W	1402-3301-5F
R601	Resistor, Carbon, 47 ohm, 5%, 1/4W	1402-47R0-5D
R602	Resistor, Carbon, 1K, +5%, 1/4W	1402-1001-5D
R603	Resistor, Carbon, 10K, 5%, 1/4W	1402-1002-5D
R604	Resistor, Metal Film, 60.4K, 1%, 1/4W	1403-6042-2D
R605	Resistor, Metal Film, 60.4K, 1%, 1/4W	1403-6042-2D
R606	Resistor, Carbon, 1K, 5%, 1/4W	1402-1001-5D
R607	Resistor, Metal Film, 20.0K, 1%, 1/4W	1403-2002-2D
R608	Resistor, Metal Film, 20.0K, 1%, 1/4W	1403-2002-2D
R609	Resistor, Carbon, 100 ohm, 5%, 1/4W	1402-1000-5D
R610	Resistor, Carbon, 100K, 5%, 1/4W	1402-1003-5D
S101	Thermal Cut-out	1914-0001-00
S102	Power Switch, Marquardt 1802.1123	1912-0004-00
S104	Switch, Toggle, 3-Position PC Mount	1903-0045-00
S106	Switch, Toggle, SPDT PC Mount	1903-0051-00
S107	Switch, Slide, DPDT, 115/230V	1902-0001-00
S201	Switch, Toggle, SPDT PC Mount	1903-0016-00
S301	Switch, Toggle, SPDT PC Mount	1903-0016-00
S401	Switch, Toggle, SPDT PC Mount	1903-0016-00
T101	Power Transformer	9140-2623-00
T103	Transformer, Audio, 10K:600 ohm	2306-0012-00
U101	Voltage Regulator, LM317HVK	1603-0009-00
U102	Voltage Regulator, LM317T	1603-0317-0T
U103	IC, CD4011AE	1603-4011-00
U201	Voltage Regulator, LM317HVK	1603-0009-00
U202	IC, Dual Op-amp, NE5532N	1603-5532-0N
U301	Voltage Regulator, LM317HVK	1603-0009-00
U302	IC, Dual Op-amp, NE5532N	1603-5532-0N
U401	Voltage Regulator, LM317HVK	1603-0009-00
U402	IC, Dual Op-amp, NE5532N	1603-5532-0N
U601	IC, Dual Op-amp, NE5532N	1603-5532-0N

EATON FILE CORP. IRVINE, CA EFH 34

AS6634
ASSY-PCB, FRT PANEL BP325 2ND GEN

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	A	REV AND REDRAWN TO COMPLY WITH ARTWORK CHANGE. ECO3139 RKB	8/16/90	





NOTES:

1. W1, W2, R3 AND R4 ARE OPTIONAL AND NOT INSTALLED.
2. R1, R2, DS1, DS2, DS3, S1, S2, AND S3 ARE INSTALLED ON COMPONENT SIDE USING ALIGNMENT FIXTURE NO.6232. J8 AND J9 ARE INSTALLED ON CIRCUIT SIDE.

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
REMOVE ALL BURRS & BREAK SHARP EDGES
HOLE TOLERANCES PER ANSI B94.11-1967, R1972
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ±1/16 DECIMALS .X ±.060 .XX ±.030 .XXX±.010 ANGLES ±30'

MATERIAL

FINISH

CONTRACT NO.

APPROVALS	DATE
DRAWN R.K.BOOTH	6/26/90
CHECKED	8/20/90
ISSUED	

RTS SYSTEMS BURBANK, CALIFORNIA, USA

ASSEMBLY-P.C.B., FRONT PANEL, BP325 2ND GENERATION

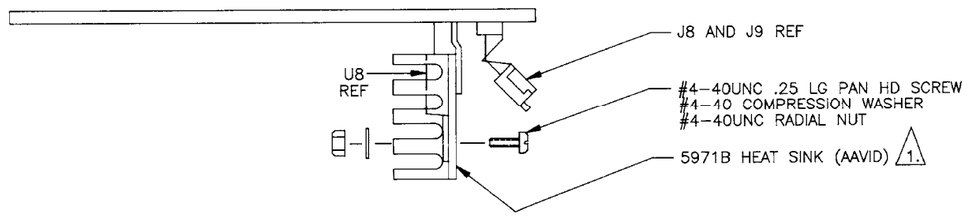
SIZE	FSCM NO.	DWG NO.	REV
C	60572	AS6634	A

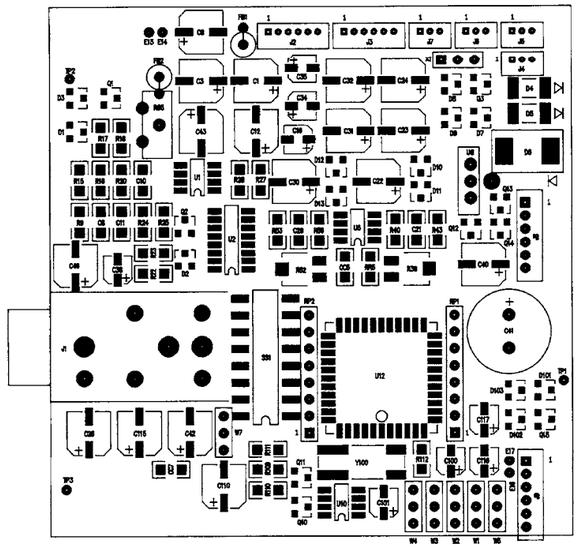
SCALE 1/1 | A6634A01 | SHEET 1

EASI FILE CORP. IRVINE, CA EFH 34

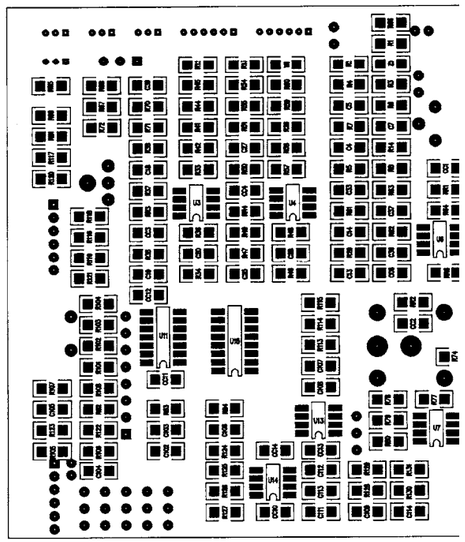
AS6635	B
ASSY-PCB, MAIN BD, BP325	

ZONE	REV	DESCRI
	A	REV AND REDRAWN ARTWORK CHANGES.
	B	REV AND REDRAWN ARTWORK CHANGES.





TOP SIDE



BOTTOM SIDE

NOTES:

1. ATTACH HEATSINK TO REGULATOR (U8) WITH #4-40UNC SCREW, #4-40 COMPRESSION WASHER AND #4-40UNC RADIAL NUT.

AS6737	BP325
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
REMOVE ALL BURRS & BREAK SHARP EDGES
HOLE TOLERANCES PER ANSI B94.11-1967, R1972
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ±1/16 DECIMALS .X ±.090 .XX ±.030 .XXX±.010 ANGLES ±.5°
MATERIAL
FINISH

CONTRACT NO.

APPROVALS	DATE
DRAWN R.K.BOOTH	3/15/90
CHECKED	
ISSUED	

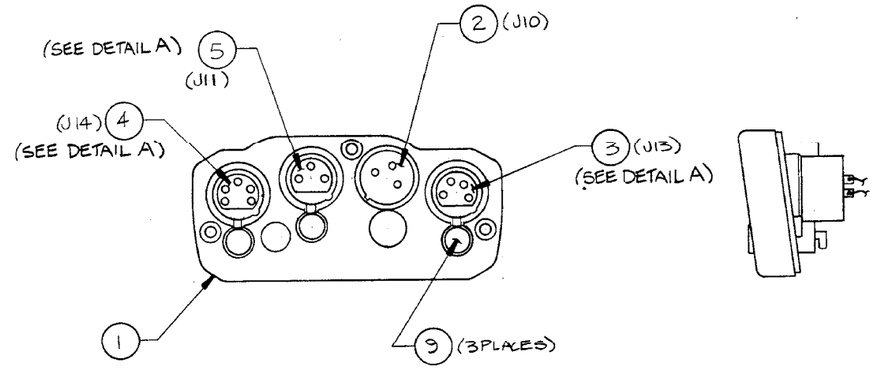
RTS
AS
SU
SIZE C | FSCM 60
SCALE 2/1

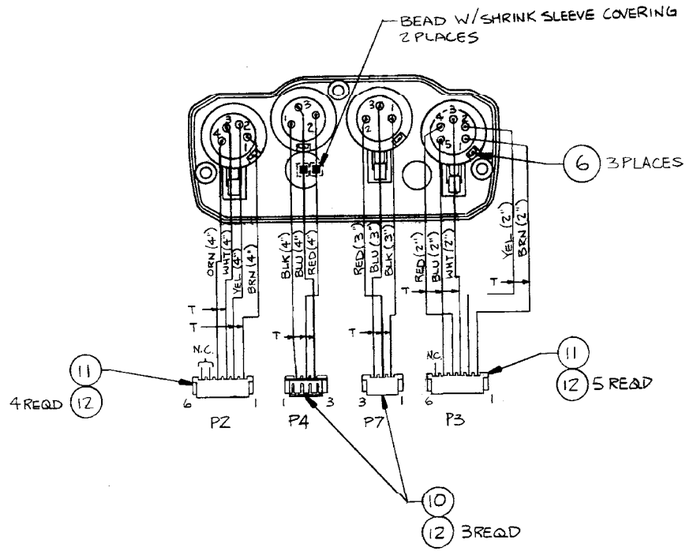
EARL FILE CORP. IRVINE, CA BPM 22

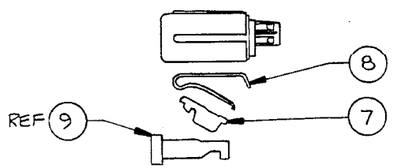
AS6736

ASSY DWG - REAR PNL - BP325 SMT

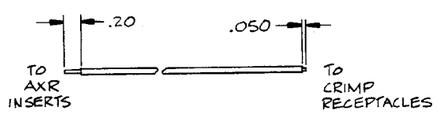
REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	ADDED NOTE 1 PER ECO# 3251 PR	10/24/90	GM 10.24.90







DETAIL A
AXR INSERT ASSY DETAIL
(3 PLACES)



TYP WIRE STRIPPING

SEE SEPARATE PARTS LIST 9020673600

1. SHRINK SLEEVE ALL WIRE CONNECTIONS TO REAR PANEL WITH 3/16" DIA BLK SLEEVE, 0.40" LONG, (15 PLACES).

NOTES: UNLESS OTHERWISE SPECIFIED

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
REMOVE ALL BURRS & BREAK SHARP EDGES
HOLE TOLERANCES PER ANSI B94.11-1987, R1972
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ±1/16 DECIMALS X ±.06 XX ±.01 XXX ±.010 ANGLES ±30'

MATERIAL

FINISH

CONTRACT NO. TW SYSTEMS

APPROVALS	DATE
DRAWN R.T. CRUZ	5.24.90
CHECKED	6.8.90
ISSUED	

DO NOT SCALE DRAWING

RTS SYSTEMS BURBANK, CALIFORNIA

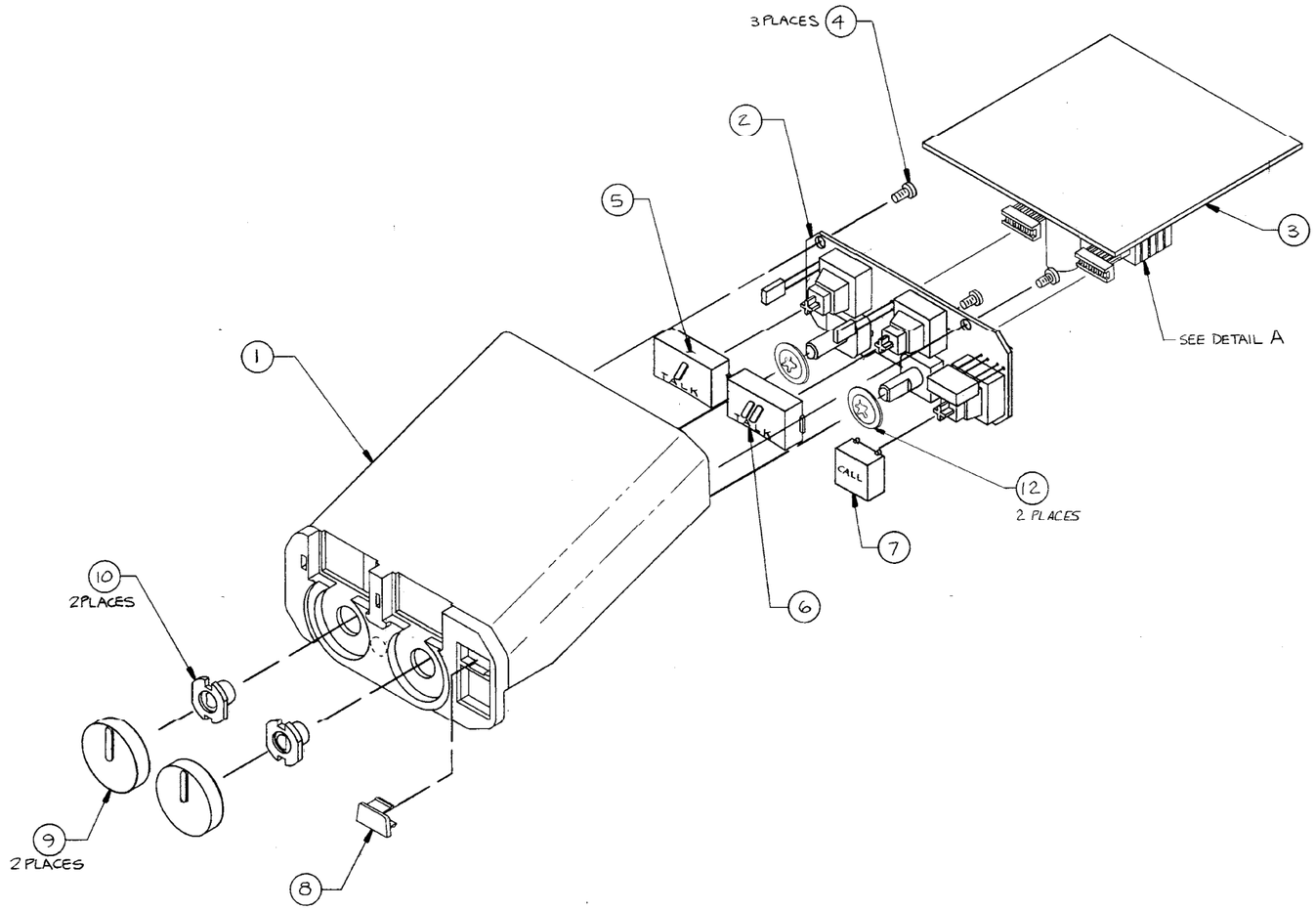
ASSEMBLY DRAWING - REAR PANEL, MODEL BP325 SM

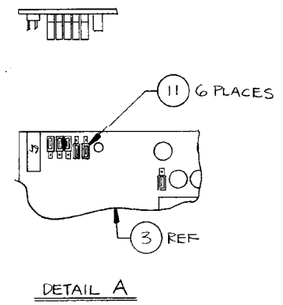
SIZE	FSCM NO.	DWG. NO.	REV.
C	60572	AS6736	A

SCALE — SHEET 1 OF 1

Arch - Eng. Supply Co. 357-0001

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	CHGD LOCATION OF ITEM 11 PER ECO# 3251 RR	10-25-90	SM 10-29-90
	B	ADD WASHER FASTENER, BALLANTINE PER ECO # 54908	12/12/91	MJC MFG. M.O.





DETAIL A

SEE SEPARATE PARTS LIST 9020673700

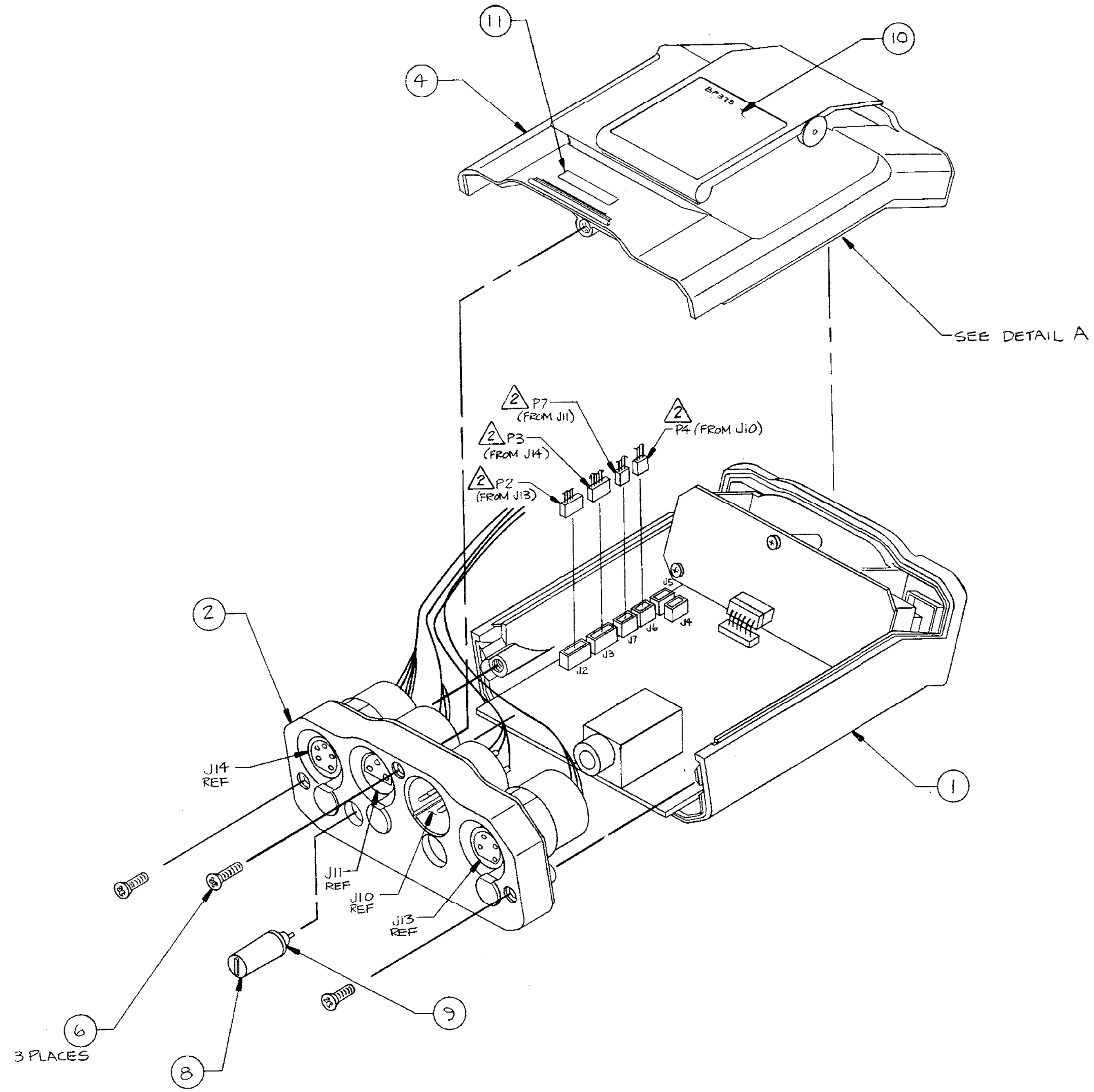
NOTES: UNLESS OTHERWISE SPECIFIED

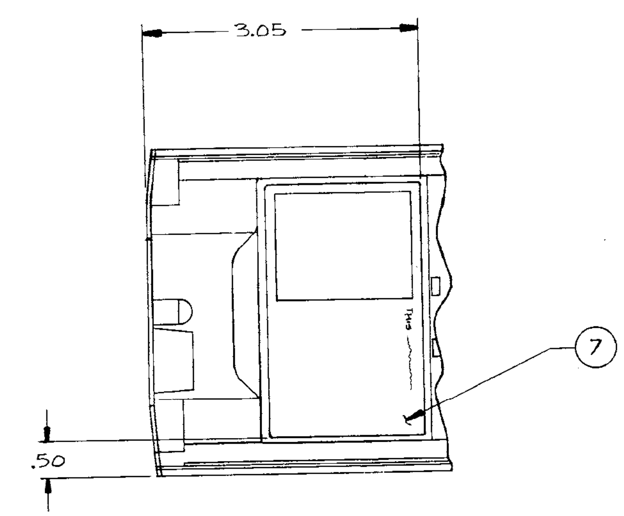
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS ± DECIMALS .XX ± .XXX ± ANGLES ±	CONTRACT NO. TW SYSTEMS	RTS SYSTEMS BURBANK, CALIFORNIA	
MATERIAL	APPROVALS	DATE	ASSEMBLY DRAWING— FRONT/TOP PANEL, BP325 SMT
	DRAWN R.T.CRUZ	5-29-90	
FINISH	CHECKED	6-3-90	
	ISSUED		SIZE D FSCM NO. 60572 DWG. NO. AS6737
DO NOT SCALE DRAWING			SCALE — SHEET 1 OF 1

B.E.

REVISIONS

ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	ADDED NOTE 2 PER ECO# 3251 RTC	10·25·90	GM 10-29-90
	B	UPDATE ARTWORK, ITEM 11 ECO# 56[illegible] BF	10-16-92	JC
	C	CHNG VIEW OF ITEM 11 ECO 60581	5·22·95	JC





DETAIL A

BOTTOM SIDE OF ITEM 4 SHOWN REF

SEE SEPARATE PARTS LIST 9010673800

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS ± DECIMALS .XX ± .XXX ± ANGLES ±	CONTRACT NO. TW SYSTEMS		RTS SYSTEMS BURBANK, CALIFORNIA
	APPROVALS	DATE	FINAL ASSEMBLY — USER STATION, PROGRAMMABLE MODEL BP325 SMT
MATERIAL	DRAWN R.T.CRUZ	5·30·90	
FINISH	CHECKED E.[illegible]	6-8-90	SIZE D FSCM NO. 60572 DWG. NO. AS6738
	ISSUED		
DO NOT SCALE DRAWING			SCALE — SHEET 1 OF 1

NOTES: UNLESS OTHERWISE SPECIFIED

1. SEE SCHEMATIC DIAGRAM SD6635 FOR REF.

2. ROUTE WIRES AS SHOWN, AWAY FROM HEATSINK.

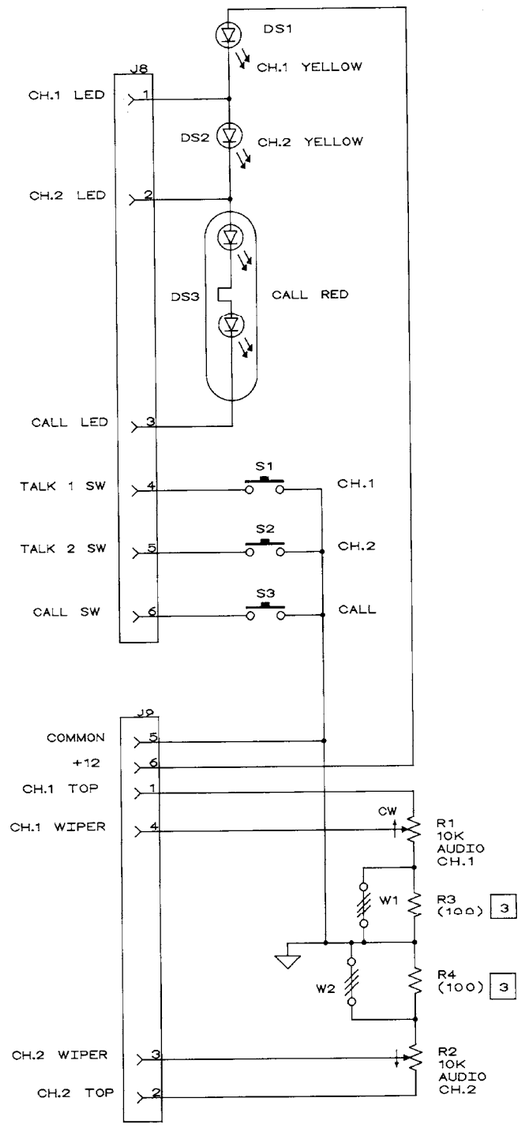
BE, G

EASI FILE CORP. IRVINE, CA SFM 82

SD 6634 | 1 OF 1

SCHEM - FRONT PANEL BRD. BP325SM

Zone	Rev	Description	Date	Apprv
	A	UPDATE PER DESIGN REQUIREMENTS	5-16-90	



3 R3/R4 NORMALLY NOT INSTALLED. W1/W2 ARE CUTTABLE TRACES.

2. ALL CAPACITORS ARE IN MICROFARADS/VOLTS.

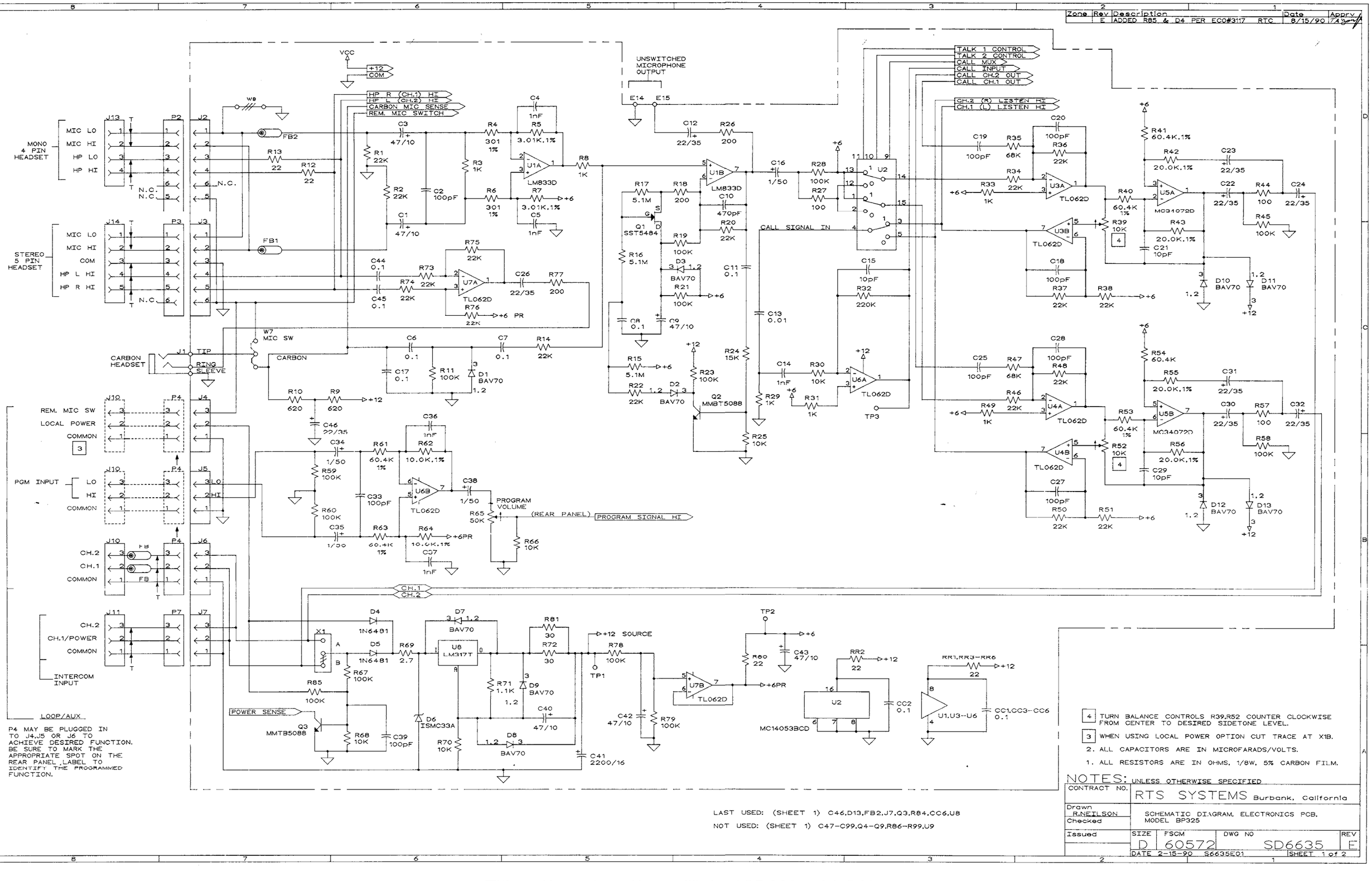
1. ALL RESISTORS ARE IN OHMS, 1/8W, 5% CARBON FILM.

NOTES: UNLESS OTHERWISE SPECIFIED

CONTRACT NO.	RTS SYSTEMS Burbank, California		
Drawn R.NEILSON	SCHEMATIC DIAGRAM. FRONT PANEL BOARD, MODEL BP325SM		
Checked			
Issued	SIZE C	FSCM 60572	DWG NO SD6634 REV A
	DATE 2-13-90	S6634A01	SHEET 1 of 1

Title: c:\home\cms\benedil\view\SD6634_01.CAL

Zone	Rev	Description	Date	Apprv
	E	ADDED R85 & D4 PER ECO#3117 RTC	8/15/90	



P4 MAY BE PLUGGED IN TO J4,J5 OR J6 TO ACHIEVE DESIRED FUNCTION. BE SURE TO MARK THE APPROPRIATE SPOT ON THE REAR PANEL ,LABEL TO IDENTIFY THE PROGRAMMED FUNCTION.

4 TURN BALANCE CONTROLS R39,R52 COUNTER CLOCKWISE FROM CENTER TO DESIRED SIDETONE LEVEL.

3 WHEN USING LOCAL POWER OPTION CUT TRACE AT X1B.

2. ALL CAPACITORS ARE IN MICROFARADS/VOLTS.

1. ALL RESISTORS ARE IN OHMS, 1/8W, 5% CARBON FILM.

NOTES: UNLESS OTHERWISE SPECIFIED

LAST USED: (SHEET 1) C46,D13,FB2,J7,Q3,R84,CC6,U8

NOT USED: (SHEET 1) C47-C99,Q4-Q9,R86-R99,U9

CONTRACT NO.	RTS SYSTEMS Burbank, California			
Drawn R.NEILSON	SCHEMATIC DIAGRAM, ELECTRONICS PCB, MODEL BP325			
Checked				
Issued	SIZE D	FSCM 60572	DWG NO SD6635	REV E
	DATE 2-15-90	S6635E01	SHEET 1 of 2	

Zone	Rev	Description	Date	Apprv
		SEE SHEET 1		

S1 K40-8SM
1 CALL XMIT DISABLE
2 MOM ONLY CH.2
3 TALK 2 DIS
4 TALK 1 DIS
5 MOM ONLY CH.1
6 TALK OFF TX ENABLE
7 X
8 TALK OFF R'CV ENABLE

RP1 22K,8-PIN
RP2 22K,8-PIN

U10 LP2951CM
C100 1/50
C101 1/50
C102 10pF
C103 10pF
C104 100pF
C10 0.1
C12 0.1
Y100 4.000 MHz
R112 2.2M

U12 HD63701V0P
X1, EX2, STBY, VCC, SC1 43 N.C., P30–P37 41–33, P40–P47 31–24, SC2 42 N.C., E 44 N.C.
P10 15, P11 16, P12 17, P13 18, P14 19, P15 20, P16 21, P17 22
P20 9, P21 10, P22 11, P23 12, P24 13
IRQ1 6, RST 7, NMI 5

J8
TALK 1 SW 4
TALK 2 SW 5
CALL SW 6

R101 100K, R102 100K, R103 100K, R104 100K
U11D MC14093BCD
R82 22K, R83 22K, R84 22K
R105 270K, R106 22K, R107 270K, R108 22K
CC11 0.1
U11A MC14093BCD
D101 BAV70
C105 10pF

Q10 MMBT5087, R109 22K, R110 22K, Q11 MMBT5088, R111 22K

U11B MC14093BCD
U11C MC14093BCD

U15 ULN2004A
E16 ALERT E17
R113 270K, R114 270K, R115 270K

R116 470K, R117 470K, R118 470K
R119 47K, R120 47K, R121 47K, R122 3K
Q12 MMBT5087, Q13 MMBT5087, Q14 MMBT5087, Q15 MMBT5088
R123 39
D102 BAV70, D103 BAV70
J8 CH.1 LED, CH.2 LED, CALL LED

TALK 2 CONTROL
TALK 1 CONTROL
CALL MUX
CALL CH.1 OUT
CALL CH.2 OUT
CALL INPUT
VCC
+12
GROUND
REM MIC SW
POWER SENSE
CARBON MIC SENSE
HP LEFT (CH.1) HI
HP RIGHT (CH.2) HI

J9
CH.1 WIPER 4
CH.1 TOP 1
CH.2 WIPER 3
CH.2 TOP 2
6 +12
5
C117 1/50
C116 1/50

W1 ON OFF CH.1 (LEFT)
W3 PROGRAM L
W5 MONO STEREO
W2 CH.2 (RIGHT)
W4 PROGRAM R

CH.2 (RIGHT) LISTEN HI
CH.1 (LEFT) LISTEN HI
PROGRAM SIGNAL HI

R124 22K, C106 0.1, CC13 0.1, U13 LM386M-1, C110 47/10, C109 0.1, R128 2.7, R129 22K, C108 0.1, C107 1nF
R125 47K
R126 22K, CC14 0.1, U14 LM386M-1, C115 47/10, C114 0.1, R130 2.7, R131 22K, C113 0.1, C112 1nF
R127 47K, C111 0.1

LAST USED: (SHEET 2) C117,D103,J9,Q15,R131,RR6,S1,U15,W7,Y100
NOT USED: (SHEET 2) D100,R100

CONTRACT NO.	RTS SYSTEMS Burbank, California			
Drawn R.NEILSON	SCHEMATIC DIAGRAM, ELECTRONICS P.C.B., MODEL BP325			
Checked				
Issued	SIZE D	FSCM 60572	DWG NO SD6635	REV E
	DATE 2-15-90	S6635E02	SHEET 2 of 2	