RTS SYSTEMS
PROFESSIONAL INTERCOMMUNICATIONS
PROFESSIONAL AUDIO PRODUCTS
1100 WEST CHESTNUT STREET
BURBANK, CALIFORNIA 91506
PHONE 818/843-7022
TELEX 194855

Series 800 Intercom
MODEL 802
Master Station

NOTICE:

"Warning: This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instructions manual, 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 equipment 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."

Specifications For RS232 Operation

The following criteria are established as requirements for the RS232 communications option for the RTS Systems Model 802.

1. Operate and interrogate all front panel buttons.
2. Inhibit operation of front panel buttons.
3. Determine Status of all DIP switches (byte wide).
4. Read and modify all programmable (RAM) memory.
5. Operate all relays, talk/listen gates, key lines independently of button positions.
6. Initiate a warm or cold start.
7. Always send out a code upon operator initiation of warm or cold start.
8. On command, send out a code upon operator initiation of any function, front panel or DIP switch change.
9. RS232 software should never cause the 802 to hang or lock up.
10. Host computer should have the ability to write and execute machine code in RAM for diagnostic or other purposes.

RS232 Language Implementation

For RS232 communications, the buttons are numbered from 1 to 48.

The physical front panel buttons are numbered 1 to 32. Certain connections to the rear panel are numbered 33 to 48.

Code	Definition
1-12	Top row of front panel buttons.
13-24	Second row of front panel buttons.
25-32	Function buttons, front panel, bottom row.
33	External camera iso input.
34	External global reset tally.
35	External mic.
37-48	Call light inputs (from phase lock loops).

By treating the external contacts as if they were front panel buttons, the external host computer can turn them on or off, inhibit the function completely (in either the on or off position), assign a relay to the function, force a chime signal, et cetera.

Command Structure

All commands will be initiated by a letter, followed by a numeric modifier, followed by an operator, followed by a terminating carriage return. The command letter indicates the major functions such as BUTTON, KEY, RELAY, MEMORY, et cetera. The numeric modifier usually refers to which button, or relay or memory is associated with that particular command. The operator tells the 802 whether to turn something on (+) or off () or to inquire about its present state (?).

Some commands have no modifiers or operators such as WARM START or COLD START or VERSION.

All commands must be terminated in a carriage return before the 802 will act on them.

Command lines must be limited to 128 characters in length. (Only the load memory command has the capability of exceeding this limit.)

Error Handling

The 802 cannot stop when it encounters a confusing a command, it will simply ignore the entire command. Specific errors include a command letter not in its command table, a numeric modifier that is out of range (for example, relay 12), and unrecognizable operator, et cetera. Upon detection of an error, the interpreter will normally ignore the remainder of a command.

The 802 will send out the letter E along with a 2 digit code indicating where the command interpreter was confused:

Code	Definition
E00	Syntax error.
E01	Output buffer overflow.
E03	Unrecognizable command modifier (+,-, or ? expected).
E04	Number out of range (for example, illegal button number).
E10	RS232 framing or parity error.
E20	RS422 framing or parity error.

Examples of Commands and Responses

The following examples of host computer commands use button 12, relay 5, address 0100 (hex) as examples.

Function	Host Command	802 Response
Turn Button On:	B12+	None
Turn Button Off:	B12-	None
Test Button Status:	B12?	+or-
Inhibit Button's Use By Operator (function may be on or off)	I12+	None
Allow Button's Use By Operator:	I12-	None
Test If Inhibited:	I12?	+ or -
Assign Relay To Button:	B12R5+	None
Remove Relay Assignment:	B12R5-	None
Test Which Relays Assigned To Which Button:	B12R?	123456 (or any combination)
Turn On Relay:	R5+	None
Turn Off Relay:	R5-	None
Test Relay Status:	R5?	+ or -
Turn On a Gate:	G12+	None
Turn Off a Gate:	G12-	None
Test Gate Status:	G12?	+ or -
Turn On Key	K12+	None
Turn Off Key	K12-	None
Test Key Status	K12?	+ or -
Load Memory	M0100, 04, 0D,	None
Dump Memory	D0100	0100: 04 0D 0A 00
Dump Additional Memory	D	0110: BC 9A 88 C3
Enter Setup Mode	S+	None
Exit Setup Mode	S-	None
Execute at Address	X0100	None

Eavesdrop Mode

The eavesdrop mode sends to the host computer an indication of whether the operator has turned a function on or off. It reflects the status of the panel light under the button.

Function	Host Command	802 Response
Turn Eavesdrop Mode On:	E+	None until a button pushed by the operator turns a function on (B12+) or off (B12-). B12- (if 12 turned off)
Turn Eavesdrop Mode Off:	E-	None
Test Eavesdrop Mode:	E?	+ or -
Warm Start:	C	C
Version Number:	V	RTS021284

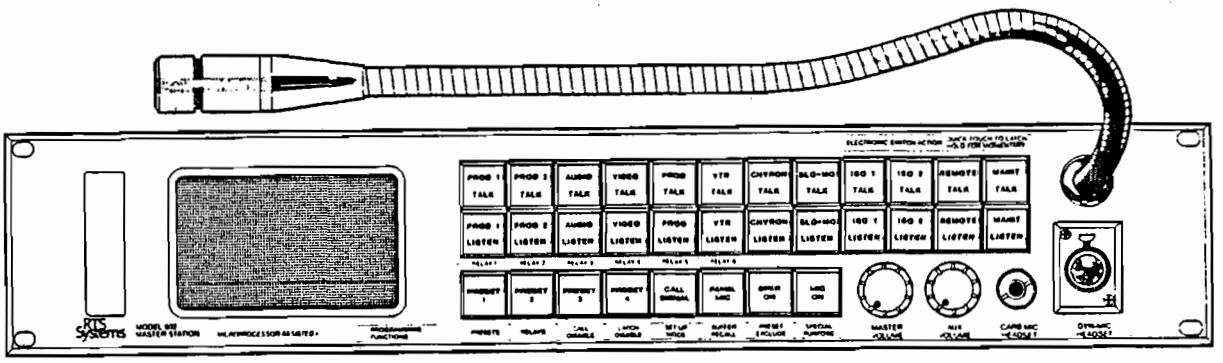
Possible problems with relay command: The relays are updated every time a button is pushed or released. This means that if the host computer turns on a relay, it may be turned off the next time the operator pushes any button.

Keys and gates have a similar problem, but will only be affected if the operator pushed the button associated with that particular key or gate.

Rev. B Changes: Page 3, Host Command, Lines 4, 5 6,: Change 112 to I12.

All product information and specifications subject to change without notice.

MODEL 802 MASTER STATION,
TECHNICAL DATA PACKAGE, TDP 3510
OCTOBER 1986 / SECOND EDITION/Written & Edited by Stan Hubler
RTS SYSTEMS, INC.
1100 W. CHESTNUT ST., BURBANK, CALIFORNIA 91506, U,S.A.



MODEL 802 MASTER STATION

PROPRIETARY NOTICE

PATENT NOTICE

The Model 802 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 bilateral current source operated as a two-wire to four-wire converter.

NOTE: DETAILED INFORMATION CONCERNING THEORY OF OPERATION, MAINTENANCE, SPARE PARTS AND SYSTEM INTERCONNECTION IS AVAILABLE IN: **"THE MODEL 802 MASTER STATION TECHNICAL MANUAL"**, WHICH MAY BE OBTAINED FROM EITHER AN RTS SYSTEMS' DEALER OR DIRECTLY FROM THE FACTORY.

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RTS SYSTEMS' LIMITED WARRANTY

The products of RTS Systems, Inc., a California corporation, are warranted to be free from defects in materials and workmanship for a period of one year from the date of sale.

RTS Systems' sole obligation during the warranty period is to provide, without charge, parts and labor necessary to remedy covered defects appearing in products returned prepaid to RTS Systems, 1100 W. Chestnut Street, Burbank, California, 91506, U.S.A.. This warranty does not cover any defect, malfunction or failure caused beyond the control of RTS Systems, including unreasonable or negligent operation, abuse, accident, failure to follow instructions in the Owner's Manual, defective or improper associated equipment, attempts at modification and repair not authorized by RTS Systems, 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" listed below.

This warranty is the sole and exclusive express warranty given with respect to RTS Systems 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 RTS SYSTEMS NOR THE DEALER WHO SELLS RTS SYSTEMS' PRODUCTS IS LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY KIND.

RETURN SHIPPING INSTRUCTIONS

PROCEDURE FOR RETURNS

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

If repair through the dealer is not possible, contact the RTS Systems Order Service Department by telephone, as directed below, to obtain a Return Authorization Number.

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

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

Questions regarding returns for repair should be directed to:

Customer Service Department
RTS Systems, Inc.
1100 W. Chestnut St.
Burbank, CA 91506

TELEPHONE: (818) 840-7311
TELEX: 194855
TWX: 910-498-4987
TELEFAX: (818) 846-5197

SHIPPING TO MANUFACTURER FOR REPAIR OR ADJUSTMENT

All shipments of RTS Systems, Inc. equipment 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 should be directed to the attention of the Order Service Department and must include the Return Authorization Number.

Upon completion of repairs equipment will be returned via United Parcel Service or specified shipper, collect.

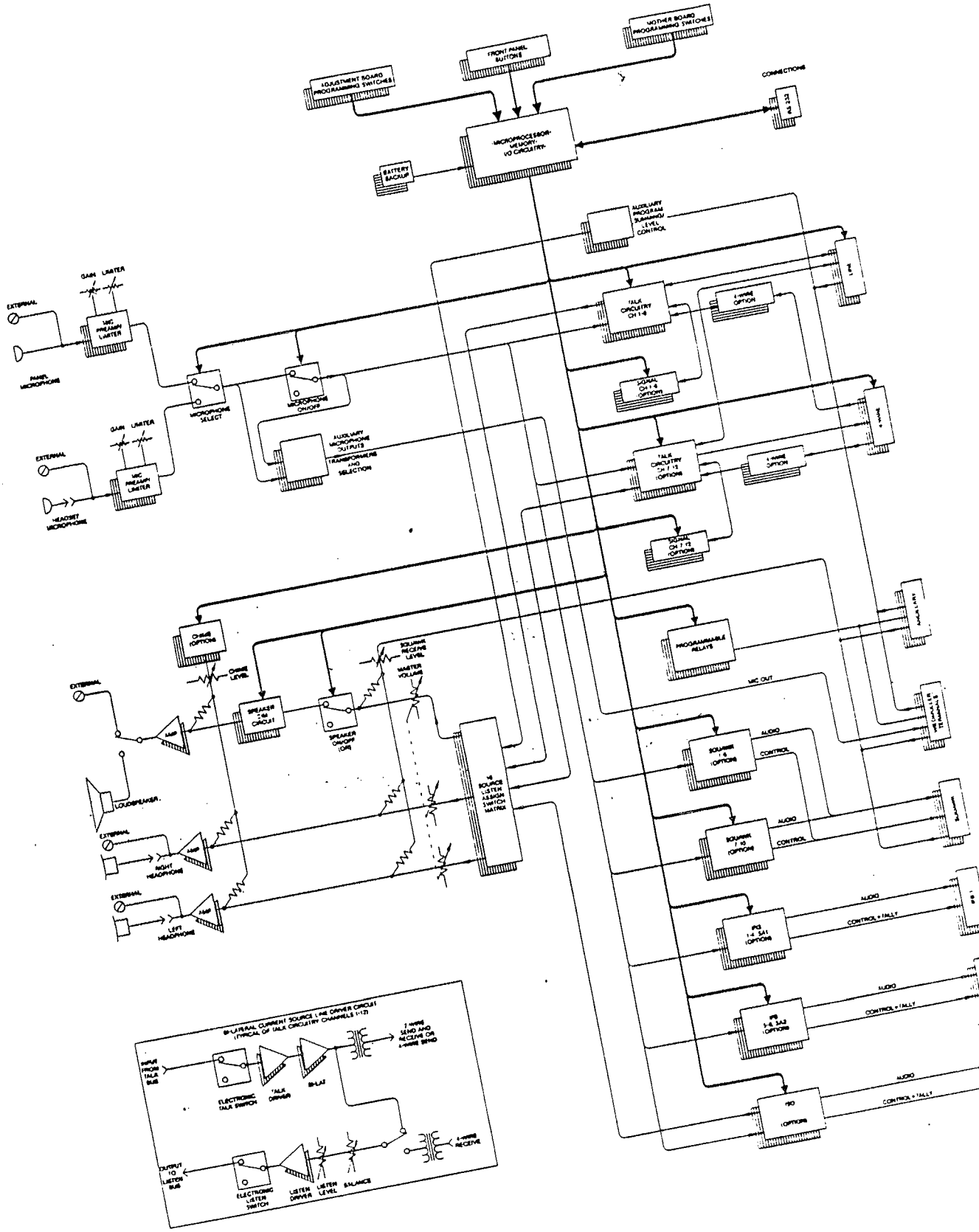


FIGURE 1-1

MODEL 802 BLOCK DIAGRAM

SECTION 1: DESCRIPTION, OPERATION, AND SPECIFICATIONS

MODEL 802 DESCRIPTION/OPERATION

The Model 802 Master Station, is a microprocessor-assisted communications control center. Each Master Station is a "stand alone" unit, that can be be used either singly or in multiples. A Master Station can connect to, access, and a control a variety of different communications systems, including the RTS Systems: 1) "TW" intercom system, 2) IFB system, and 3) station isolate system.

In addition, each Master Station functions as a multi-channel communications unit, used either:

(1) as a unit along a multi-unit conference bus or

(2) as a unit in a multi-unit point-to-point matrix-style communications system or,

(3) as a combination of (1) and (2) above.

The Master Station Block Diagram, Figure 1-1, shows the Master Station functional components, input/output connections, and controls.

Functional Components:

1) Two microphone preamplifiers each with a limiter

2) A panel microphone/headset microphone select electronic switch

3) A microphone on/off electronic switch

4) "Talk circuitry" consisting of:

Talk channel select electronic switches

"Bilateral current source" line drivers

Listen balance controls

Individual listen level controls

Individual listen electronic switches

(Continued)

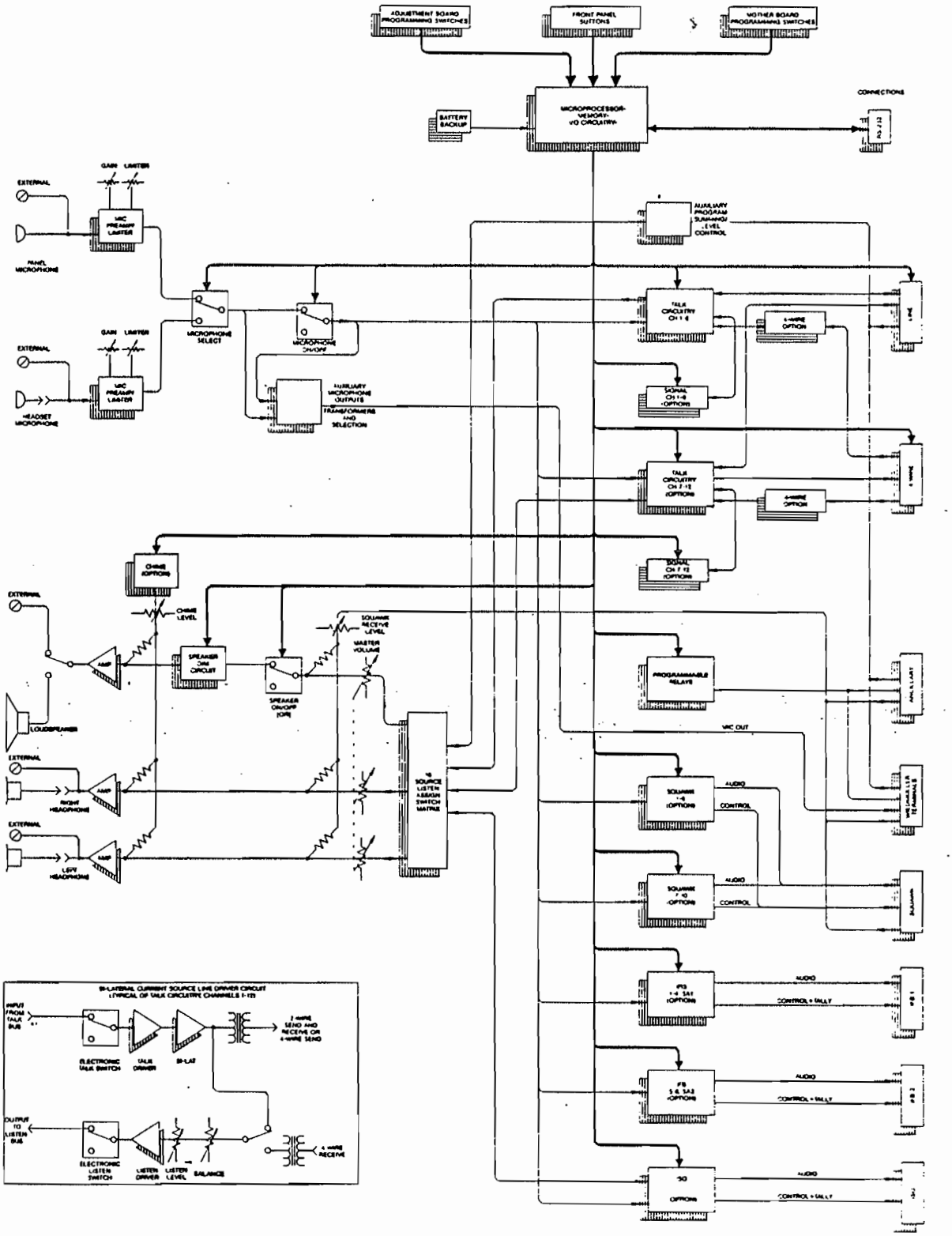


FIGURE 1-1
MODEL 802 BLOCK DIAGRAM

Functional Components: (Continued)

5) A 16-source listen assign switch matrix

6) A "master" listen volume control

7) A two channel (stereo) headphone amplifier

8) A speaker on/off electronic switch

9) A speaker "dim" electronic switch

10) A speaker amplifier

11) An internal speaker disable switch

12) A microprocessor control system, which includes:

Front panel button inputs (32)

Talk and listen electronic switch control outputs

Microphone and speaker electronic switch control outputs

Relay control outputs (6)

Key outputs (12)

Headset present sense input

User programmed memory with battery backup

Adjustment board programming input switches (8)

Mother board programming input switches (8)

Additional outputs to control some options

"Reset" switch (tells microprocessor to reconfigure, using adjustment and mother board programming inputs)

Factory installed "firmware" (operating system for microprocessor)

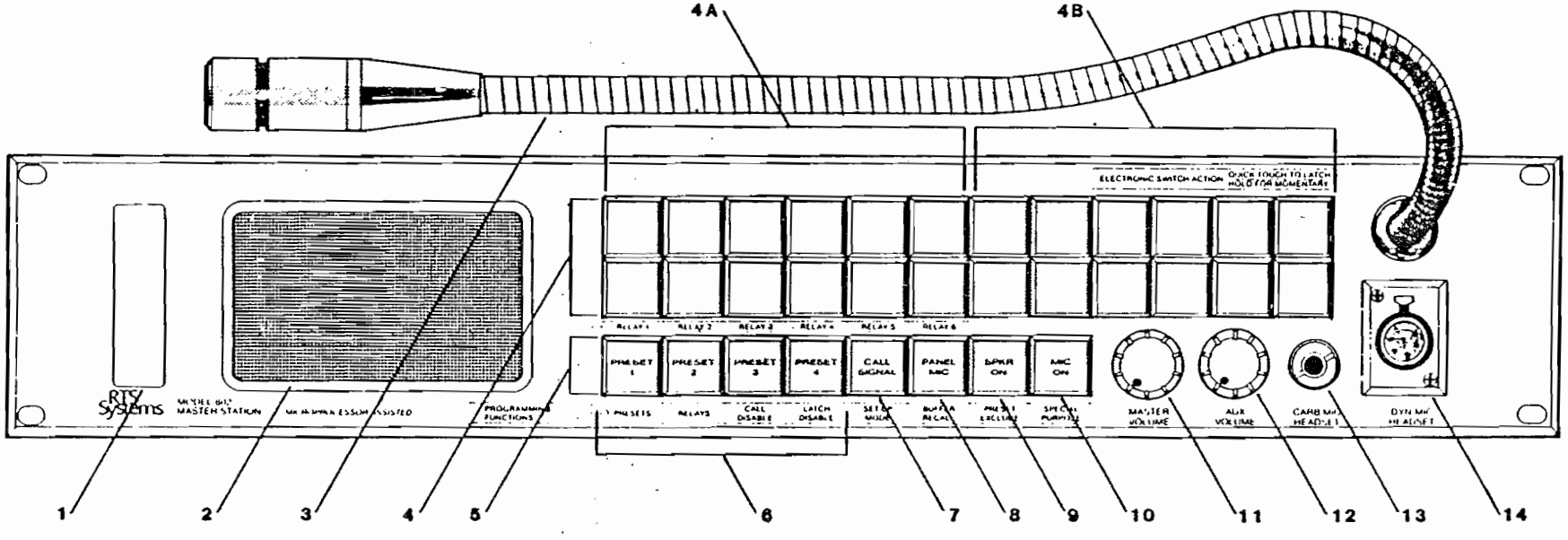


FIGURE 1-2
MODEL 802 FRONT PANEL

FRONT PANEL: DESCRIPTION AND OPERATION (See Figure 1-2)

The front panel contains 24 selector buttons {4}, eight operation buttons {5}, master {11} and auxiliary {12} volume controls, loudspeaker {2}, gooseneck microphone {3}, dynamic {14} and carbon {13} microphone headset connectors, and access to the adjustment board {1}.

The selection {4} and operation {5} buttons have different functions when the Model 802 is switched from the standard, "operating" mode to the "programming" mode. Legends under each button show its "programming" function. See Section 3 for programming instructions.

In the basic Model 802, the first twelve selection buttons {4A} activate the talk circuits (top buttons), and listen circuits (bottom buttons) of intercom channels 1 through 6. The remaining twelve selection buttons {4B} become operational with the addition of options. Normally, the eight operation buttons {5} work as follows: PRESET 1 through PRESET 4 {6} can be user-programmed to activate, by the push of a single button, combinations of audio and control circuits. The CALL SIGNAL button {7} enables the signalling function, when the unit is equipped with this option. The PANEL MICrophone enable button {8} selects the rront panel gooseneck microphone and deactivates the headset microphone; if no headset is plugged in, PANEL MICrophone only is automatically selected. The SPeaKeR ON button {9} turns on the loudspeaker. Note: the headset listen circuit is always on. The MICrophone ON button {10} turns on the microphone in use (headset or panel).

Most of the front panel buttons feature a special momentary / latching dual-action: if a button is pressed quickly, the function will "latch", (turning "on" if off, turning "off" if on); if the button is held slightly longer, the action will be momentary and the function will turn off when the button is released. (Note: This "latching" function can be disabled. See Section 3 for details).

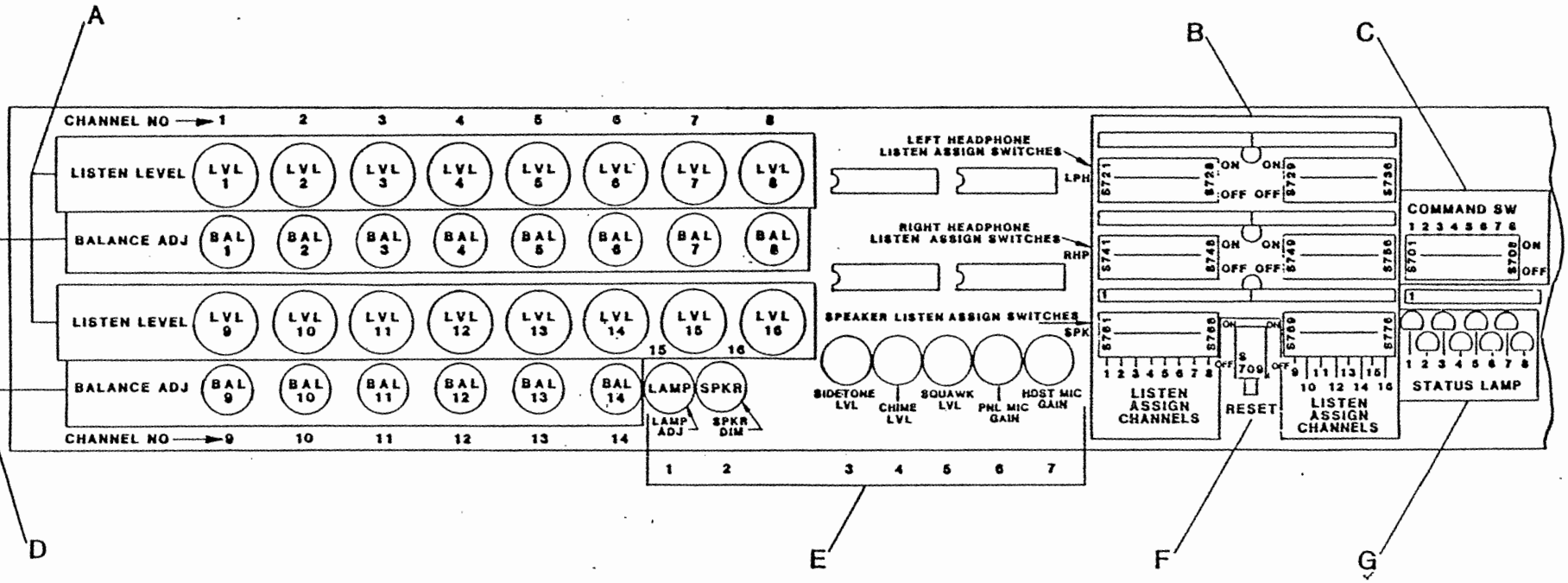
THE MASTER VOLUME {11} control sets the level of the sum of all audio sources going to the left and right side of the stereo headphone and loudspeaker (exceptions: chime and squawk receive levels).

The AUXiliary VOLUME {12} control sets the level of the two auxiliary program audio inputs (and sends it to the MASTER VOLUME control).

The CARBon MICrophone HEADSET jack {13} accepts a standard 3-conductor 1/4" phone plug. The necessary DC excitation voltage is provided to power carbon microphones or their electronic equivalent.

The DYNamic MICrophone HEADSET {14} connector accepts a stereo earphone, dynamic microphone headset.

FIGURE 1-3
MODEL 802 ADJUSTMENT BOARD



ADJUSTMENT BOARD: DESCRIPTION AND OPERATION (Figure 1-3)

The Adjustment Board is located to the left of the loudspeaker. Release the board by first pressing and releasing the small rectangular panel ({1} on the front panel illustration), and then pulling it forward.

Located on the board are sixteen individual listen level controls {A}, fourteen 4-turn 2-wire intercom balance controls {D}, seven auxiliary function controls {E}, three groups of sixteen audio source assignment switches {B}, eight programming switches {C}, the microprocessor reset button {F}, and the status indicator lamps {G}.

The LISTEN LEVEL controls {A} 1--12 adjust the incoming levels of the twelve primary intercom channels. Compensate for level differences by adjusting these controls.

The BALANCE controls {D} only function in the 2-wire intercom mode. Adjust the BALANCE control on each channel to null your own microphone signal in the loudspeaker or headphones. Channel 13 LISTEN and BALANCE controls are used in the "ISO" function. Channel 14 LISTEN LEVEL and BALANCE controls are reserved for future use. LISTEN LEVEL controls 15 and 16 adjust the levels of the AUXILIARY PROGRAM inputs 1 and 2.

In the Auxiliary Control section {E}, the first control {E1} adjusts the button illumination brightness; the second control {E2} adjusts the loudspeaker level change when the microphone is switched on. The SIDETONE LEVEL {E3} adjusts the loudness of your own microphone signal heard in your own headset. The CHIME LEVEL {E4} sets the volume of the incoming chime signal (when chime option is installed). The SQUAWK LEVEL {E5} sets the volume of the incoming squawk signal (when squawk option is installed). The PANEL MIC GAIN {E6}, and HEADSET MIC GAIN {E7} adjust the gain of the respective microphone preamplifier to compensate for differences in microphone levels or individual's voices.

The ASSIGNMENT SWITCHES {B} assign the 16 primary audio sources in any combination to the left or right side of the stereo headset or to the loudspeaker. These 16 sources are:

INTERCOM CHANNELS 1-12
"ISO" listen
AUXILIARY PROGRAM #1
AUXILIARY PROGRAM #2
SPARE

The RESET button {F} is used to reset the microprocessor. This is required when initially installing certain options or making certain programming changes on the Mother Board. The STATUS LAMPS {G} are used for diagnostic purposes.

The PROGRAMMING switches {C} are used to set up various special operating modes. See Figure 2-32A on page 44 for illustration.

REAR PANEL: DESCRIPTION AND OPERATION (See Figure 2-10)

The Model 802 is connected to other Model 802's, other systems, and external equipment using the connections on the Rear Panel.

The LINE {2} connector, ANCILLARY {3} connector, and {8} screw terminal strips are present on a basic Model 802.

The optional IFB {4}, SQUAWK {5}, 4-WIRE {6}, and ISO {7} connectors are installed only as a part of the various options.

The screw terminals {8}, provide connection to the six sets of single-pole double-throw (SPDT=form C) relay contacts, microphone on/off remote control (momentary action only--not alternate action), Model VCP 6 or VCP 12 Iso Control Station, external headset connector, external microphone input, auxiliary program inputs, microphone preamplifier outputs, external loudspeaker, and power input.

The LINE connector {2} contains the balanced audio circuits and keying circuits for intercom channels 1-12, as well as connection to Auxiliary Program Input #2. In normal 2-wire operation, each audio pair functions as a full-duplex two-way communication circuit; while, in the 4-wire mode, the same pairs function as the send portion of each circuit assigned to 4-wire operation.

The ANCILLARY connector {3} connects to: 1) six sets of programmable relay contacts, 2) the microphone on/off remote control, 3) the squawk receive input, and 4) two auxiliary program balanced inputs.

The IFB {4}, SQUAWK {5}, and ISO {7} connectors are plug-in compatible with Model 4010 Central Electronics, Model SQJ1010 Central Junction Interconnect, and Model VIE306 Station Isolate Electronics, repectively.

The 4-WIRE connector {6} contains channels 1-12 4-wire receive circuits, channels 7-12 4-wire talk (send) circuits and channels 7-12 keying circuits.

The optional AUX connector {1} directly accesses the microprocessor via an RS-232 bus, only as a part of custom software applications.

INTERFACING TO OTHER EQUIPMENT

DIRECT: An 802 connects directly to external equipment via the line connector, the back panel terminals and the ANCILLARY connector.

SYSTEM: The Model 862 System Interconnect provides direct connection of up to 12 channels of TW Intercom, as well as audio inputs and outputs, and switching circuits. Signals interfaced via the 862 are common to all 802's in the system.

DIRECT with OPTIONS: An individual 802, equipped with standard options, can connect with Series 4000 IFB System or the TW Intercom Station Isolate System.

SPECIFICATIONS

Color:	Gray, Federal Standard 595A: Color #26492
Weight:	18 pounds (8.2 kilograms)
Dimensions:	3.5 inches (89 millimeters) high 19.0 inches (483 millimeters) wide 14.3 inches (363 millimeters) deep (Excluding connector/microphone and adjustment board clearances)

Inputs

Dynamic Microphone	
Source Impedance	50-1000 ohms
Level	-55 dBu nominal
Carbon Microphone	
Level	-15 dBu nominal
Excitation	10 to 16 milliamperes
Four-Wire Receive Level	-20 ±10 dBu into 10 kilohms, balanced/floating
Squawk Input Level	0 ±10 dBu into 20 kilohms, unbalanced
Program Input Level	0 ±10 dBu into 20 kilohms, balanced/floating
Power	16-20 volts ac rms at 3 amperes maximum 18-26 volts dc at 2 amperes maximum

Outputs

Headphone Level	8 volts pp into 25 ohms
Speaker Level	10 volts pp into 8 ohms
Mic Out Level "LINE"	0 dbu nom.,source:400 ohms,balanced,floating
Mic Out Level "MIC"	-54 dBu nom.,source:10 ohms,balanced,floating
Relay Contacts	1 amp, 24 volts dc maximum 0.5 amp, 110 volts ac maximum
Bilateral Line: Driver Outputs	10 milliamperes pp max(2V pp/200 ohms) 3 milliamperes pp avg(2/3 V pp/200 ohms)
4-Wire Send (Current Source) Output Levels:	10 milliamperes pp max(6V pp/600 ohms) 3 milliamperes pp avg(2 V pp/600 ohms)

Key Outputs (Open Collector): 0.5 amperes, 50 volts dc maximum

MODEL 56-16 POWER SUPPLY

Input:	117 volts ac ±10% 50/60 Hertz, 1.7 amps 234 volts ac ±10% 50/60 Hertz, 0.85 amps
Output:	16 volts ac, 3.5 amps

SECTION 2: INSTALLATION

MECHANICAL INSTALLATION The 802 Speaker Master Station is a rack (or console) mountable enclosure, 3.5 inches (89 mm) high by 19.0 inches (483 mm) wide by 14.3 inches (363 mm) deep. The mounting holes are standard E.I.A. spacing. The panel microphone requires a minimum of 5.0 inches (127 mm) front panel clearance, and the adjustment board requires 11 inches (279 mm). Allow an additional 2.0 inches (51 mm) for the rear panel connectors.

When installing this station, allow space for control access, cabling and servicing. Provide space for: cabling service loops, connectors, and cables. If the headset connector is remotely located, allow space between this cable and interfering sources such as TV monitors, power supplies and equipment with internal power supplies.

The Model 56-16 power supply, when used should be mounted at least 1 to 2 feet away from the Model 802 to minimize hum pickup.

ELECTRICAL INSTALLATION/POWER The 802 receives electrical power from either (1) the Model 56-16 ac power supply (supplies 16 vac at 3 amps) or (2) a user supplied system power supply. The power requirement for the Model 802 is 16-20 volts ac rms/3 amperes or 16-28 volts dc 2 amperes. Input power (mains power) to the Model 56-16 is switch selected to either 120 vac ±10% or 230 vac ±10%, 50/60 Hz ±10%. Connect power to the Model 802 as shown in Figure 2-1.

WARNING For 230 volt operation, change fuse F1, on the Model 56-16, to a 0.375 amps slow-blow 3AG type. For metric style fuses, use part # 2802-0006-00 (metric fuse adapter).

NOTE Always connect the green safety wire from earth or safety ground to the chassis of the Model 802 (TB16-3).

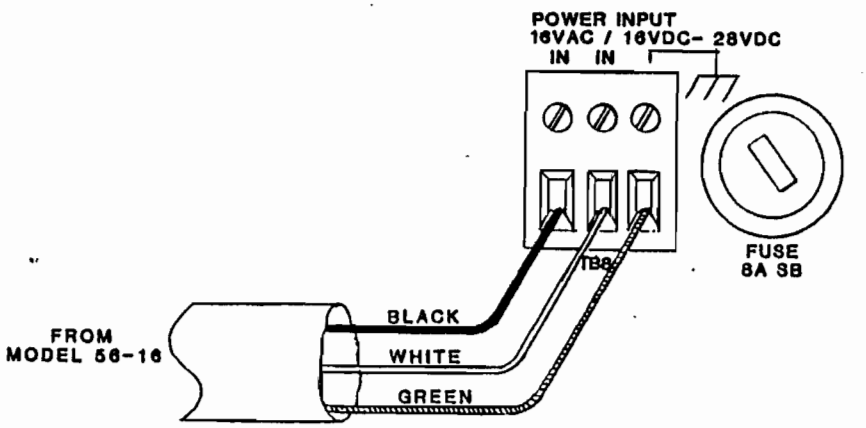


FIGURE 2-1
MODEL 802 POWER SUPPLY CONNECTIONS

ELECTRICAL INSTALLATION/GROUNDING The Master Station chassis should be connected to earth ground or power line safety ground. Each Master Station is bypassed to its own chassis via a 0.1 microfarad capacitor and 22 kilohm resistor in parallel to prevent interference from radio stations.

ELECTRICAL INSTALLATION/SIGNALS/GENERAL

Model 802 system configurations are:

1) All Model 802 Master Station(s)
2) Model 802 Master Station(s) & Model 862 System Interconnect
3) Model 802 Master Station(s) plus TW Intercom System

In the "All Master Station(s) Configuration" (see Figure 2-2), interconnect the stations using Model 4025 splitter assemblies. Connect the Model 802 LINE connectors (J-101) to the Model 4025 splitter assembly as shown in Figure 2-2. Terminate the system by connecting terminator plug of Figure 2-3 to Model 4025.

In the "Master Station(s) and Model 862 Configuration" (see Figure 2-4), interconnect the stations using either the multiple connectors on the rear of the Model 862, Model 4025 splitter assemblies or a combination of both. Terminate the system by connecting terminator plugs (Figure 2-5) to jacks J5--J8 of the Model 862. Two terminators are required for a 6-channel system. Four terminators are required for a 12-channel system. On a 6-channel system, install terminator plugs in Model 862 "CH 1-2-3" (J5) and "CH 4-5-6" (J6) connectors. On a 12-channel system install terminator plugs in Model 862 "CH 1-2-3" (J5), "CH 4-5-6" (J6), "CH 7-8-9" (J7), and "CH 10-11-12" (J8).

To mechanically secure the cable to the Model 802 rear panel:

(1) Remove the screw just to the left of J-101,
(2) Plug the cable into J-101,
(3) Secure the cable connector by screwing the captive screw in the connector into the hole left in step (1), above,
(4) Use a cable tie to secure the other side of the connector, using the cable tie loop on the rear panel of the Model 802.
Caution Using one screw only (and omitting cable tie) to secure cable connector may damage rear panel connector.

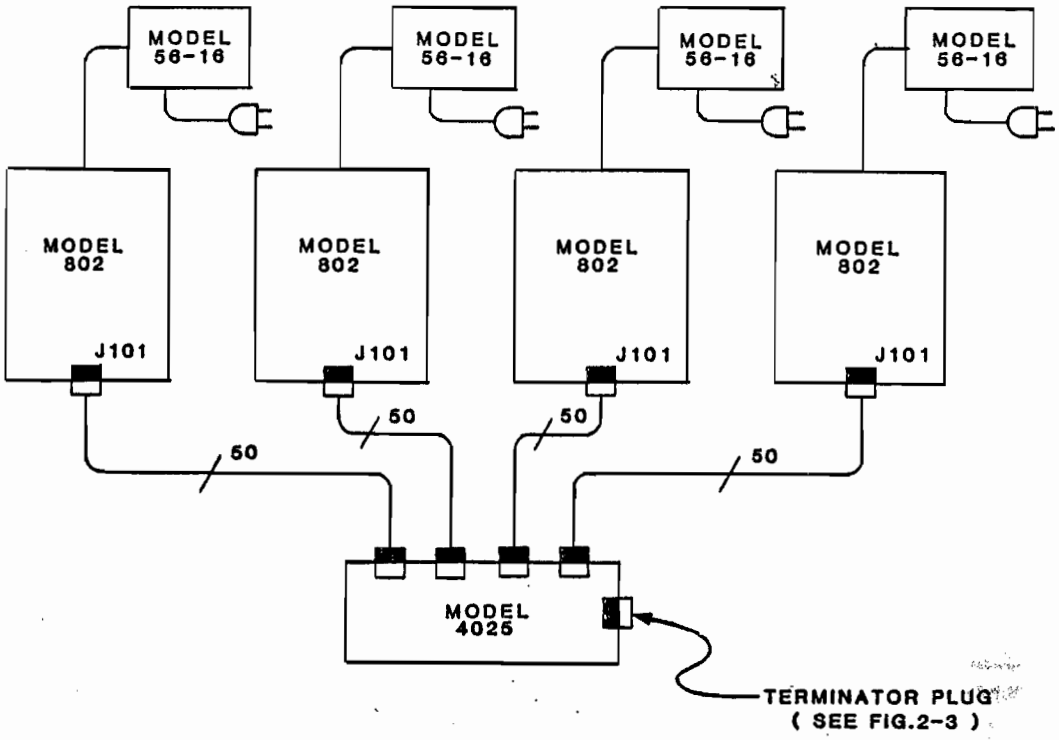
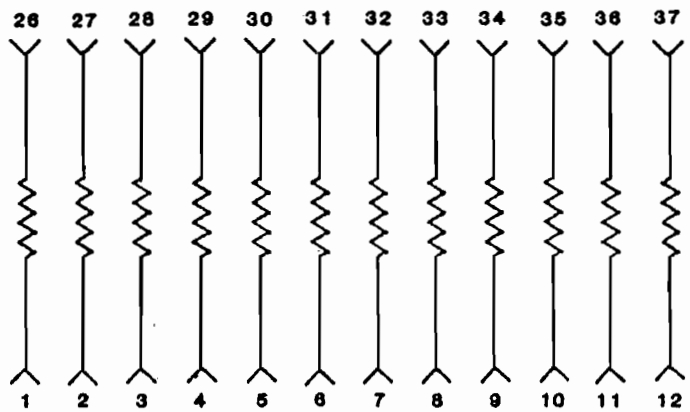


FIGURE 2-2
ALL MASTER STATION SYSTEM



ALL RESISTORS ARE 200 OHM 1/4 WATT
TERMINATOR PLUG IS A 50-PIN FEMALE CONNECTOR

FIGURE 2-3
TERMINATOR PLUG

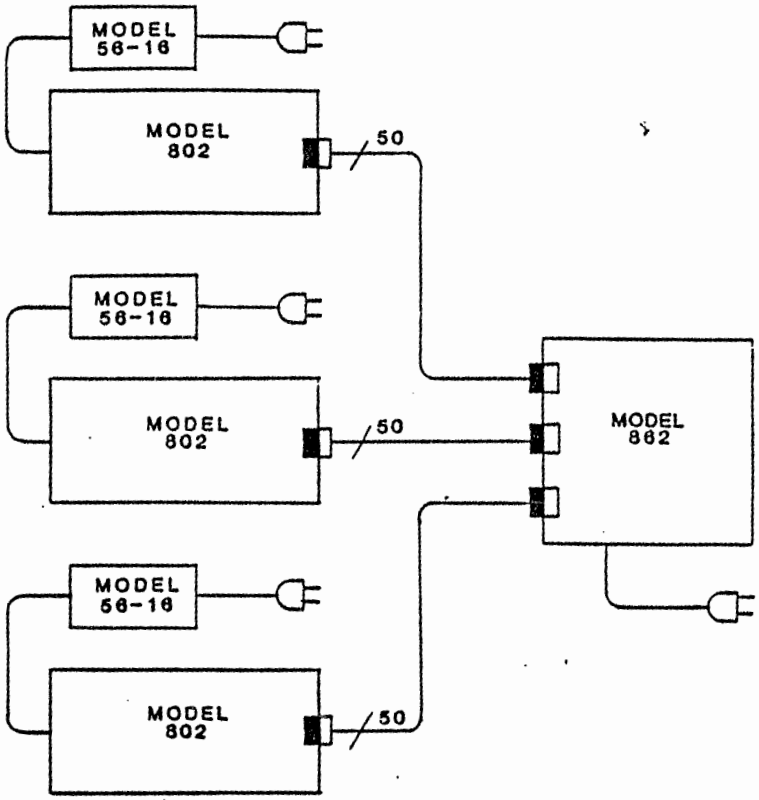
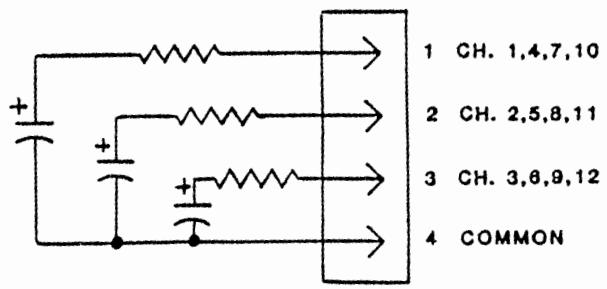


FIGURE 2-4
MASTER STATION SYSTEM AND MODEL 862



ALL RESISTORS 200 OHM
ALL CAPACITORS 10uF/50V
CONNECTOR SHOWN IS A 4-PIN MALE XL TYPE.

FIGURE 2-5
TERMINATOR PLUG FOR MODEL 862

The "Master Station plus TW Intercom System Configuration" includes one or more 802's, a Model 862 System Interconnect, and a TW Intercom System (see example system, Figure 2-7). In this system the master stations talk and listen between themselves and the TW user stations. The call light (optional) signals are also sent throughout the system.

This method allows an unrestricted channel assignment switching system to be used on the TW Intercom System. The TW portion of the system, (Figure 2-7), consists of four Model PS31 (or PS-30) power supplies and Model BP-300 user stations. To interface the TW Intercom System to the Model 802 Master Station System, connect PS31 (PS-30) #1 output 1-2-3 to 862 input "CH 1-2-3" (J5). Connect PS31 (PS-30) #2 output 1-2-3 to 862 input "CH 4-5-6" (J6). If a 12-channel master station system is being interfaced, connect PS31 (PS-30) #3 output 1-2-3 to 862 input "CH 7-8-9" (J7) and PS31 (PS-30) #4 output 1-2-3 to 862 input "CH 10-11-12" (J8).

Not all channels need to be connected between the 862 and the PS31's (PS-30)'s. For example, to convert channel 12 on the master stations to be a private channel for communciations between 802's only, do not connect pin 3 of the 862's 10-11-12 input connector but terminate instead with a resistor as shown in Figure 2-6. This procedure may be used to isolate any one channel or combination of channels. Note that any channel not connected to an external TW channel must be terminated with a 200 ohm resistor and 10 microfarad capacitor as shown in Figures 2-5 and 2-6. Connect output from the 802's line connector (J-101) to the line inputs on the 862.

To mechanically secure the cable to the Model 802 rear panel:

(1) Remove the screw just to the left of J-101,
(2) Plug the cable into J-101,
(3) Secure the cable connector by screwing the captive screw in the connector into the hole left in step (1), above,
(4) Use a cable tie to secure the other side of the connector, using the cable tie loop on the rear panel of the Model 802.

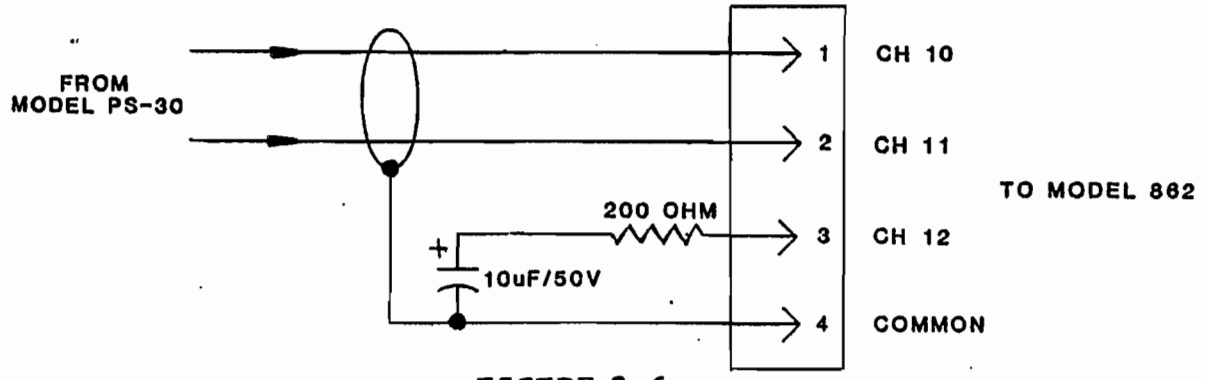


FIGURE 2-6
CHANNEL 12 TERMINATION

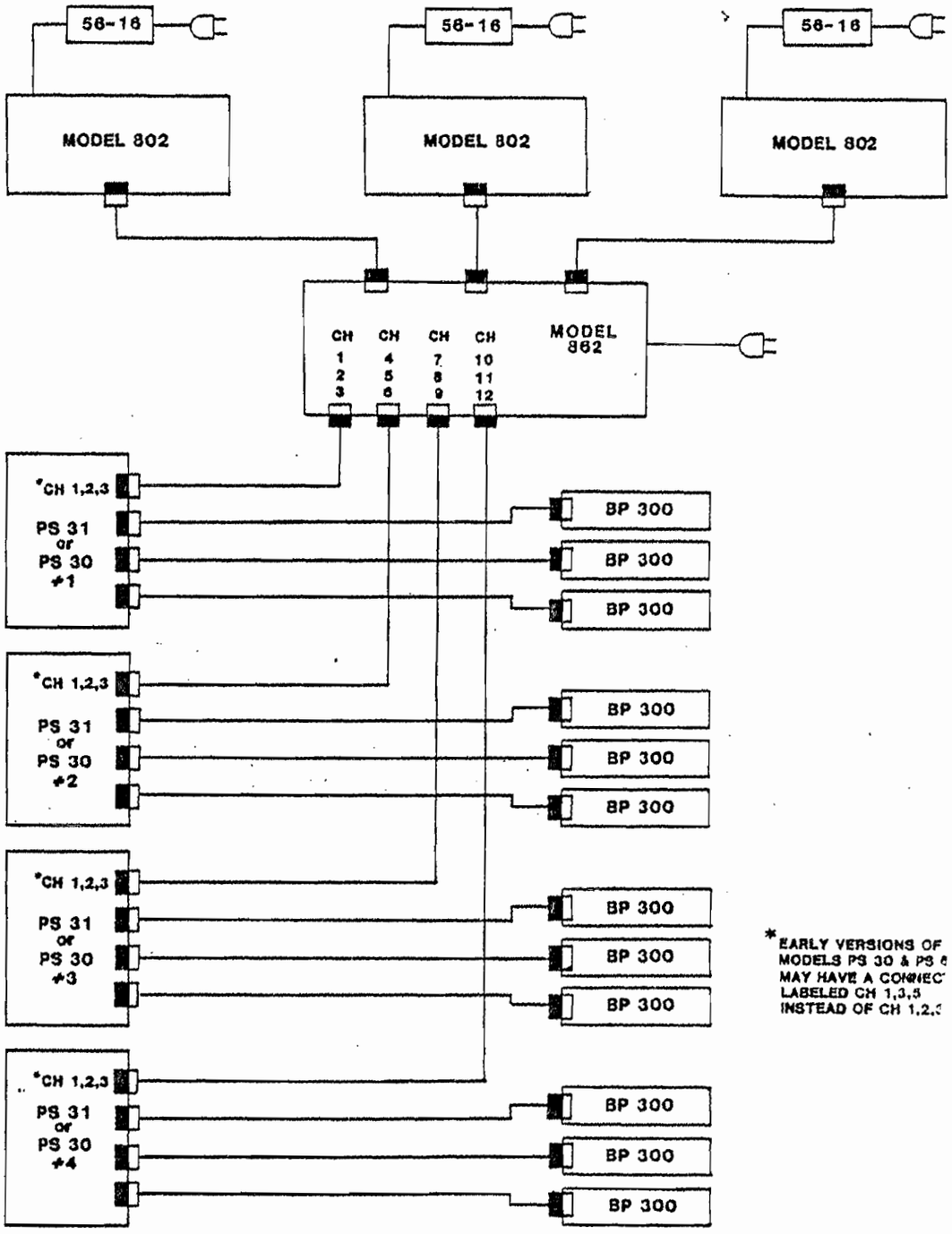


FIGURE 2-7
MODEL 802/TW INTERCOM SYSTEM BLOCK DIAGRAM

Some block diagrams in this manual use codes contained in Table 2-1, Connector Code Table. Note that, in this table, only chassis-mount connectors are specified. Note: All male connectors are colored black.

TABLE 2-1

CONNECTOR CODE TABLE

CODE	PART NO.	CONNECTOR DESCRIPTION
A	XLR-3-31	AUDIO, CHASSIS MT., FEMALE, 3 PIN
B	XLR-3-32	AUDIO, CHASSIS MT., MALE, 3 PIN
C	XLR-4-31	AUDIO, CHASSIS MT., FEMALE, 4 PIN
D	XLR-4-32	AUDIO, CHASSIS MT., MALE, 4 PIN
E	----	MICRORIBBON TYPE, CHASSIS MT., MALE, 50 PIN
F	----	MICRORIBBON TYPE, CHASSIS MT., FEMALE, 50 PIN
G	----	"D" TYPE, CHASSIS MT., MALE, 25 PIN
H	----	"D" TYPE, CHASSIS MT., FEMALE, 25 PIN
J	456	"C" TYPE, CHASSIS MT., MALE, 6 PIN
K	453	"C" TYPE, CHASSIS MT., MALE, 4 PIN
L	----	5-WAY BINDING POST, DUAL ASSEMBLY
M	XLR-5-31	AUDIO, CHASSIS MT., FEMALE, 5 PIN
N	XLR-5-32	AUDIO, CHASSIS MT., MALE, 5 PIN
P	452	"C" TYPE, CHASSIS MT., MALE, 3 PIN
Q	D6F	AUDIO, CHASSIS MT., FEMALE, 6 PIN
R	D6M	AUDIO, CHASSIS MT., MALE, 6 PIN
S	R05-R5M	BNC TYPE, CHASSIS MT., MALE, 5 PIN
T	----	"D" TYPE, CHASSIS MT., FEMALE, 9 PIN
U	----	TERMINGAL, BARE WIRE (WEIDMULLER)
V	----	SCREW TERMINAL, BARRIER STRIP
W	----	PHONE JACK, 2-CIRCUIT, SHORTING & NONSHORTING
X	----	PHONE JACK, 3-CIRCUIT, SHORTING & NONSHORTING
Y	----	PHONO JACK,
AA	----	MINI-JACK, FEMALE

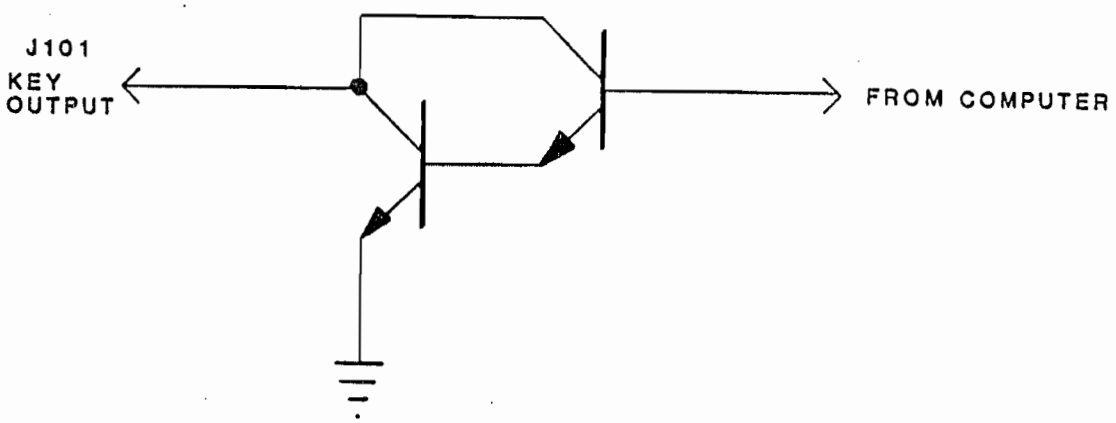


FIGURE 2-8
DARLINGTON KEY OUTPUT

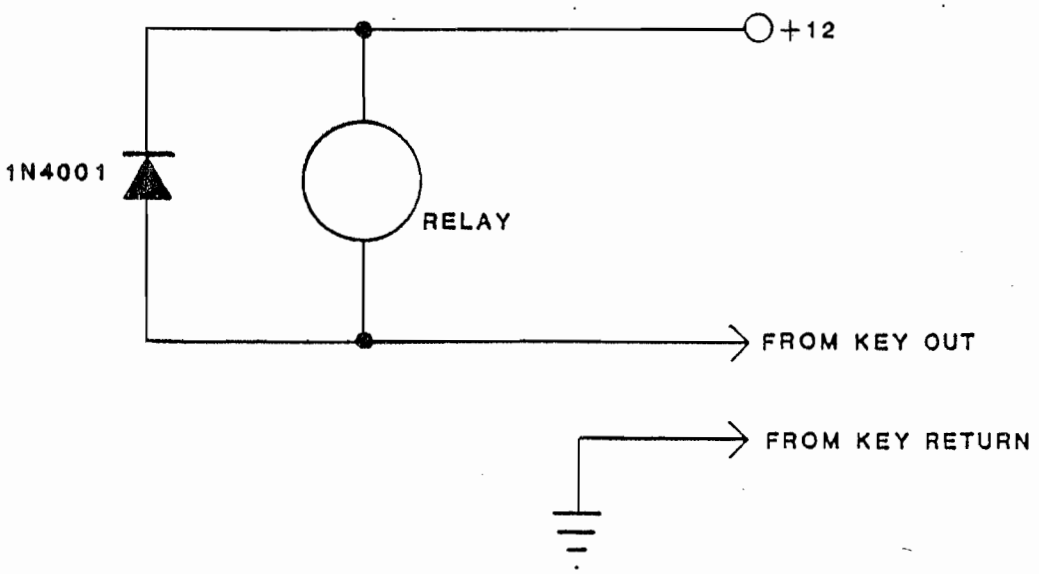


FIGURE 2-9
KEY OUTPUT APPLICATION

ELECTRICAL INSTALLATION/SIGNALS/FEATURES

KEY OUTPUTS

Twelve logic-type outputs are available at rear-panel line connector, J101. These outputs control relays in the Model 862 System Interconnect, but if your system does not include a Model 862, these outputs may be used directly as control outputs. Pressing one of twelve talk buttons on the front panel of the Model 802 activates one of the twelve key outputs (respectively). Connections to these outputs are shown on sheet 20 of the Model 802 schematic. Figure 2-8 shows a typical output. The darlington transistor output conducts to ground, when activated, and has a maximum rating of 50 volts, 50 milliamperes, dc. Figure 2-9 shows an application of the key output. **Note:** relays should always have a diode to protect the transistor in the Model 802.

RELAY OUTPUTS (See Figure 2-10)

Six form C relay contacts are available on the Model 802 rear panel. The respective relays are programmable from the front panel to operate with front panel pushbutton(s) (See Section 3). Maximum contact ratings are: 1 amp at 24 volts dc, or 0.5 amp at 110 volts ac. **Note:** Applying voltages over 32 volts is not recommended. Relay programming is discussed in section 3.

EXTERNAL MICROPHONE SWITCH (See Figure 2-10)

Connect an external or remote microphone switch to TB7 (using labels above TB7 for exact connection). When the switch is closed the microphone will turn on and will be indicated by the front-panel MIC ON switch being brightened. The remote switch is not alternate action and requires a maintained contact. When the remote switch is off, the microphone may be turned on locally, but when the remote switch is on, the microphone may **not** be turned off locally.

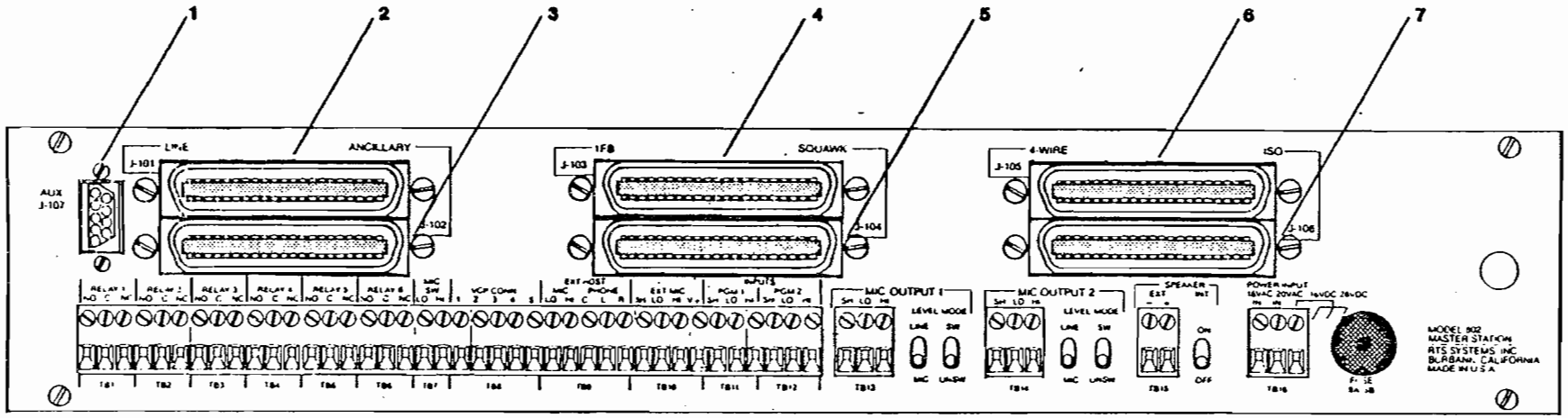


FIGURE 2-10
MODEL 802 REAR PANEL CONNECTIONS

VCP CONNECTOR (See Figure 2-10)

The rear-panel terminal block, TB8, has connections to interface to a "video-iso" system, and, also, a "squawk" system.

EXTERNAL HEADSET CONNECTOR (See Figure 2-10)

Connect external headphones to TB9. Make sure that the external headphones connections are separate from any microphone connections, or oscillations will occur. TB9 is paralleled with the front-panel headset connector; use only one at a time.

EXTERNAL MICROPHONE CONNECTOR (See Figure 2-10)

An external microphone may be used in place of the front-panel gooseneck microphone by connecting the external microphone to rear-panel terminal block TB10. When using an external microphone, disconnect the front-panel microphone by unplugging connector, P1, from the motherboard.

Electret microphones may also be used with the Model 802. Both 2-wire and 3-wire microphones are accomodated. To use a 2-wire electret microphone, install resistor R3 on the mother board.

PROGRAM INPUTS (See Figure 2-10)

Connect external program inputs to rear-panel terminal blocks TB11 and TB12. These inputs accept line-level balanced audio. Program volume level is controlled by front-panel AUX VOLUME control, adjustment board pots 15 and 16, and front-panel MASTER VOLUME control. Program may be assigned to left headphone, right headphone, or speaker by switches on the adjustment board. Alternatively, Program #2 audio may be injected at the Model 862 System Interconnect to all master stations, or audio appearing at Program input #2 of any Model 802 will appear on all Model 802's.

MICROPHONE OUTPUT CONNECTORS (See Figure 2-10)

Two microphone outputs are provided via rear-panel terminal blocks TB13 and TB14. A rear-panel LEVEL switch selects low level (MIC) or high level (LINE) output. A separate MODE switch for each output determines whether an output is controlled by the MIC ON/OFF switch.

EXTERNAL SPEAKER OUTPUT (See Figure 2-10)

Connect an external speaker to rear-panel terminal block TB15. Since this output is a bridging-type output, **DO NOT LET EITHER SPEAKER LEAD CONTACT GROUND.** The switch next to TB15 turns off the internal speaker .

ELECTRICAL INSTALLATION: HEADSET(S)

HEADSET REQUIREMENTS: A wide range of headset types may be used:

Dynamic microphone headset type:	Carbon microphone headset type:
50 to 1000 ohm microphone	Standard carbon microphone
25 to 1000 ohm headphone(s)	25 to 1000 ohm headphone(s)

Use headphones with an impedance of 25 ohms or greater. Low impedance 8 ohm headphones are not recommended. Headphones with good acoustic isolation (20 to 40 dB) improve communication in high ambient noise environments, and allow the user to use the headphones at a less tiring, lower volume.

In the headset connecting cable, prevent coupling between the microphone and headphone leads by using a shielded, twisted pair for the microphone, and a separate, twisted pair for the headphones. Do not allow headphone ground to contact microphone ground or shield. Tie the shield to microphone ground or "mic low". The headset cable can be made longer when the microphone and headphone pairs are physically separated. The wider the separation, the longer the cable length which may be used. Estimated maximum usable headphone cable lengths are as follows:

Single cable, two shielded twisted pair: 10 feet (3.05 m).
Dual ribbed cable, two shielded twisted pair: 30 feet (9.14 m).
Separate cables, shielded twisted pair in each: 50 feet (15.24 m).
Balanced microphone input: up to 100 feet (30.48 m).

HEADSET CONNECTIONS

Dynamic Microphone headset connector: XLR-5-31 type receptacle
Input level: -55 dBV nominal
Output level to headphone: 10 volts peak-to-peak open circuit.
- Pin 1 - Microphone low
- Pin 2 - Microphone high
- Pin 3 - Headphone low
- Pin 4 - Left Headphone high
- Pin 5 - Right Headphone high

Carbon Microphone headset connector: Standard 1/4" Tip-Ring-Sleeve (TRS) Phone Jack
Input level: -15 dBV nominal
Output to Headphone: 10 volts peak-to-peak open circuit.
- Tip - Carbon Microphone
- Ring - Headphone
- Sleeve - Common/ground

ELECTRICAL INSTALLATION/SIGNAL/MODEL 802 TO MODEL 801/MODEL 860

If the Model 802 has been equipped with an "801 emulate" option, a connector on the rear panel of the Model 802 plugs directly into an "801" type system.

If it is required that a non-801 emulate type 802 be used in an "801" type system, follow the directions below.

Case 1: Six channels of intercom, no SA's, no IFB's, no Slate, no Monitor Mute: Use a standard six channel Model 802 to connect to a six channel "801" system. A wiring diagram for connecting a 6-channel Model 802 to an 801 system is shown in Figure 2-11. Install button legends per Figure 2-12.

Case 2: Six channels of intercom, SA's, IFB's, Slate, Monitor Mute: Use a 12-channel Model 802 (equipped with the Talk option) and connect using the wiring diagram in Figure 2-13. Install button legends per Figure 2-14. This wiring will operate all relays in the 860. In a 12-channel 802, program one of the relays to activate when SLATE MIC is pressed. This relay is equivalent to the slate-mic/radio-telephone relay available on J2 of the Model 801.

Program another relay to activate when SPKR MUTE is pressed. This relay is equivalent to the monitor mute relay contacts available at J4 on an 801. This relay may also be programmed to activate when an SA button is pressed. Thus if SA1 is used as a studio announce, the studio speaker nearest the 802 may be muted via the relay when its SA1 button is pressed. This will prevent feedback squeals.

Model 801's may also be used in an 802/862 system. Make connections between the systems as shown in Figure 2-15. Be sure that termination is provided by only one system. Note that some connections are optional. The standard connections allow the six talk and listen channels of the 801 to communicate with the first six talk and listen channels of the 802. The optional connections interface the next five channels of the 801 to channels 7 - 11 of the 802. SA and IFB channels on the 801 can only talk and can not listen. SLATE is a 2-way line and will work to both talk and listen. Listen level on the SLATE line is controlled by the EXT. 2 level knob. The key connections allow the 801 to operate relays 7 - 11 in the 862.

For more information on 801/860 systems, see the 801 technical manual TM2604.

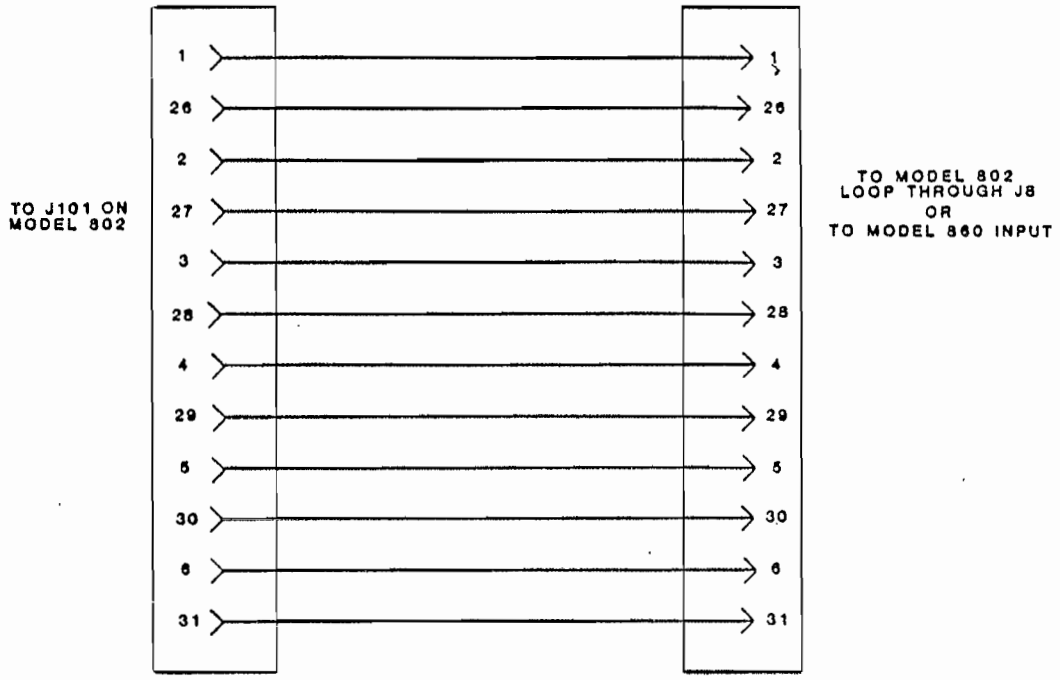


FIGURE 2-11
CASE 1: SIX CHANNEL 802 TO SIX CHANNEL 801 INTERCONNECTION

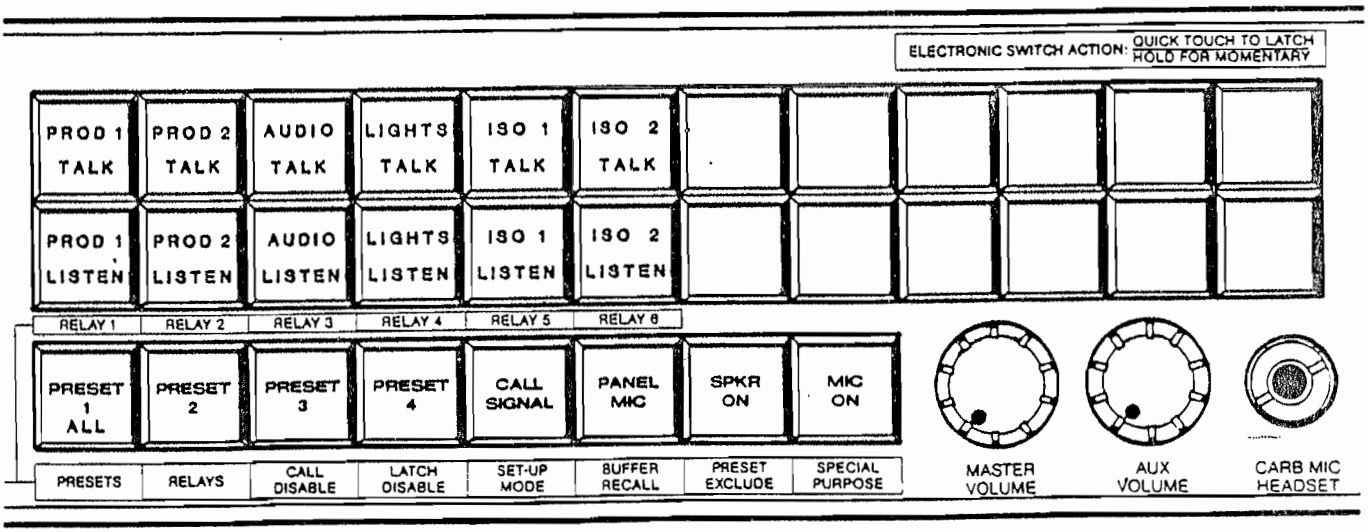


FIGURE 2-12
CASE 1: FRONT PANEL BUTTON LEGEND

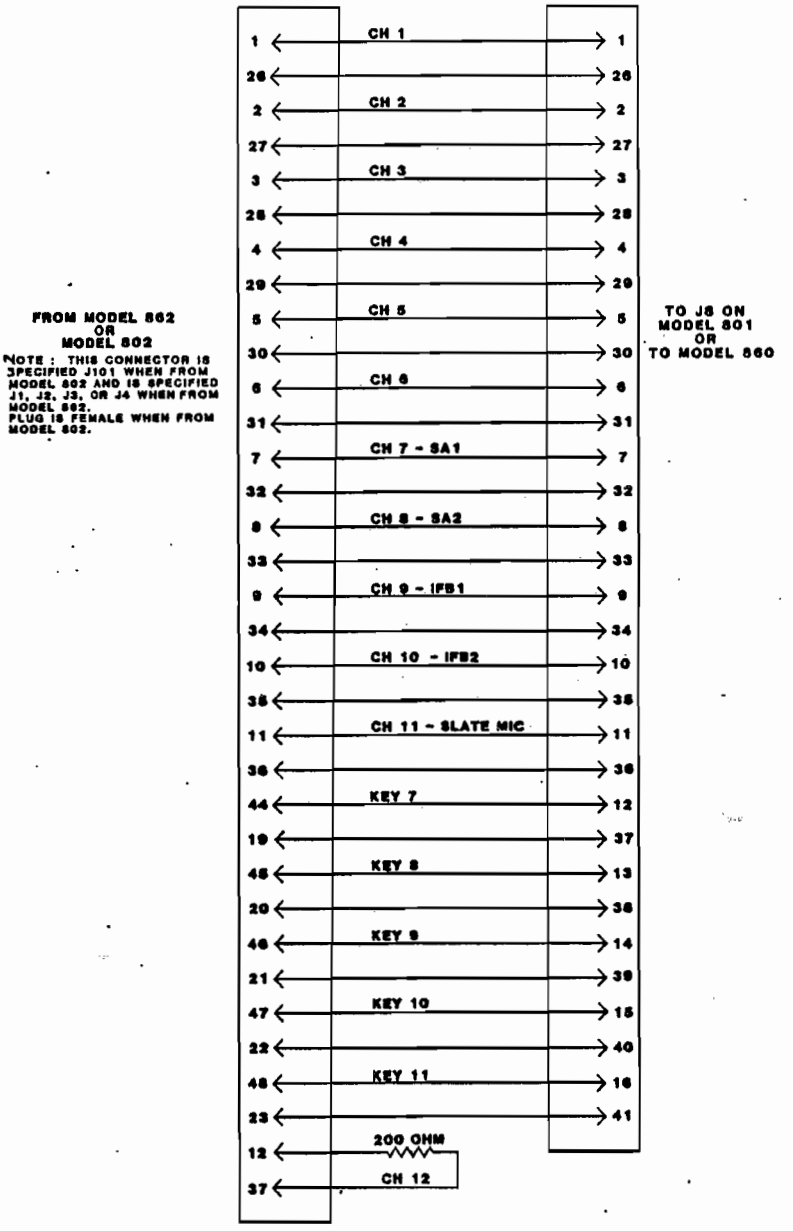


FIGURE 2-13
CASE 2: TWELVE CHANNEL 802 TO SIX CHANNEL 801 INTERCONNECTION

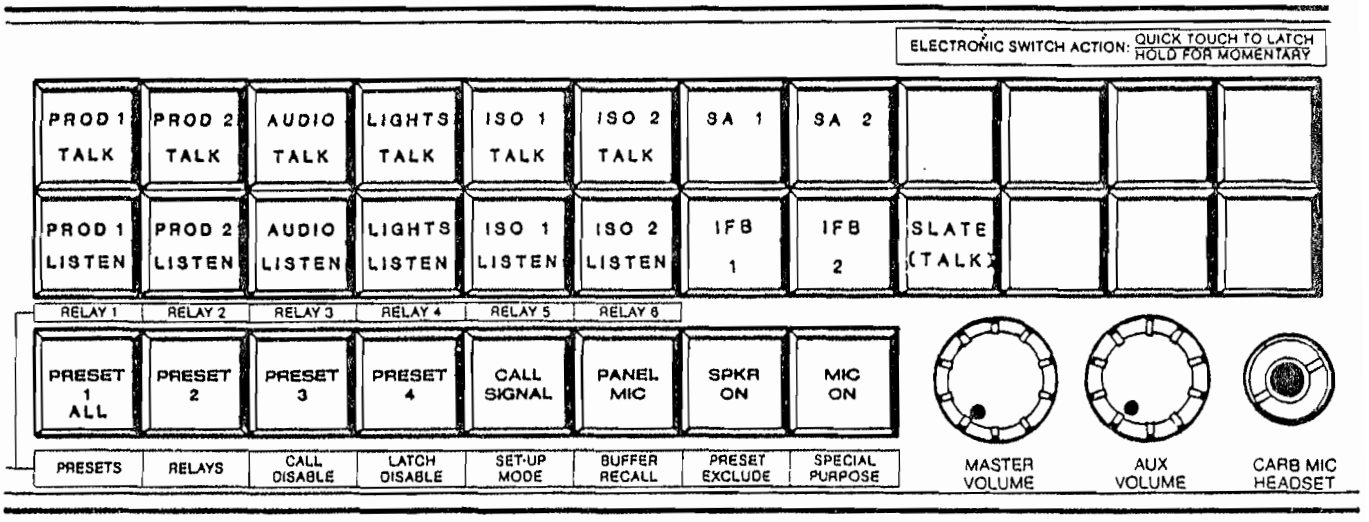


FIGURE 2-14
CASE 2: FRONT PANEL BUTTON LEGEND

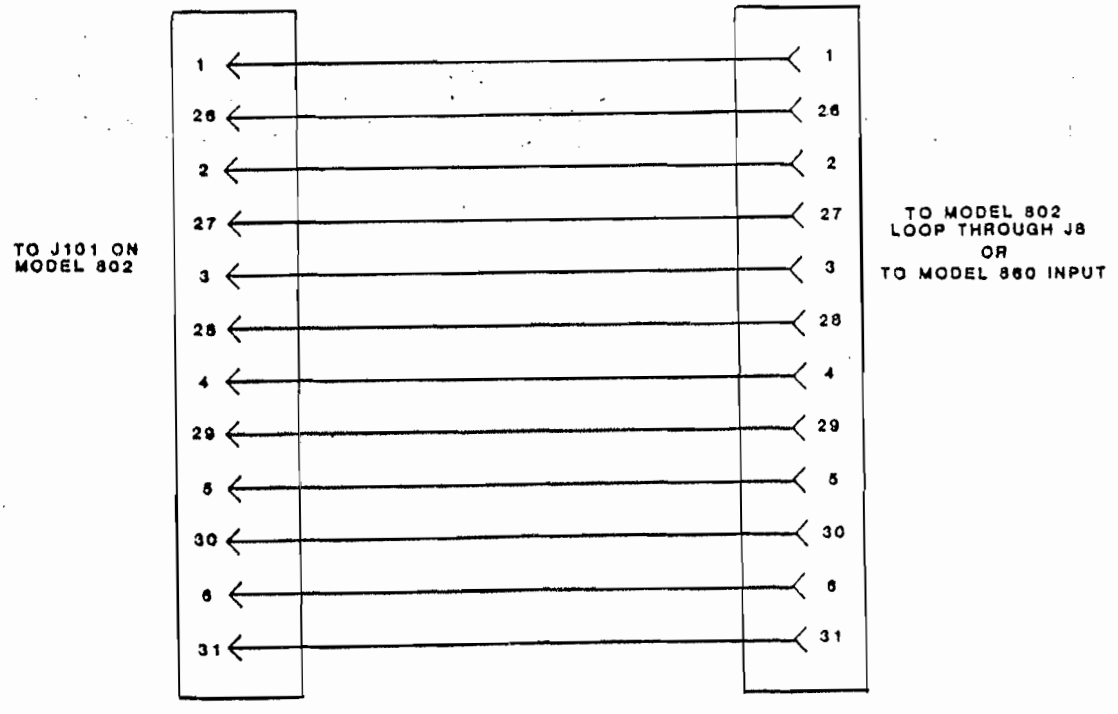


FIGURE 2-15
USING AN MODEL 801 IN AN MODEL 802 SYSTEM

ELECTRICAL INSTALLATION/SIGNALS/MODEL 802/TELEPHONE

The Model 802 may be interfaced to telephone lines as follows.

Method 1: Connect a party-line (PL) channel from either one 802 or from an 862 to either a dry or wet phone line via a step-up transformer as shown in Figure 2-16(Figure 2-10 in 801 manual). Terminate the phone line with an 820 ohm resistor across the transformer secondary (phone line side). The transformer is large enough so that it can be directly connected across a "wet" line (line with dc current) with negligible ac performance degradation; the secondary is low enough resistance so that it will "hold" the line.

Method 2: Connect a TWI-222T-telco interface unit as in Figure 2-17.

Method 3: Connect a TWI-326 interface unit using Figure 2-18. Note: the 200 ohm resistor termination is not required if a PS 31 (PS-30/60) is also connected.

Method 4: Connect a Model 802 with 4-wire option (OPT802-C2, or OPT802-C3) to a TWI-326 as shown in Figure 2-19. This method will work better than the two methods above. Note: Termination must be provided.

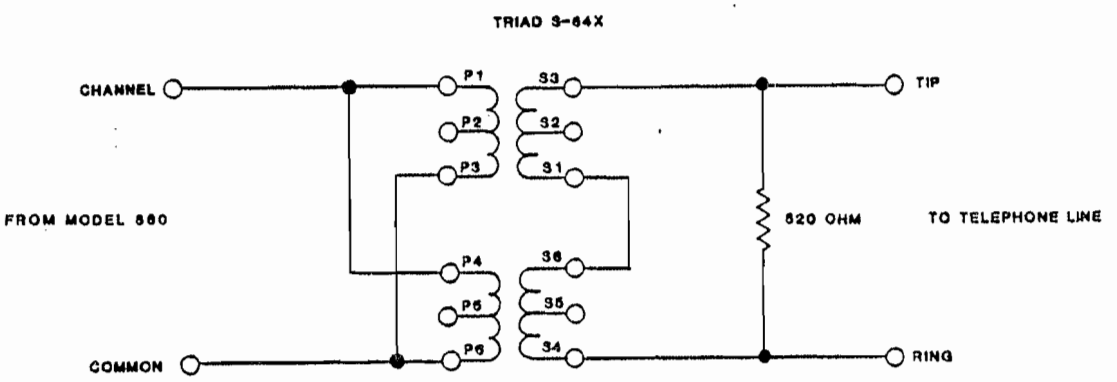


FIGURE 2-16
METHOD 1: MODEL 802 TO TELEPHONE INTERCONNECTION

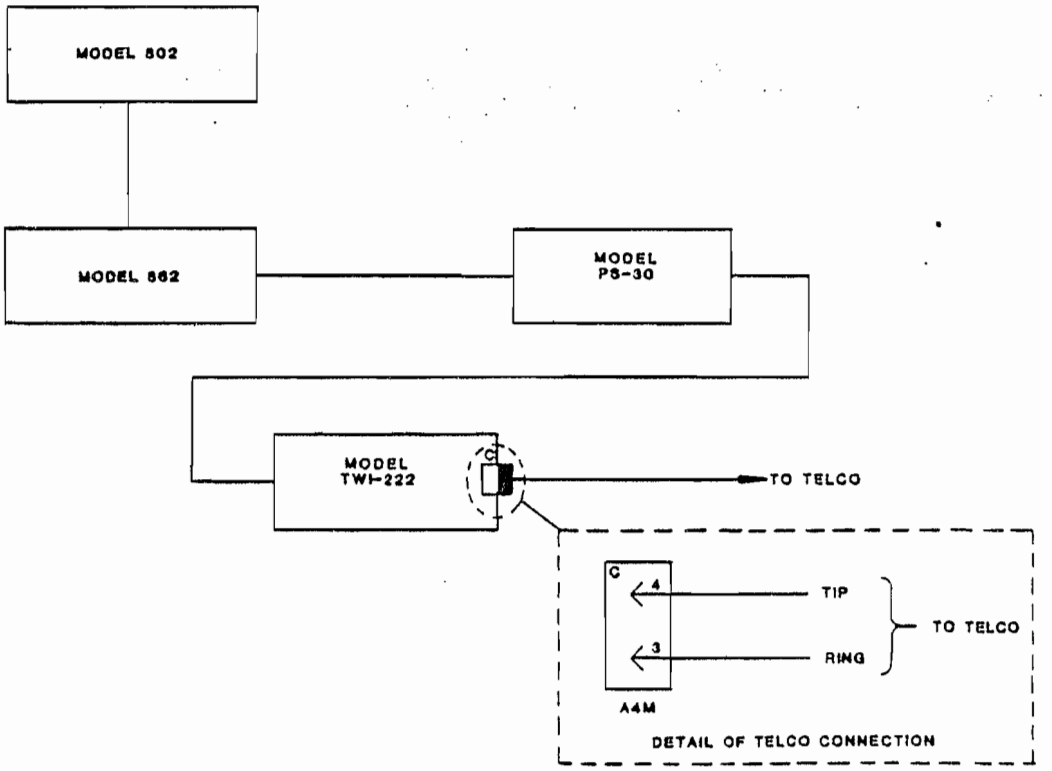
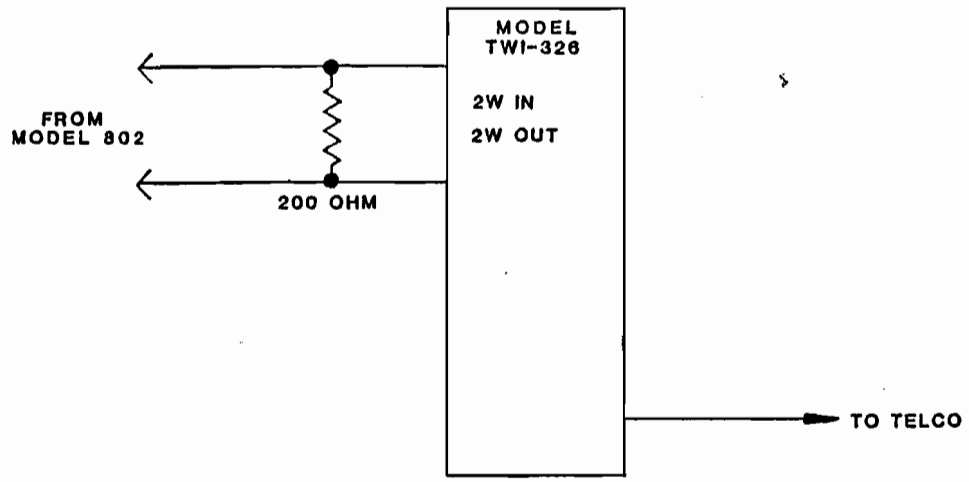


FIGURE 2-17
METHOD 2: MODEL 802 TO TELEPHONE INTERCONNECTION



(ALSO SEE MODEL TWI-326 MANUAL)

FIGURE 2-18
METHOD 3: MODEL 802 TO TELEPHONE INTERCONNECTION

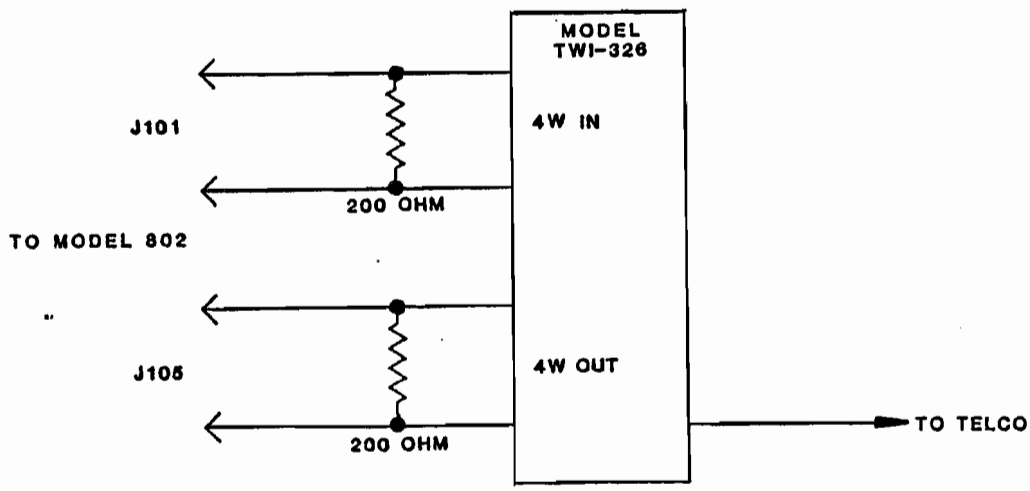


FIGURE 2-19
METHOD 4: MODEL 802 TO TELEPHONE INTERCONNECTION

ELECTRICAL INSTALLATION/SIGNALS/MODEL 802/SERIES 4000 IFB

The Model 802 may be used in either of two ways with the 4000 series IFB system. Method "A" uses a line-level unswitched microphone output from the Model 802 to drive Models 4001, 4002, or 4003 IFB Control Stations. Method "B" emulates either a Model 4001 or 4002 IFB control station and requires no external parts, but it does require: 1) the installation of one or two IFB option boards, 2) that mother board programming switch(es) be actuated and 3) a microprocessor reset be executed.

To use Method "A", connect the Model 802 (rear panel) MIC OUTPUT 1 or MIC OUTPUT 2 to Models 4001, 4002, or 4003 IFB Control Stations. Use the instructions for "Line-level inputs" in the IFB Technical Manual, TM2594. Note that, on the 4000 series control station, R11 must be removed and a trace cut. Interconnect the IFB system and configure the 4001, 4002, or 4003 for power input and priority as described in the IFB Technical Manual TM2594 and Figures 2-20A and 2-20B. Move the 802's LEVEL switch to LINE and the MODE switch to UNSW. Do not connect the shield at the 802 end of the cable.

Method "B" IFB (See Figures 21, 22, 23, and 24) requires both an option base (OPT802-A1) and IFB option(s). To emulate a model 4001 IFB control station option OPT802-G1 must be installed. To emulate a model 4002 IFB control station, both the OPT802-G1 and OPT802-G5 options must be installed. Note that if both IFB options are installed the "Iso" option can not be installed. If the IFB priority needs to be changed, consult the IFB Technical Manual, TM 2594.

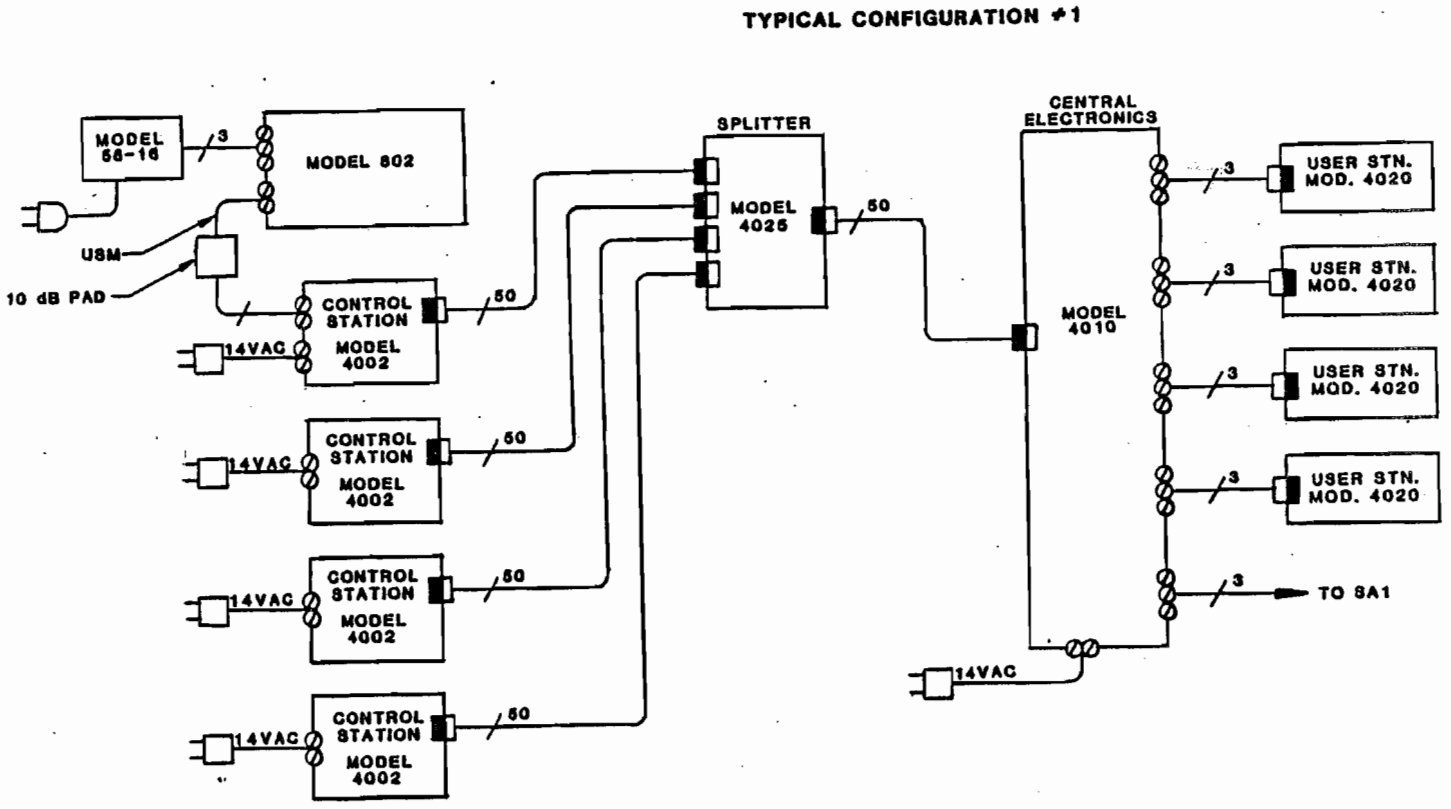


FIGURE 2-20A
METHOD "A": MODEL 802 TO IFB CONNECTION (4 IFB's)

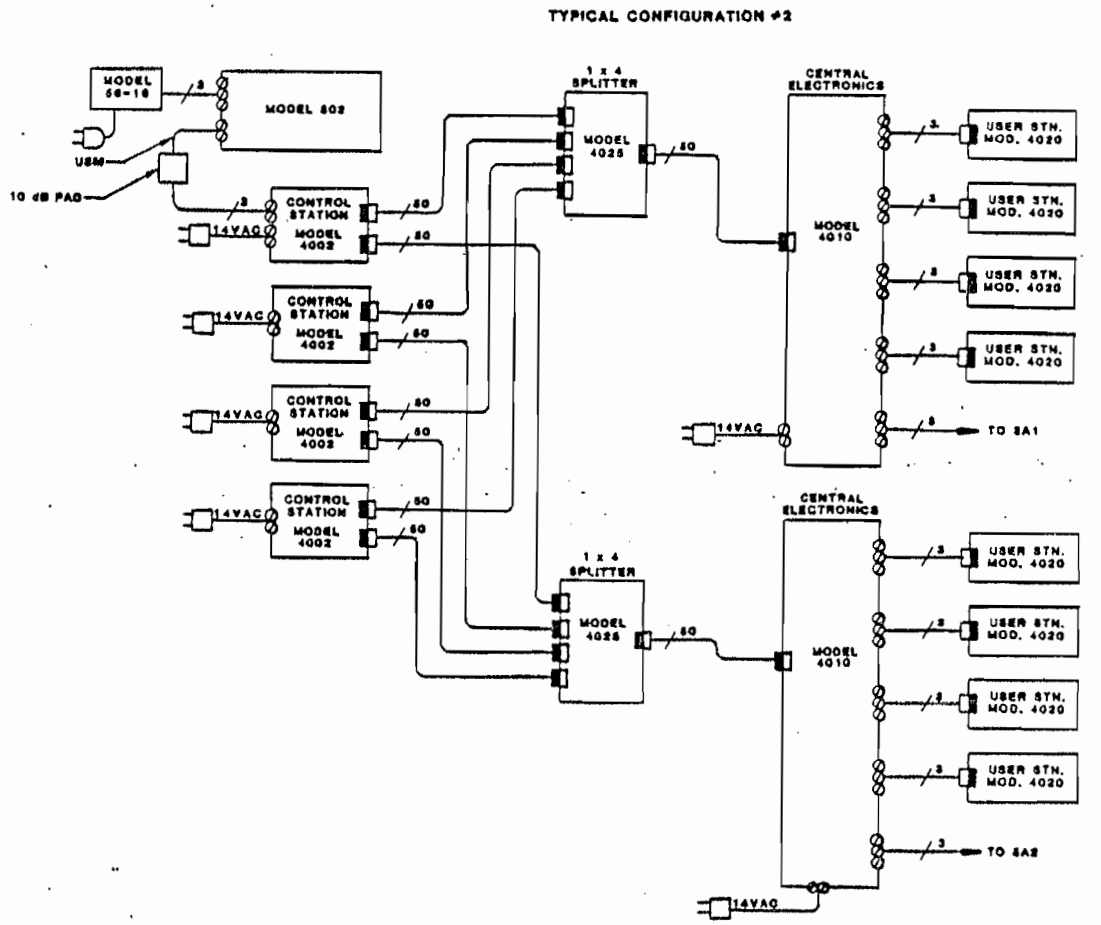


FIGURE 2-20B
METHOD "A": MODEL 802 TO IFB CONNECTION (8 IFB's)
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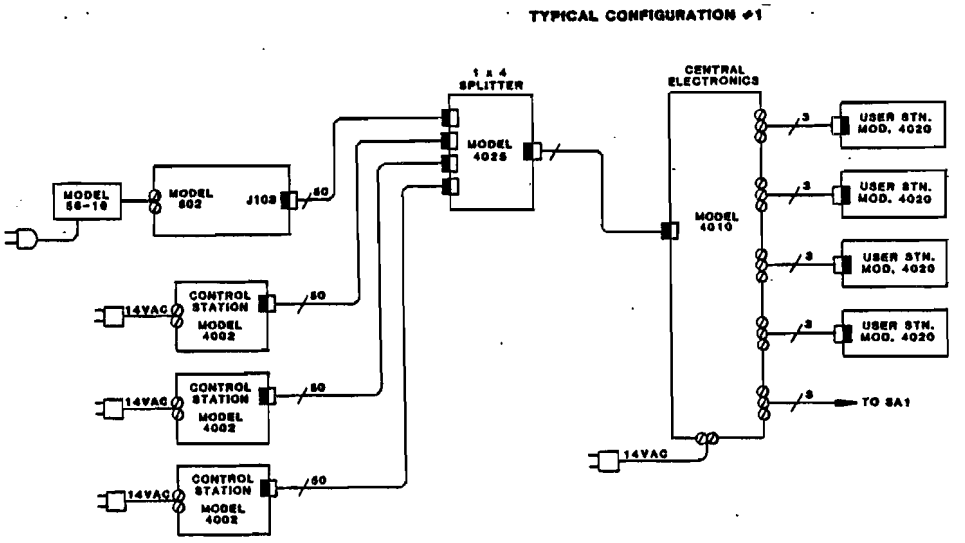


FIGURE 2-21
METHOD "B": MODEL 802 TO IFB CONNECTION (4 IFB's)

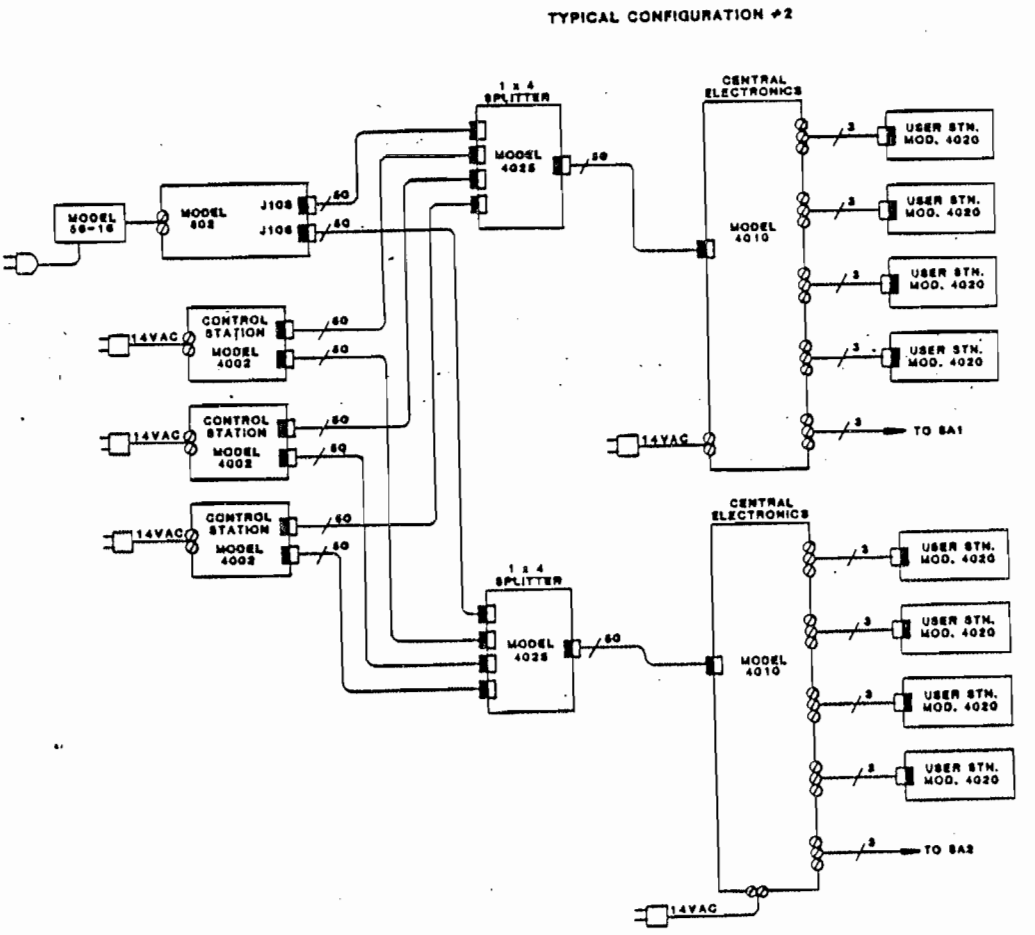


FIGURE 2-22
METHOD "B": MODEL 802 TO IFB CONNECTION (8 IFB's)
802/2nd Ed./October 15, 1986/Page 40

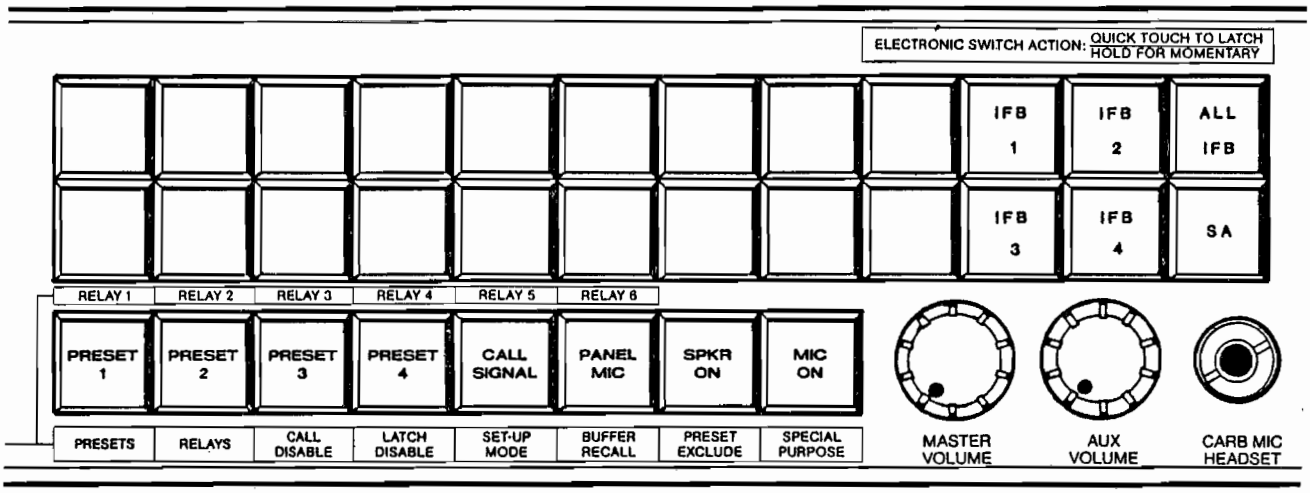


FIGURE 2-23
MODEL 802 FRONT PANEL BUTTON ARRANGEMENT FOR 4 IFB's

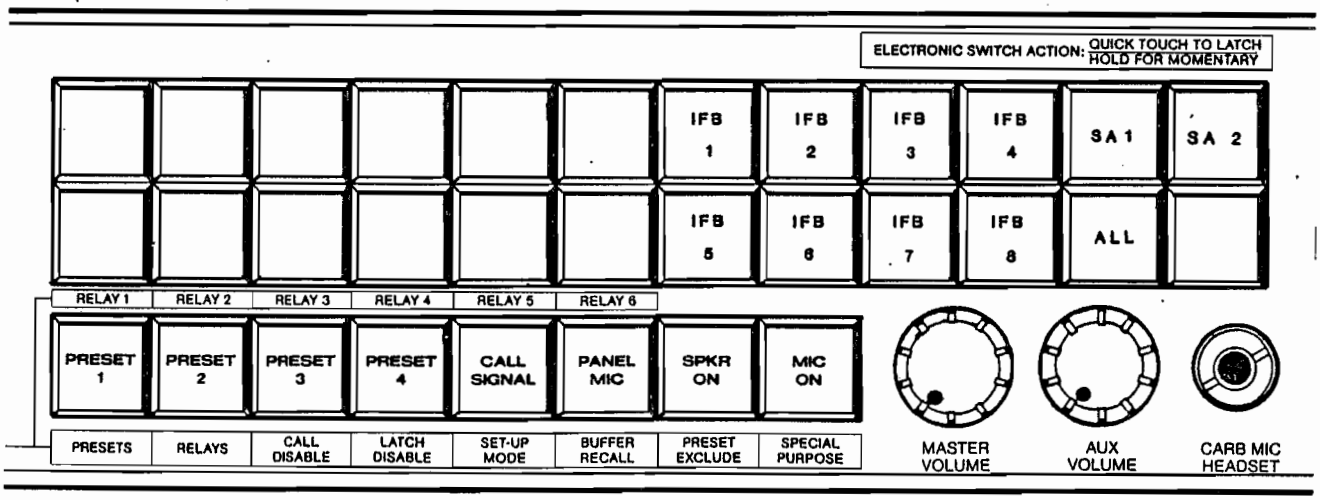


FIGURE 2-24
MODEL 802 FRONT PANEL BUTTON ARRANGEMENT FOR 8 IFB's

ELECTRICAL INSTALLATION/SIGNALS/SERIES 1000 SQUAWK

The Model 802 may be used in either of two ways with the series 1000 squawk system. Method "A" requires an external model MCP-1010 squawk station that is connected to use the microphone and speaker in the 802. Method "B" emulates a model MCP-1010 squawk station with no external parts required.

For Method "A" squawk, connect MIC OUTPUT 1 or MIC OUTPUT 2 of the 802 to the EXTERNAL LINE LEVEL MICROPHONE INPUT of the MCP-1010 as shown in Figure 2-27. Connect the MCP-1010's OUTPUT TO CONFERENCE LINE to the SQUAWK input at TB8 on the 802.

Incoming audio level from the MCP-1010 is controlled by the SQUAWK level adjust on the 802's pull-out adjustment board only and is not affected by 802 or MCP-1010 front-panel level control or 802/MCP-1010 front-panel speaker switch.

For Method "B" squawk, the SQUAWK option must be installed. Two squawk options are available. The first option OPT802-F1 will emulate only the first six channels of an MCP-1010. The second option OPT802-F5 adds on to the first option so that all ten channels on an MCP-1010 are emulated. Either option requires the OPT802-A1 option base (See Figures 25, 26, and 28).

Incoming audio level is controlled by the adjustment board squawk level pot only and is not affected by front-panel VOLUME control.

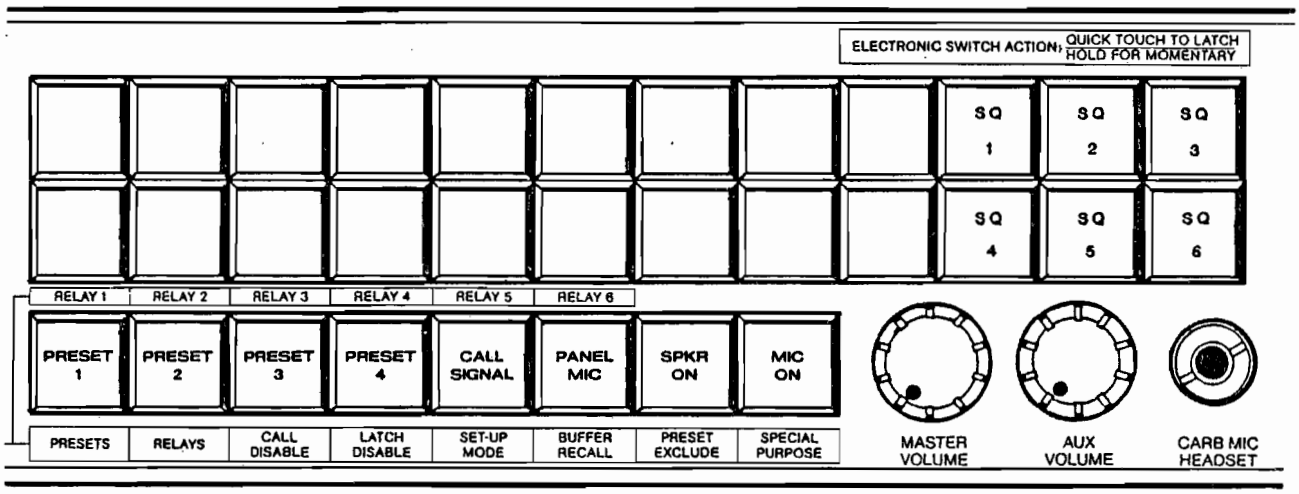


FIGURE 2-25
MODEL 802 FRONT PANEL BUTTON ARRANGEMENT FOR 6 SQUAWK's

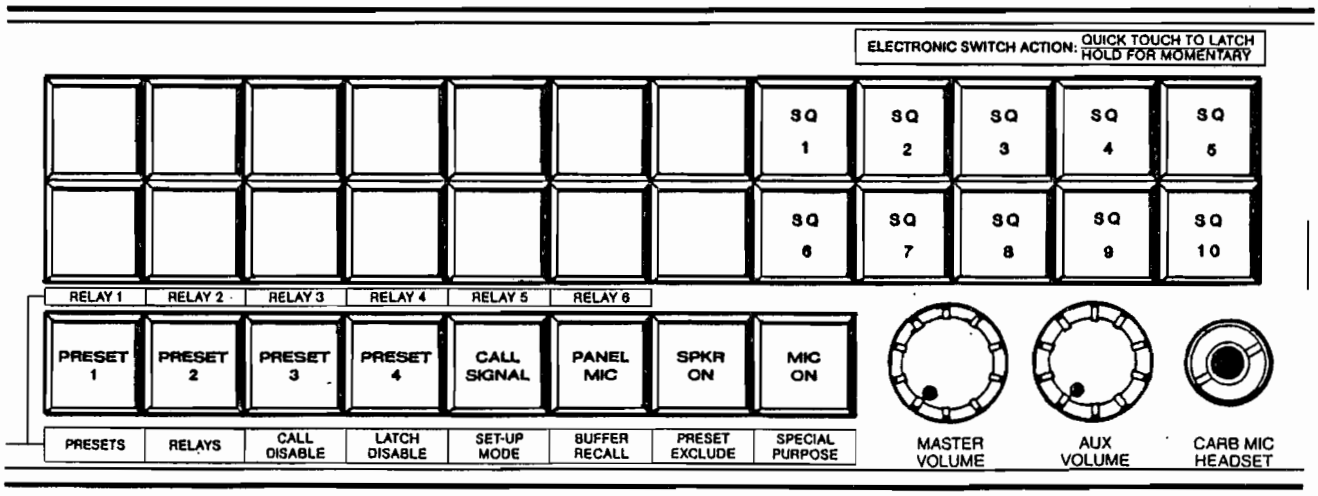


FIGURE 2-26
MODEL 802 FRONT PANEL BUTTON ARRANGEMENT FOR 10 SQUAWK's

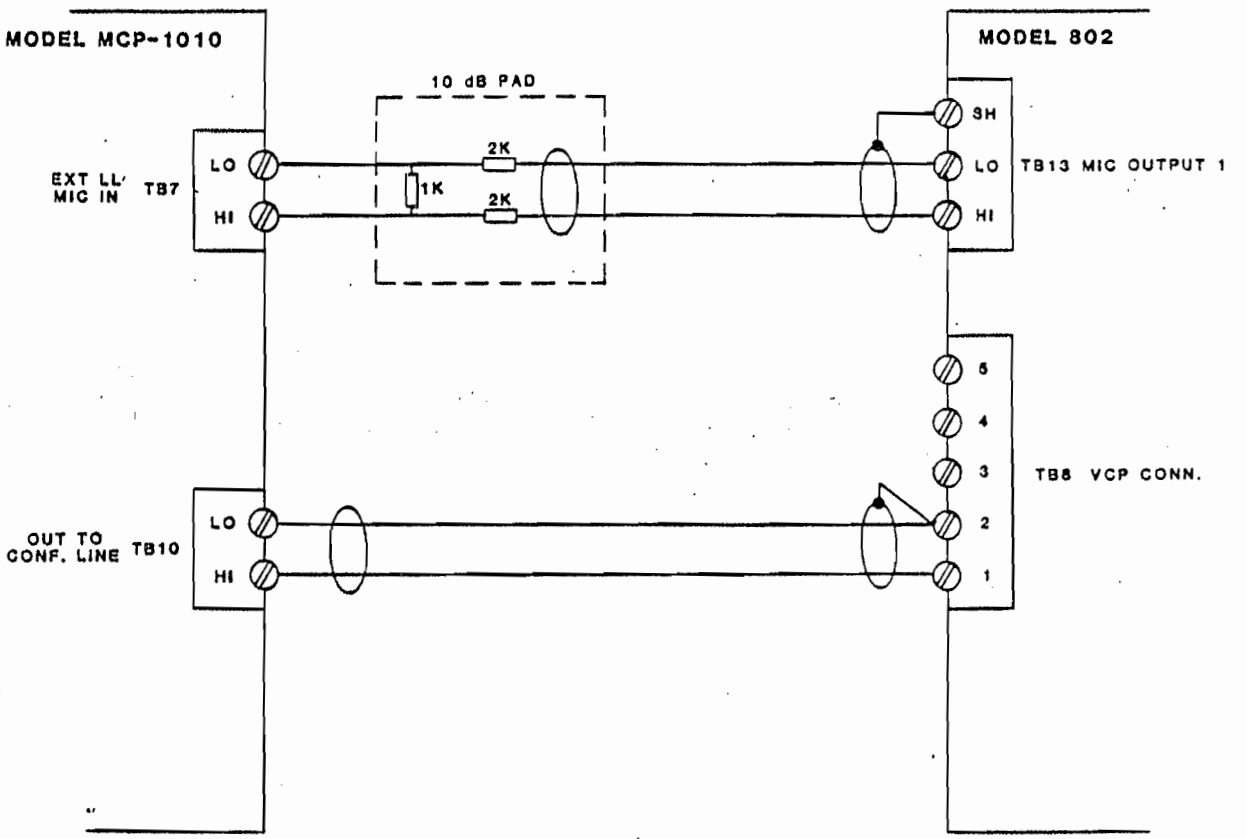
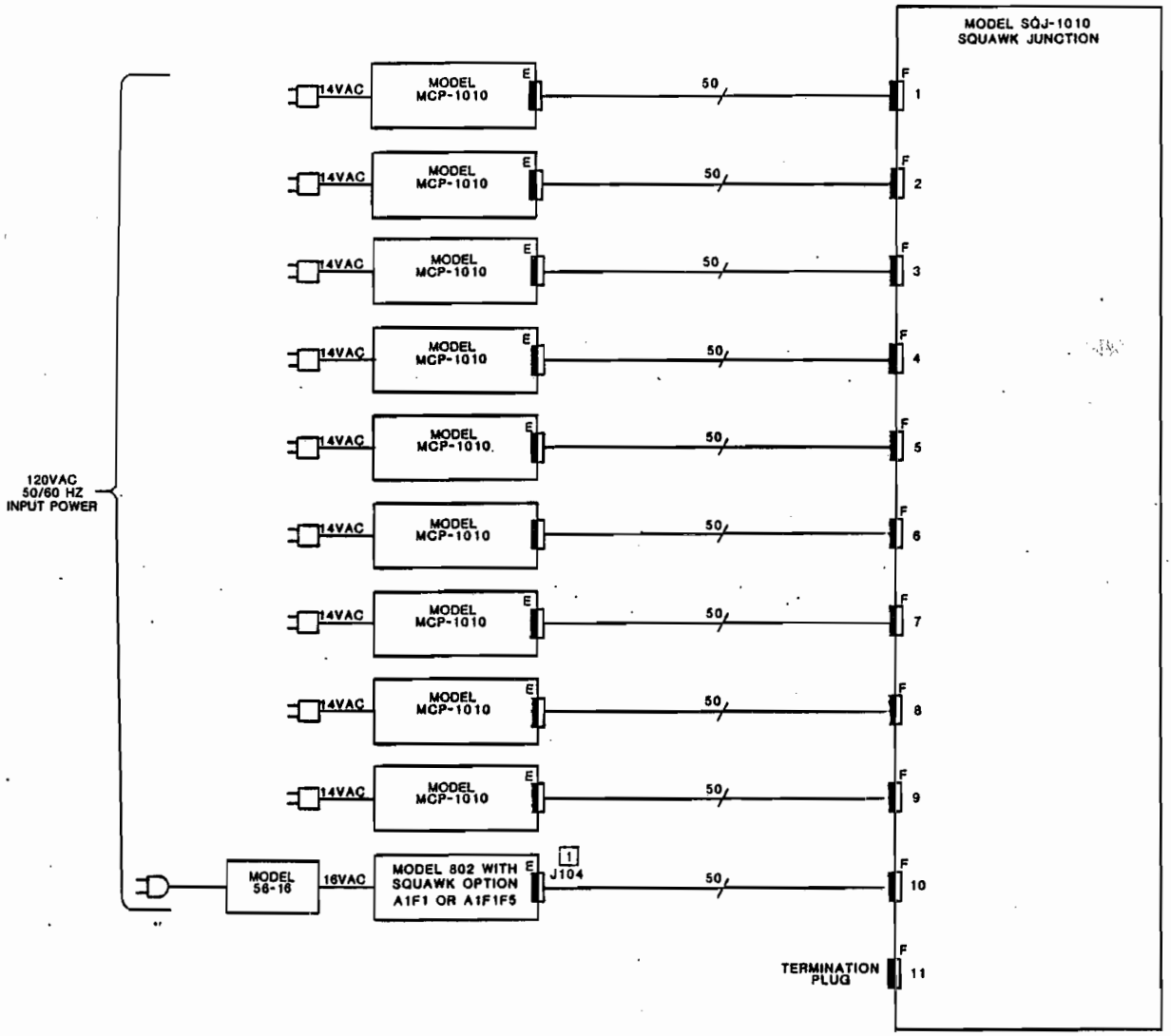


FIGURE 2-27
METHOD "A": MODEL 802 TO SQUAWK CONNECTION



NOTES: [1] THIS STATION MAY BE IN ANY POSITION (1 THROUGH 10)
MODEL 802'S MAY ALSO BE USED IN MORE THAN ONE POSITION.

FIGURE 2-28
METHOD "B": MODEL 802 TO SQUAWK CONNECTION

ELECTRICAL INSTALLATION/SIGNALS/CAMERA (VIDEO) ISO

The Model 802 may be used in either of two ways with the VIE-306 video iso electronics. Method "A" requires a model VCP-6 or VCP-12 video iso control panel. Method "B" will emulate a model VCP-6 video control panel station and requires no external parts.

Method "A" video iso requires an external VCP-6 or VCP-12 video control panel. Connect the video control panel to the 802 rear-panel VCP CONN terminal block as shown in Figure 2-30.

Method "B" video iso will emulate a model VCP-6. To use this option ISO option OPT802-H1 must be installed along with option base OPT802-A1.
Enable ISO option "B" by moving switch S125-4 on the mother board to ON (See Figure 2-32) and pushing the RESET button on the adjustment board. Connect output from rear-panel ISO connector J106 to the VIE-306 central electronics as shown in Figure 2-31.

With either ISO option "A" or "B", ISO DRIVEN LISTEN DISABLE may be enabled. This option will mute all incoming party line calls when an ISO channel is selected. To enable this option, move switch S125-5 on the mother board to ON as shown in Figure 2-32. In either case, outgoing party-line channels are disabled during video iso.

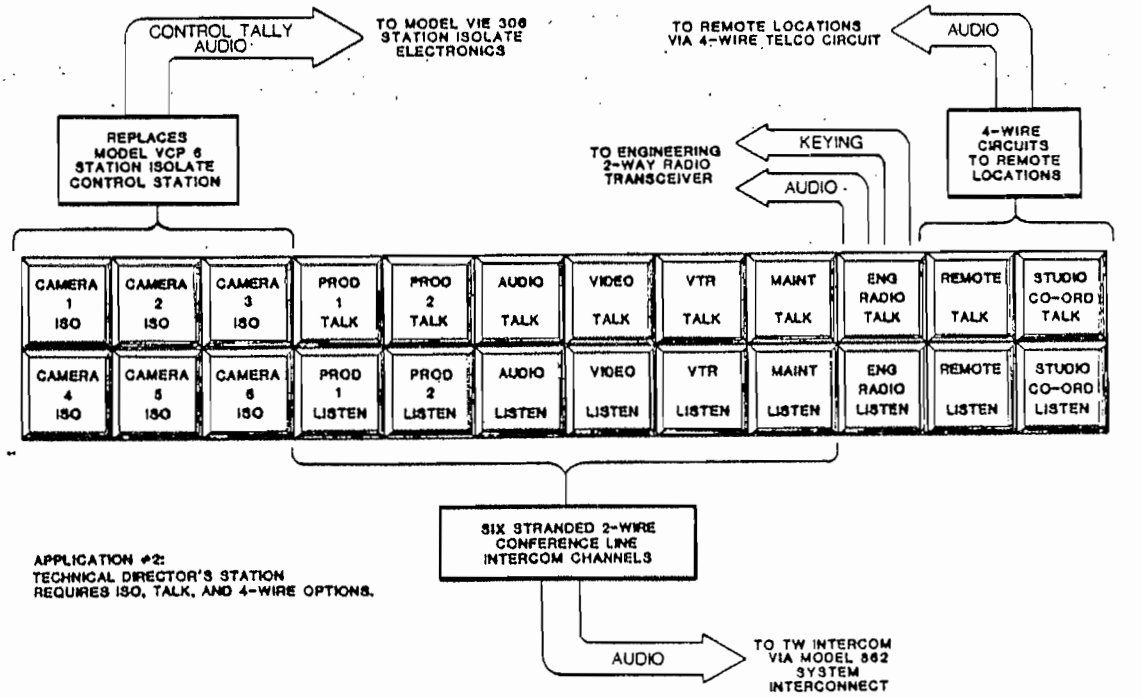


FIGURE 2-29
MODEL 802 FRONT PANEL BUTTON ARRANGEMENT FOR ISO (METHOD "B")

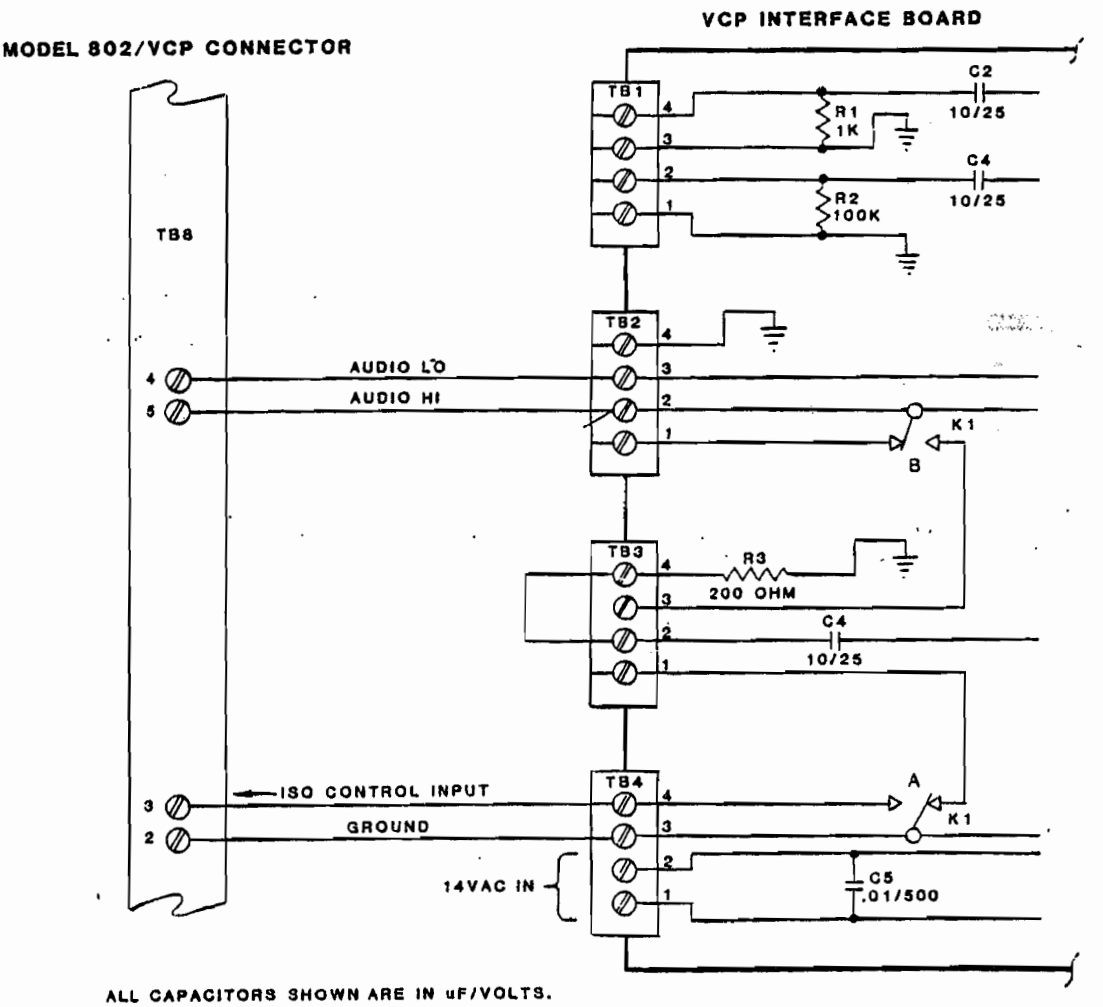


FIGURE 2-30
METHOD "A": MODEL 802 TO ISO CONNECTION

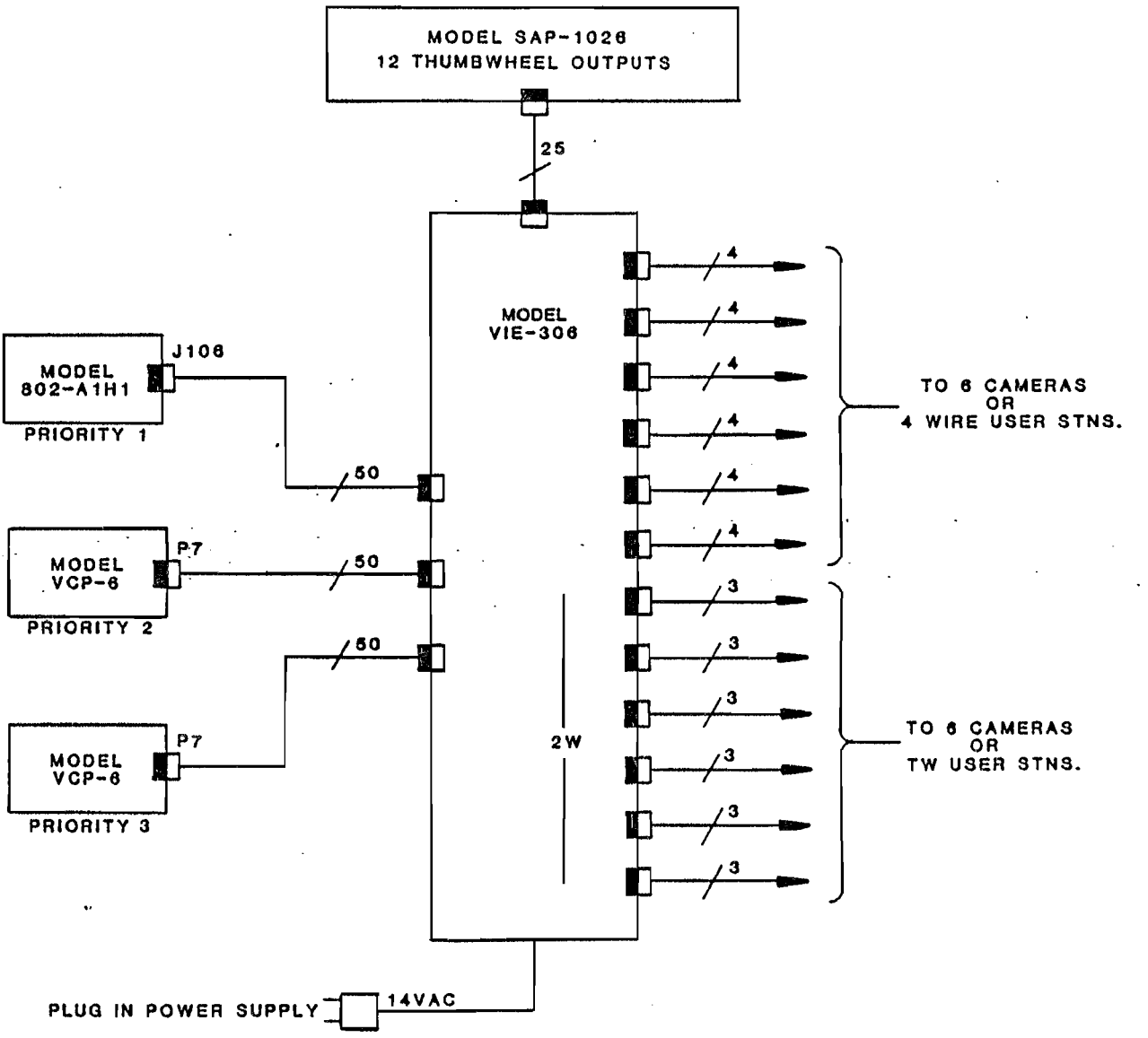
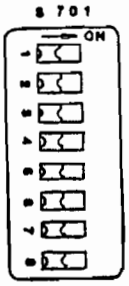


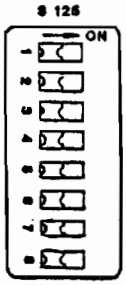
FIGURE 2-31
METHOD "B": MODEL 802 TO ISO CONNECTION
802/2nd Ed./October 15, 1986/Page 48



	FIRMWARE V & 3.0	FIRMWARE 4.2, 4.3, 4.5	FIRMWARE 4.6, 4.7
1.	CALL ANSWER	CALL ANSWER	Not Used
2.	INSTANT MIC ON	Not Used	Not Used
3.	IFB on/off	IFB on/off	IFB on/off
4.	IFB 8/4 or ISO 12/6	IFB 8/4 or ISO 12/6	IFB 4/8 or ISO 6/12
5.	PRESET EXCLUSIVE	PRESET EXCLUSIVE	PRESET EXCLUSIVE
6.	Not Used	Not Used	LISTEN FOLLOW TALK
7.	COLD START	COLD START	COLD START
8.	SET-UP DISABLE	SET-UP DISABLE	SET-UP DISABLE

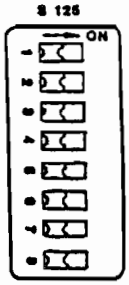
FIGURE 2-32A
ADJUSTMENT BOARD COMMAND SWITCH

FIRMWARE
V & 3.0



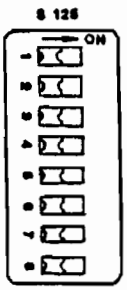
1. CALL LIGHT TIME OUT
2. TALK 7-12 ENABLE
3. ON=801 emulate
4. ISO ENABLE
5. ISO LISTEN DISABLE
6. IFB ENABLE
7. IFB SELECT
8. IFB TALK DISABLE

FIRMWARE
4.0, 4.1, 4.2, 4.3, 4.5, 4.6



1. CALL LIGHT TIME OUT
2. OFF=1-6 talk,ON=7-12 talk
3. ON=801 emulate
4. ISO ENABLE, OFF=external contact, ON=buttons
5. ON=disable listen buttons when ISO active
6. ON=ISO enable
7. Not Used
8. ON=disable talk buttons when IFB active

FIRMWARE
4.7



1. CALL LIGHT TIME OUT
2. OFF=1-6 talk,ON=7-12 talk
3. ON=801 emulate
4. ISO ENABLE, OFF=external contact, ON=buttons
5. ON=disable listen buttons when ISO active
6. ON=ISO enable
7. Not Used
8. ON=disable talk buttons when IFB active

FIGURE 2-32B
MOTHERBOARD DIP SWITCH ASSIGNMENTS

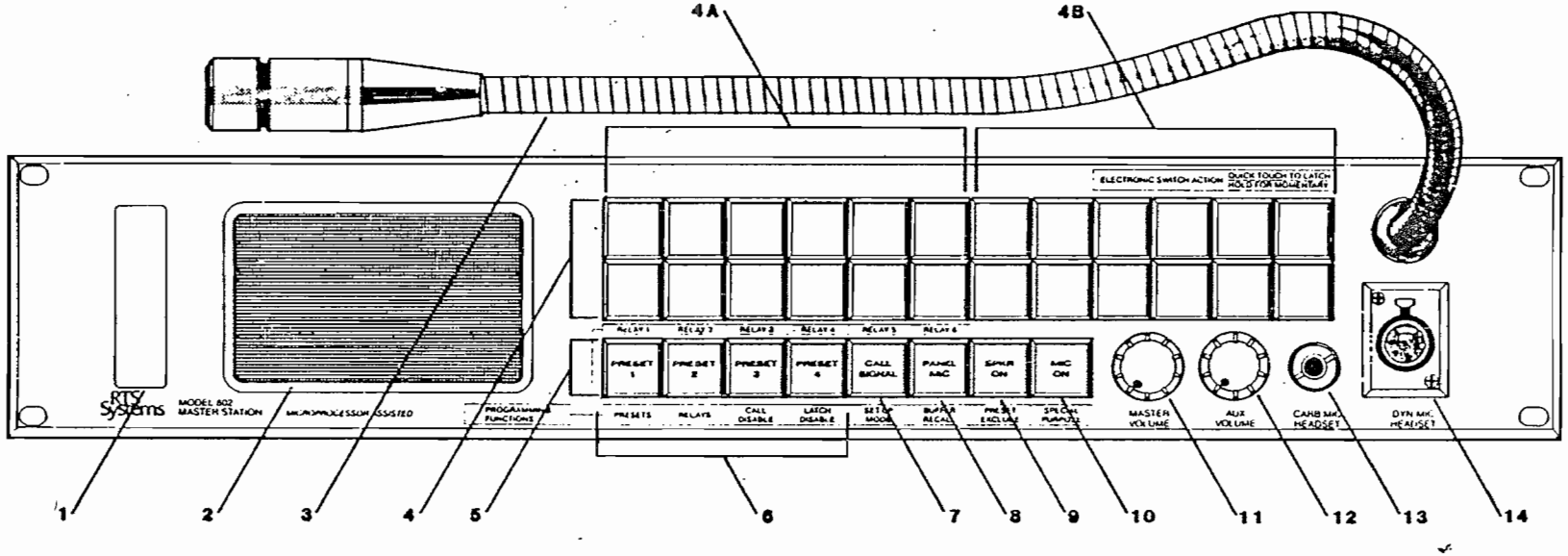


FIGURE 3-1
MODEL 802 FRONT PANEL PROGRAMMING BUTTONS

Model 802 SPECIAL PURPOSE Programming Mode Functions
By Karen Hultgren

The SPECIAL PURPOSE programming mode allows the user to choose additional operating features, described below. The description includes instructions for the user to implement the features.

BUTTON LOCK

BUTTON LOCK (formerly BUTTON INHIBIT) is used to lock buttons ON or OFF.

To lock ON: First clear display, then select button(s) you want locked ON. Go into SET UP MODE, select SPECIAL PURPOSE, then BUTTON LOCK. Reselect the same buttons you want locked ON. After you clear from SET UP MODE, these buttons will stay ON and cannot be turned OFF or programmed for any other function except keying relays. You cannot lock ON PRESETs.

To Lock OFF: Clear display and go into SET UP MODE. Select SPECIAL PURPOSE, then BUTTON LOCK. Select button(s) you want locked OFF. Clear from SET UP MODE and the selected switches cannot be turned ON. If you'd like to lock OFF some buttons but have a PRESET turn them ON, program the PRESET first and then BUTTON LOCK.

INSTANT MIC

INSTANT MIC activates MIC ON with any usable TALK button. Standard units can only use TALK 1 through TALK 6. Units with B3 option (TALK Channels 7 through 12) can use TALK 1 through TALK 12.

BILAT SELECT*

BILAT SELECT can turn ON a normally unused bilat with a button on the front panel. Go into SET UP MODE, select SPECIAL PURPOSE, then BILAT SELECT. Buttons will flash the available bilats, refer to Appendix B 4.7 software summary, page 8. Now, assign a button to control that bilat.

TOTAL MUTE

TOTAL MUTE is used to turn OFF all other buttons keyed ON with the touch of one button on the front panel. Only one button can be programmed for this function and when programmed cannot be used for any other purpose.

** Bilat means bilateral current source used as a two to four wire converter (RTS Systems patent number 4,358,644: "BILATERAL CURRENT SOURCE FOR A MULTITERMINAL INTERCOM").*

Model 802 SPECIAL PURPOSE Programming Mode Functions
By Karen Hultgren

CHIME SELECT, AUTO LISTEN, and AUTO TALK are used with the CALL Option only.

CHIME SELECT

CHIME SELECT is used with Chime Option, E1, only. You have a choice of several chime tones which are Dissonant Tone, Bell Tone, Sweep Tone, and no tone. Only one tone can be used at a time. Normally, the 802 uses the Bell Tone which sounds after the software version is shown on the 802 front panel after "power up" or RESET.

To change chime tone, go into SET UP MODE. Select SPECIAL PURPOSE, then CHIME SELECT. Select desired chime tone whose button locations are shown in Appendix B 4.7 software summary, page 7. Push CALL SIGNAL button to hear that tone. You'll now be out of the SET UP MODE because the CALL SIGNAL button doubles as the SET UP button.

To turn Off the chime tones, go into SET UP MODE, select SPECIAL PURPOSE and then CHIME SELECT. The available chime tone buttons will flash, one being out of phase with the others, push that button so all the buttons flash together.

Note: If the selected Chime is too loud or too soft, pull out the adjustment board and adjust the "Chime Level" pot.

AUTO LISTEN

AUTO LISTEN functions as follows, when a person at a location remote to a given 802 pushes his CALL transmit button, a call signal is received at the 802. The channel receiving the call signal will key ON that channel's LISTEN button which will remain ON as long as the person at the remote location holds down their CALL transmit button. This allows the caller to vocally announce their call as well as send the call signal.

AUTO TALK

AUTO TALK functions the same as AUTO LISTEN except both the TALK and MIC ON buttons will be keyed ON instead of the LISTEN buttons. This allows the 802 operator to talk back to the person at a remote location without touching any buttons.

Model 802 SPECIAL PURPOSE Programming Mode Functions
By Karen Hultgren

EXT. CONTACT

The EXTERNAL CONTACT formerly operated only the MIC ON switch. The EXTERNAL CONTACT is now programmable with the default state operating the MIC ON switch (which means that the MIC ON will not be keyed ON when this program is used). Programming the EXTERNAL CONTACT allows the EXTERNAL MIC switch contacts (TB7) located on the 802 rear panel, to be used to key ON a 802 front panel button. Only one button can be programmed for this function. You can, however, program a PRESET to turn ON a group of buttons. To do that, program your PRESET first, then program the EXT. CONTACT to turn ON that PRESET. To turn ON the MIC ON as well, see the INSTANT MIC programming feature, above.

TALK TURNS ON LISTEN

TALK TURNS ON LISTEN functions as whenever a particular TALK channel button is pushed ON, the TALK's corresponding LISTEN button will be automatically keyed ON. The LISTEN button will stay ON until the 802 operator pushes it OFF or the TALK button is pushed OFF.

TALK TURNS OFF LISTEN

TALK TURNS OFF LISTEN functions as whenever a particular TALK channel button is pushed ON, the TALK's corresponding LISTEN button, if ON, will be automatically keyed OFF. The LISTEN button will stay OFF until the operator pushes it ON or the TALK button is pushed OFF.

APPENDIX A

SUMMARY OF 802 SOFTWARE VERSIONS

Version 4.7

Added two features:

* (1) TALK key turns on corresponding LISTEN key

* (2) TALK key turns off corresponding LISTEN key

Version 4.6

Added features:

* Choice of 6 or 10 squawks

* Allows assigning of unused bilats to buttons

* Displays version number of software during power-on

* Ability to program a total mute button

* Programmable auto listen-on when receiving a call

* Auto-Call now programmable on individual buttons

* Choice of 3 chime tones

* External (rear panel) mic contact can be programmed to any button

* Exclusive talk/listen feature:

    1 talk/listen pair at a time

NOTES on Version 4.6:

1. Versions 4.5/4.6 are the first to use four EPROM's, previous versions used three EPROM's.

2. Bilat 13/14 talk/listen gates not lifted/saved, (For example: during ISO).

(Continued)

Version 4.5

Same as Version 4.6, but not released because of a bug: External Iso doesn't key on the MIC.

Version 4.4

This version never issued.

Version 4.3

Correct minor bugs in version 4.2.

Version 4.2

Added features:

* Added Global Reset button for VCP6A and VCP12A options
* Instant mic is now programmable to individual buttons

Version 4.1

Added features:

* Both ISO and IFB moved to right side of panel
* Any button can be programmed to be ignored

APPENDIX B.4.6

DOCUMENTATION SUMMARY SOFTWARE VERSION 4.6

MOTHER BOARD DIP SWITCH ASSIGNMENTS

1. Call light time-out selection.
2. OFF = 1-6 talks, ON = 7-12 talks.
3. ON = 801 emulation.
4. ISO select. OFF = external contact, ON = buttons.
5. ON = disable listen buttons when ISO active.
6. ON = ISO system enabled.
7. Not used.
8. ON = disable talk buttons when IFB active.

ADJUSTMENT BOARD DIP SWITCH ASSIGNMENTS

1. Not used (old auto-call).
2. Not used (old instant mic).
3. ON = IFB system enabled.
4. Number of IFB's or ISO's. OFF = 6, ON = 12.
5. Only one preset on at a time [INTERLOCKING SWITCH ACTION].
6. When talks active, only corresponding listens can be active.
7. ON = Always "cold start".
8. ON = Disable setup mode.

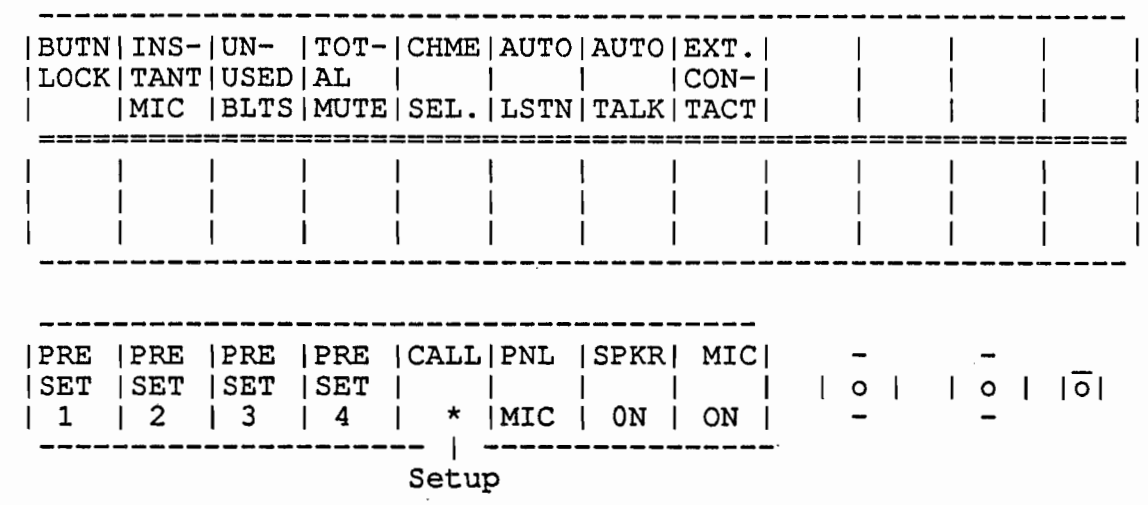
SQUAWK BOARD DIP SWITCH ASSIGNMENTS

1. OFF = up to 6 squawks, ON = up to 10 squawks.
2. ON = SQUAWK system enabled.
3. Adjusts which buttons have squawk.
4. Adjusts which buttons have squawk.
5. Saves talk when squawk used.
6. Saves listen when squawk used.

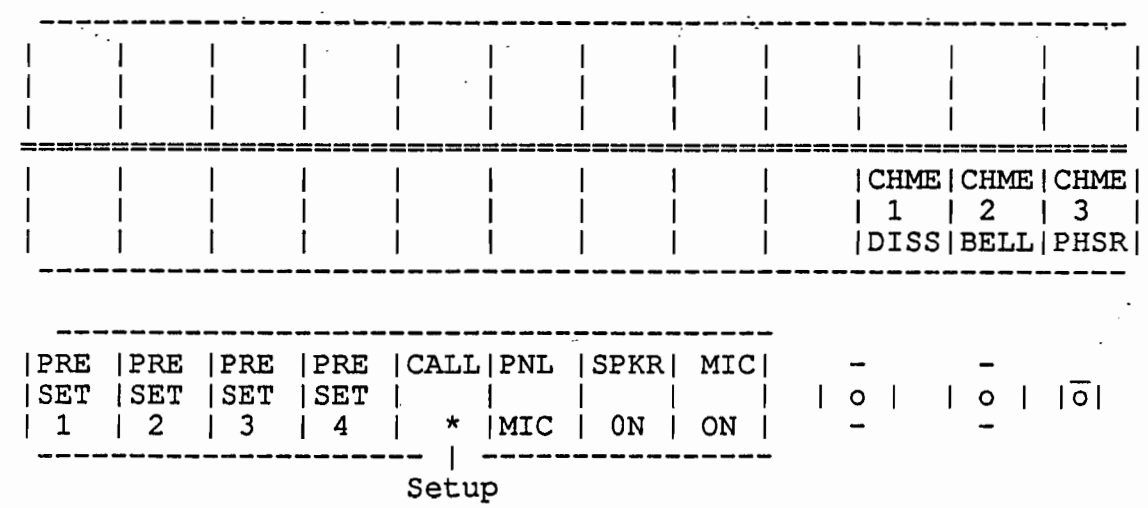
CHIME CHOICES

1. Dissonant tone (DISS).
2. Bell.
3. Sweep tone (PHaSoR).

SPECIAL PURPOSE FUNCTIONS



CHIME SELECT



UNUSED BILATERAL CURRENT SOURCE SELECTION

				TG 13	TG 14	ISO TLK	LG 13	OLD ISO LG	LG 14	LG 15	LG 16	Top Button Row
Corresponding Circuit Points to top row Buttons.				PIO2 3 BIT0	PIO2 3 BIT1	PIO1 5 BIT6	PIO2 2 BIT4	PIO1 5 BIT7	PIO2 2 BIT5	PIO2 2 BIT6	PIO2 2 BIT7	

VERSION INDENTIFICATION (VERSION 4.62 ILLUSTRATED)
(OCCURS ON POWER-UP)

			XXXX XXXX XXXX								
1	2	3		5	6	7	8	9			
					XXXX XXXX XXXX						
1	2	3	4	5		7	8	9			

PRE SET 1	XXXX XXXX XXXX	PRE SET 3	PRE SET 4	CALL	PNL MIC	SPKR ON	MIC ON	- o -	- o -	o
1	2	3	4	5	6	7	8			

XXXX
XXXX <------ indicates a lit button.
XXXX

APPENDIX B.4.7

DOCUMENTATION SUMMARY SOFTWARE VERSION 4.7

MOTHER BOARD DIP SWITCH ASSIGNMENTS

1. Call light time-out selection.
2. OFF = 1-6 talks, ON = 7-12 talks.
3. ON = 801 emulation.
4. ISO select. OFF = external contact, ON = buttons.
5. ON = disable listen buttons when ISO active.
6. ON = ISO system enabled.
7. Not used.
8. ON = disable talk buttons when IFB active.

ADJUSTMENT BOARD DIP SWITCH ASSIGNMENTS

1. Not used (old auto-call).
2. Not used (old instant mic).
3. ON = IFB system enabled.
4. Number of IFB's or ISO's. OFF = 6, ON = 12.
5. Only one preset on at a time.
6. When talks active, only corresponding listens can be active.
7. Always "cold start".
8. Disable setup mode.

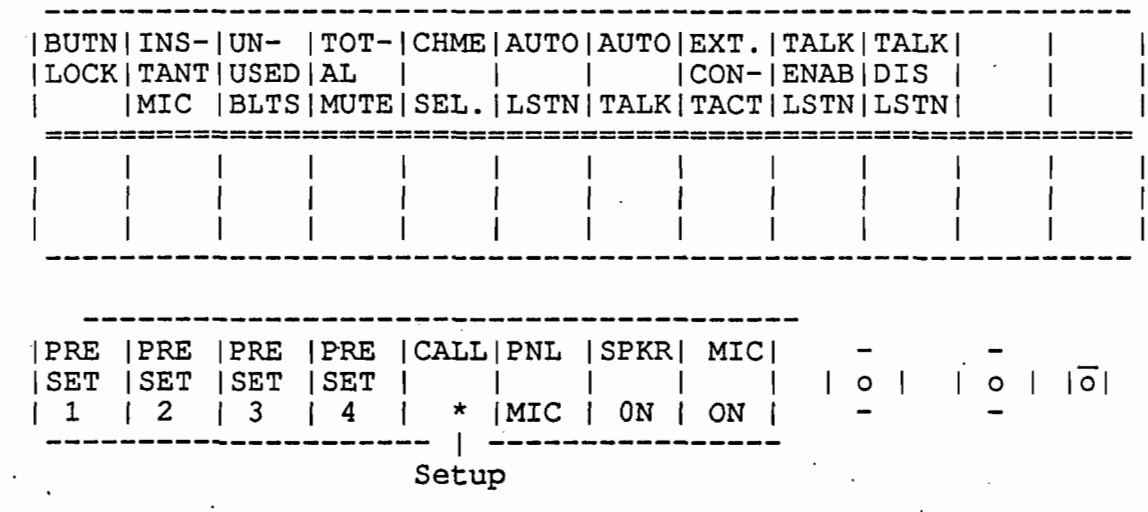
SQUAWK BOARD DIP SWITCH ASSIGNMENTS

1. OFF = up to 6 squawks, ON = up to 10 squawks.
2. ON = SQUAWK system enabled.
3. Adjusts which buttons have squawk.
4. Adjusts which buttons have squawk.
5. Saves talk when squawk used.
6. Saves listen when squawk used.

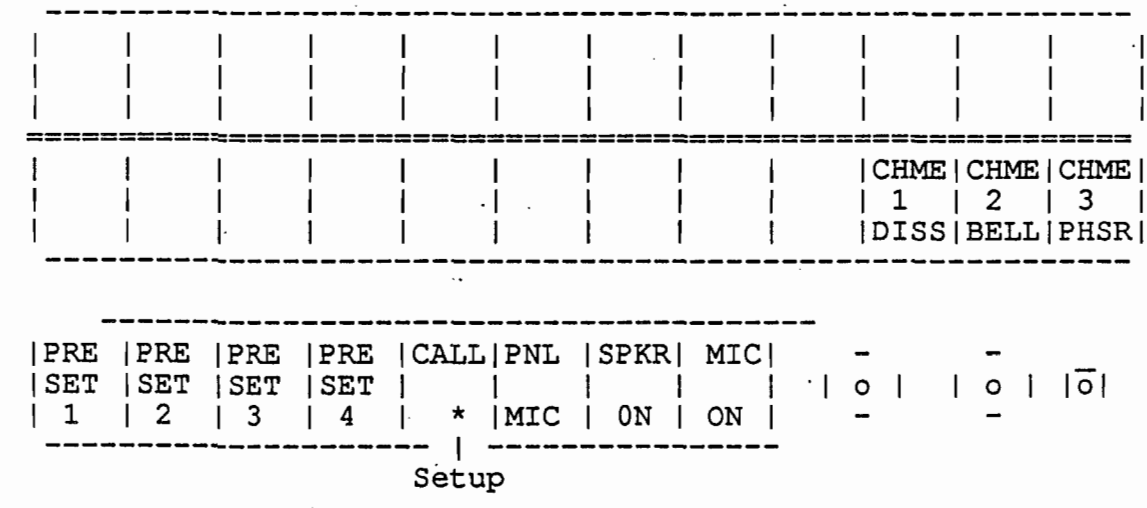
CHIME CHOICES

1. Dissonant tone (DISS).
2. Bell.
3. Sweep tone (PHaSoR).

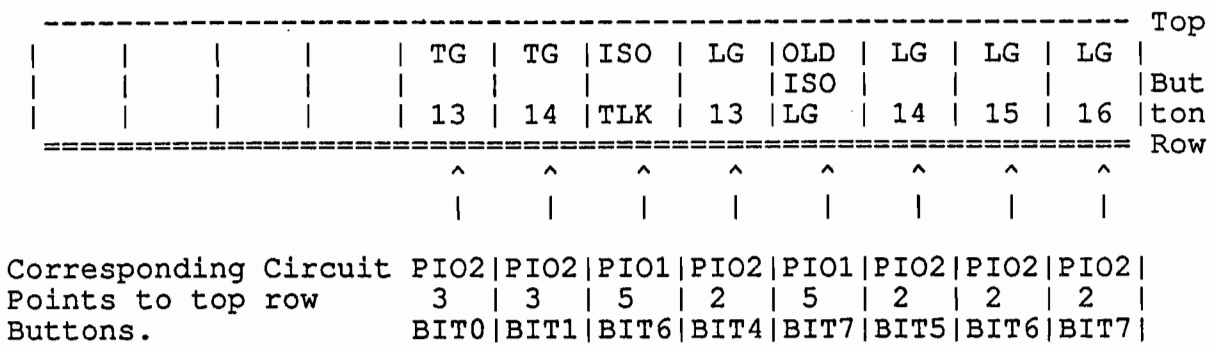
SPECIAL PURPOSE FUNCTIONS



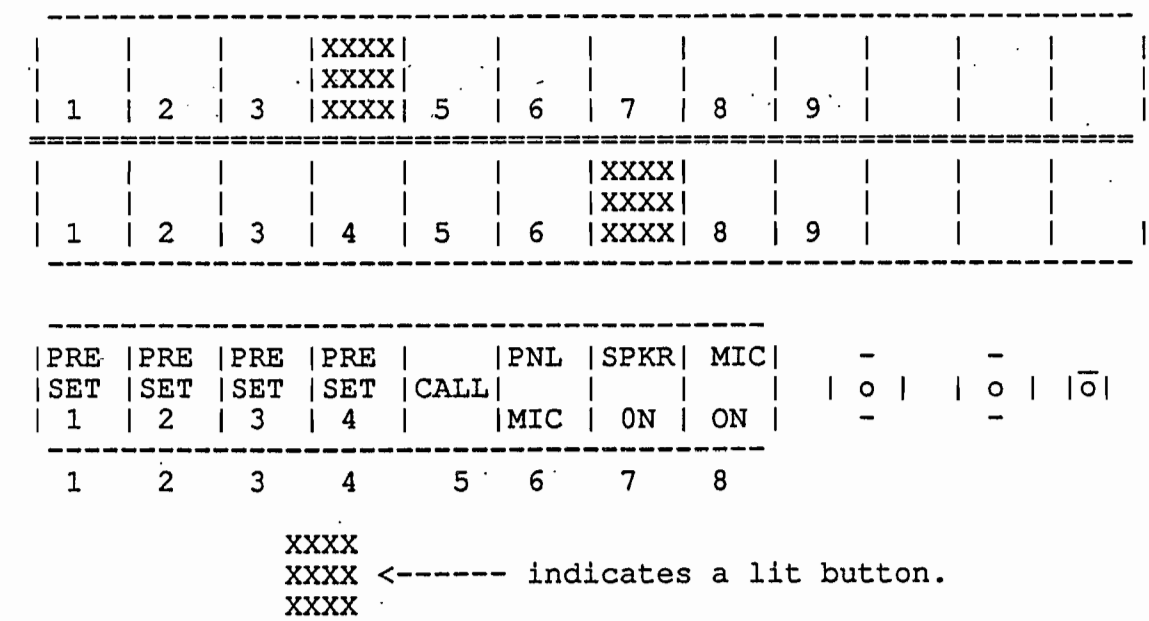
CHIME SELECT



UNUSED BILATERAL CURRENT SOURCE SELECTION



VERSION INDENTIFICATION (VERSION 4.7 ILLUSTRATED)
(OCCURS ON POWER-UP)



XXXX
XXXX <------ indicates a lit button.
XXXX

APPENDIX C

MODEL 802 MASTER STATION - OPTION NUMBERING SYSTEM AND ORDERING SYSTEM

Each option for the 802 is listed as a separate model number (derived from the coding system below) which always starts with "OPT802-" followed by a suffix containing both a letter and a number. (i.e. OPT802-B1).

The suffix letter designates what the option is:

A Option Base	J (future)	S (future)
B Talk	K (future)	T (future)
C 4-wire	L (future)	U (future)
D Signal	M (future)	V (future)
E Chime	N (future)	W (future)
F Squawk	O Not to be used	X (future)
G IFB	P (future)	Y (future)
H ISO	Q Not to be used	Z Custom
I Not to be used	R (future)	

The suffix number designates how the option is to be sold/installed:

0 not installed (sold for field installation or as a spare)
1 factory installed, no assignment required
2 factory installed, in channels 1-6
3 factory installed, in channels 7-12
4
5 factory installed, as secondary (additional) option (i.e. upgrade to: ten squawk channels; IFB 4002
6 not installed, as secondary (additional) option
7
8
9 special instructions required

(Continued)

APPENDIX C

MODEL 802 MASTER STATION - OPTION NUMBERING SYSTEM AND ORDERING SYSTEM

(Continued)

OPTION NAME/ NUMBER DESCRIPTION

The RTS Order Acknowledgement ("OA") lists each individual option as a separate line item, normally listed directly below the associated 802.

Ordering example:

Quantity	Model	Description
1	802	Master Station
1	OPT802-A1	Option Base, installed
1	OPT802-B3	Talk, installed
1	OPT802-C3	4-Wire, installed, ch 7-12
1	OPT802-E1	Chime, installed
1	OPT802-G1	IFB 4001, installed

"OPTION BASE": REQUIRED TO SUPPORT CERTAIN OPTIONS (INDICATED BELOW). NOTE: only one "OPTION BASE" is required per individual 802.)

OPT802-A0	Option Base, not installed
OPT802-A1	Option Base, installed

"TALK" OPTION: ADDS CIRCUITRY TO CHANNELS 7-12

OPT802-B0	TALK, not installed
OPT802-B3	TALK, installed

"4-WIRE" OPTION: ADDS 4-WIRE CAPABILITY TO SIX CHANNELS

OPT802-C0	4-Wire, not installed
OPT802-C2	4-Wire, installed, ch 1-6
OPT802-C3	4-Wire, installed, ch 7-12

(NOTE: OPTION C3 REQUIRES "TALK" OPTION B1)

(Continued)

APPENDIX C

MODEL 802 MASTER STATION - OPTION NUMBERING SYSTEM AND ORDERING SYSTEM

(Continued)

OPTION NAME/ NUMBER	DESCRIPTION
"SIGNAL" OPTION:	ADDS CALL SIGNALING CAPABILITY TO SIX CHANNELS
OPT802-D0	Signal, not installed
OPT802-D2	Signal, installed, ch 1-6
OPT802-D3	Signal, installed, ch 7-12
(NOTE: REQUIRES "OPTION BASE" A1)	
(NOTE: OPTION D3 ALSO REQUIRES "TALK" OPTION B1)	
"CHIME" OPTION:	GENERATES AUDIBLE OUTGOING AND INCOMING SIGNAL
OPT802-E1	Chime, installed, factory only
(NOTE: REQUIRES "SIGNAL" OPTION D2 OR D3)	

OPTION NAME/ NUMBER	DESCRIPTION
"SQUAWK" OPTION:	PROVIDES DEDICATED LINE INTERCOM CAPABILITY (and MODEL 810 emulate).
OPT802-F0	Squawk, not installed
OPT802-F1	Squawk, installed, ch 1-6,
OPT802-F5	Squawk, installed, ch 7-10
(NOTE: REQUIRES "OPTION BASE")	
(NOTE: OPTION F5 ALSO REQUIRES OPTION F1)	

(Continued)

APPENDIX C

MODEL 802 MASTER STATION - OPTION NUMBERING SYSTEM AND ORDERING SYSTEM

(Continued)

"IFB" OPTION: EMULATES A MODEL 4001 OR MODEL 4002 IFB CONTROL STATION

OPT802-G0 IFB, not installed
OPT802-G1 IFB, 4001, (IFB 1-4, SA 1
OPT802-G5 IFB, 4002, (IFB 5-8, SA 2)
(NOTE: REQUIRES "OPTION BASE")
(NOTE: OPTION G5 ALSO REQUIRES OPTION G1)
(NOTE: G1 AND G5 ARE BOTH INSTALLED)

"ISO" OPTION: EMULATES A MODEL VCP6A STATION ISO CONTROL PANEL

OPT802-H0 ISO, VCP6A, not installed
OPT802-H1 ISO, VCP6A, installed
(NOTE: REQUIRES "OPTION BASE")

End Software 4.7 update

SECTION 3: INSTRUCTIONS FOR PROGRAMMING THE MODEL 802

Introduction

There are two kinds of programming functions on the Model 802: Hardware and software. The hardware programming is accomplished via "dip switches" and by plugging in option boards. The software programming is accomplished via the front panel buttons.

HARDWARE FUNCTIONS

The hardware "dip switches are located on:

The motherboard, near the back panel.
The adjustment board at the very back.
The Talk/Squawk Option board.

The option boards that effect programming are:

The Talk/Squawk Option board(s).
The Signaling Option board(s)...(Also called the "Call Light" Option boards).

Plugging in the Talk/Squawk Option board and setting the dip switches on it and the motherboard for "Squawk" functions causes the Model 802 to operate in the "Squawk" mode.

Plugging in the Signaling (Call Light) Option board activates the Signaling Option.

DIP SWITCHES

The adjustment dip switch assembly has an eight function programming capability. See Figure 2-32A for illustration.

The motherboard board dip switch assembly has an eight function programming capability. See Figure 2-32B for the present function assignments.

SEE ADDENDUM FOR THE SOFTWARE FUNCTIONS

SET-UP MODE (See Figure 3-1)

To program the Front Panel functions, you must first enter the SET-UP mode. The SET-UP mode is entered by holding the CALL SIGNAL BUTTON {7} for about three seconds. When the SET-UP mode is entered, the microprocessor first stores the existing front panel settings in a temporary "buffer" memory, then clears the front panel. The SET-UP mode is indicated by the SET-UP MODE (CALL SIGNAL) button being steadily illuminated, and this is the only mode in which this button remains steadily illuminated. After entering the SET-UP MODE, the "valid" selection buttons will flash to allow you to select the function that you want to program. Only buttons applicable to the standard functions and installed options will flash. In general, during the SET-UP process, the microprocessor indicates via flashing or winking buttons, the step-by-step procedure to follow.

If, after entering the SET-UP mode, no button is pressed within 13 seconds, the Model 802 will exit or leave the SET-UP mode and return to normal operation. If, however, a selection is made, the unit will remain in SET-UP mode until intentionally exited. In addition, the selected function button will illuminate steadily, indicating what is being programmed, until programming has been completed and stored in memory. After selection, the buttons which are valid selections within the particular programming mode will "wink" ("wink" here, means that the lamp brightens or dims quickly rather than "flashing" half on/ half off). The microprocessor accepts commands only from valid buttons.

PRESET programming function (See Figure 3-1)

The PRESET programming function enables any one or combination of the circuits controlled by the twenty-four selection buttons {4} to be assigned to, and be activated by, one or more of the four PRESET buttons {6}. A simple example would be assigning all of the TALK circuits to PRESET #4, making PRESET #4 an "ALL TALK" button.

To program an "ALL TALK" button using the PRESETS programming function:

1) Enter the "SET-UP MODE",
2) Choose PRESETS by pushing the PRESETS (PRESET 1)button,
3) Choose PRESET 4 by pushing PRESET 4,
4) Select all talks by pushing each of the six (or 12) talk buttons {4A}, {4B},
5) Push PRESET 4 again to store that setting in the PRESET 4 memory and continue programming; or push the SET-UP MODE (CALL SIGNAL) button to store the setting in memory, exit the SET-UP MODE, and return to normal operation.

A preset is activated, or "called-up", from memory, by pushing the appropriate PRESET button (in either a momentary or latching mode). Prior to activating the circuits specified by the preset memory, the microprocessor first stores the existing button settings in its temporary buffer memory, then, when the preset is released, the microprocessor restores the previous button settings.

RELAYS programming function (See Figure 3-1)

The RELAYS function enables any of the six programmable relays to be assigned to- and be activated by- any one or combination of the twenty-four selection buttons {4} and/or the SPeaKeR ON {9} and MICrophone ON {10} buttons. These relay contacts are accessible on the rear panel and can be used for any audio or low-current control switching requirements. An example might be assigning a relay to turn off a monitor loudspeaker in a control room.

To program a button to activate a relay:

1) Enter the "SET-UP MODE",
2) Choose RELAYS by pushing the RELAY (PRESET 2) button,
3) Choose which of six relays your are programming by pushing RELAY 1 through RELAY 6 (LISTEN buttons for channels 1 through 6 respectively),
4) Push the buttons that will activate the chosen relay,
5) Push RELAYS (PRESET 2) to store the setting and do further programming, or push the SET-UP MODE (CALL SIGNAL) button to store the setting in memory, exit SET-UP MODE and return to normal operation.

CALL LIGHTS programming function (See Figure 3-1)

The CALL DISABLE (call signal receive disable) programming function is only enabled if the Model 802 is equipped with a Call Signal option. In a multiple Master Station system, all 802's may not want to receive incoming CALL signals from all channels. Individual 802's may be selectively programmed to accept CALL signals only from specific channels. For example, in a television studio, the audio booth's 802 would be programmed to accept signals on the Audio channel only while other 802's would be programmed to reject any signals on the Audio channel. Only the receive function is programmable. The "send" or outgoing signal is always enabled on all channels equipped with the Signal option.

To program the CALL DISABLE programming function to a button or buttons:

1) Enter the "SET-UP MODE",
2) Push the CALL DISABLE (PRESET 3) button,
3) Push one or more buttons that you wish to disable the CALL function,
4) Push the CALL DISABLE (PRESET 3) button again to store the setting and to do further programming, or push the SET-UP MODE (CALL SIGNAL) button to exit SET-UP MODE.

LATCH DISABLE programming function (See Figure 3-1)

The LATCH DISABLE programming function allows the latching action of any dual-action button to be disabled. This means a button can be programmed to function as a momentary action button only. A logical application would be when a TALK button is programmed to key a two-way radio transmitter. In this application, when the transmitter should not be keyed continuously on, disabling the latch action allows momentary keying only.

To program the LATCH DISABLE programming function to a button:

1) Enter the "SET-UP MODE",
2) Push the LATCH DISABLE (PRESET 4) button,
3) Push one or more buttons that you wish to disable the latch function,
4) Push the LATCH DISABLE (PRESET 4) button again to store the setting and do further programming, or push the SET-UP MODE (CALL SIGNAL) button to store the setting(s), exit SET-UP MODE and return to normal operation.

PRESET EXCLUDE programming function (See Figure 3-1)

The PRESET EXCLUDE programming function allows one or more of the twenty-four selection buttons to be excluded from the PRESET function. This means that the excluded button cannot be programmed to be part of a preset. As such, it will no longer be considered a valid button during PRESET programming, and it will not change state when a preset is selected. The PRESET EXCLUDE function, therefore, may be used to avoid turning off an important circuit by activation of a preset.

To program a button using the PRESET EXCLUDE programming function:

1) Enter the "SET-UP MODE",
2) Push the PRESET EXCLUDE (SPEAKER ON) button,
3) Push one or more buttons that you wish to exlude from being preset.
4) Push the PRESET EXCLUDE button again to store that setting and do further programming, or push the SET-UP MODE (CALL SIGNAL) button to store the setting, exit SET-UP MODE and return to normal operation.

BUFFER RECALL function

The BUFFER RECALL is used in conjunction with the PRESETS function as follows:

1) Upon entering the SET-UP MODE, the microprocessor first stores the existing front panel settings in a temporary "buffer" memory,
2) After selecting the PRESETS programming function and selecting PRESET 1, 2, 3, or 4, push BUFFER RECALL to transfer the pre-SET-UP front panel settings from the temporary buffer memory into the preset you are programming. You can store that setting in the normal manner as explained in the preset programming section.

SPECIAL PURPOSE programming function

The SPECIAL PURPOSE programming function enables 24 additional functions, of which two are assigned in Firmware Version 4.3:

Row/Column	Function
1/1	BUTTON DISABLE ASSIGN
1/2	INSTANT MIC ON ASSIGN

The BUTTON DISABLE ASSIGN function allows any of the 24 Talk/Listen or 4 Preset buttons to be locked ON or OFF. For example, a Talk button and an assigned relay may be holding a telephone line on during a particular operation, and locking the button will prevent accidently disconnecting the phone line. Or, in another example, access to a given channel may be restricted at some master stations by locking the talk and listen buttons for that channel in the OFF state.

To program the BUTTON DISABLE function to a button:

1) Enter the "SET-UP MODE",
2) Push the SPECIAL FUNCTION (MIC ON) button,
3) Of the buttons now flashing, push the button at Row 1, Column 1.
4) Push one or more buttons that you wish to disable.
4) Push the SPECIAL FUNCTION button again to store the setting and do further programming, or push the SET-UP MODE (CALL SIGNAL) button to store the setting(s), exit SET-UP MODE and return to normal operation.

The INSTANT MIC ON ASSIGN function allows a Talk button to automatically key the Microphone ON/OFF Switch. For example, a Talk button and its associated channel could be made into a Page or Stage Announce function. The default states for the INSTANT MIC ON ASSIGN are as follows: The regular 12 channels of intercom Talk buttons <u>are not</u> INSTANT MIC ON; the IFB, Squawk and Iso functions <u>are</u> normally INSTANT MIC ON.

To program the INSTANT MIC ON (or not ON) function to a button:

1) Enter the "SET-UP MODE",
2) Push the SPECIAL FUNCTION (MIC ON) button,
3) Of the buttons now flashing, push the button at Row 1, Column 2.
4) Push one or more buttons that you wish to enable or disable.
4) Push the SPECIAL FUNCTION button again to store the setting and do further programming, or push the SET-UP MODE (CALL SIGNAL) button to store the setting(s), exit SET-UP MODE and return to normal operation.

ADDENDA

SUBJECT: 802 UPDATES FOR COMPATIBILITY WITH MODELS VCP-6A1 VCP-12A

DATE: 10-25-84

THE UPDATE FROM THE VCP-6/VCP-12 OPTIONS TO THE VCP-6A/VCP-12A 802 ISO OPTIONS CONSISTS OF THE ADDITION OF A "GLOBAL RESET" FUNCTION. THIS GLOBAL RESET FUNCTION APPEARS ON THE 802 FRONT PANEL BUTTON NORMALLY USED AS PRESET 4 (802 UNITS WITH THE UPDATED VCP-6A/VCP-12A ISO OPTIONS HAVE ONLY 3 PRESET BUTTONS AVAILABLE). WHEN THE GLOBAL RESET BUTTON IS PUSHED, ALL ISO BUTTONS ON ANY 802'S, VCP-6A'S, AND/OR VCP-12A'S IN THE SYSTEM WILL RESET. 802 UNITS, WITH ISO OPTIONS, WHICH HAVE NOT BEEN UPDATED TO INCLUDE GLOBAL RESET WILL STILL WORK WITH A VCP-6A/VCP-12A SYSTEM, BUT THE 802 WILL NOT BE ABLE TO GENERATE OR RECEIVE THE GLOBAL RESET COMMAND.

IF AN 802 UNIT, WITH ANY ISO OPTIONS (H0, H1, H5), DOES NOT APPEAR TO HAVE THE GLOBAL RESET FUNCTION, REMOVE THE BOTTOM COVER AND CHECK THE REVISION LETTER ON THE MOTHER BOARD (AW3000-1). 802 UNITS WITH MOTHER BOARDS HAVING REVISION LETTERS OF "G" OR LESS HAVE NOT BEEN UPDATED.

TO UPDATE THE 802 UNIT, WITH AN ISO OPTION, FOR GLOBAL RESET:

1) ADD THE FOLLOWING TO THE CIRCUIT (BOTTOM) SIDE OF THE MOTHER BOARD (REFER TO SHEET 2):

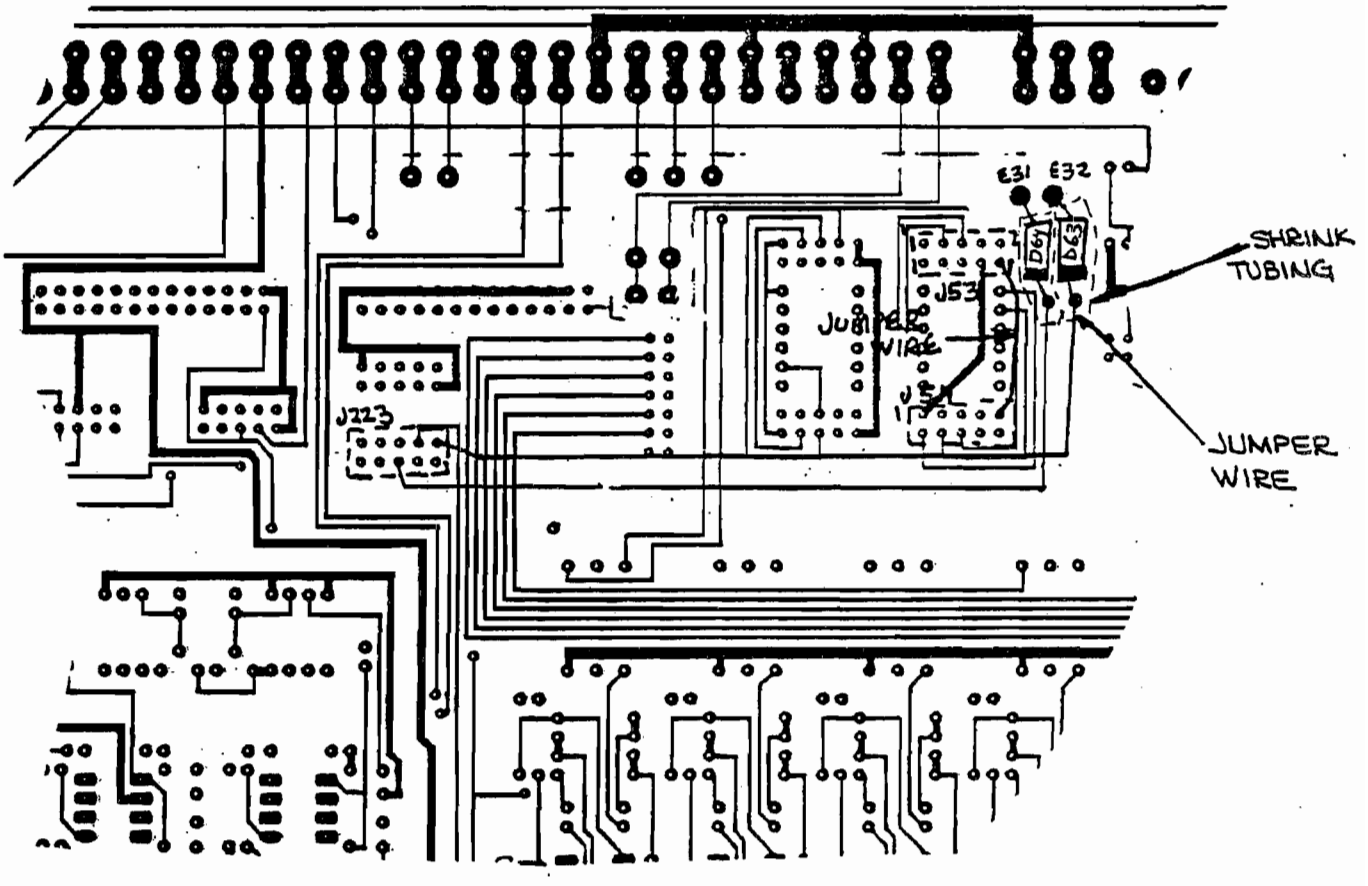
   A) ADD D64 (DIODE, INTERNATIONAL RECTIFIER #11DQ03, RTS #1601-0001-00) BETWEEN J53 PIN 9 (ANODE) AND J223 PIN 6 (CATHODE).
   B) ADD D63 (DIODE, INTERNATIONAL RECTIFIER #11DQ03, RTS #1601-0001-00) BETWEEN J53 PIN 10 (ANODE) AND J223 PIN 9 (CATHODE).
   C) ADD A JUMPER WIRE BETWEEN J53 PIN 10 AND J54 PIN 9.

2) IN UNITS SHIPPED PRIOR TO 10-29-84 ONLY, INSTALL NEW FIRMWARE (V.4.2 AND UP) IN THE MEMORY PROM POSITIONS U12, U13, AND U14 OF THE CPU BOARD (AW3000-5). THE CPU BOARD CAN BE ACCESSED BY REMOVING THE 802 TOP COVER.

NOTES:

1. SOLDER JUMPER WIRES TO THE CATHODE LEADS OF BOTH D63 AND D64. INSULATE EACH DIODE, AND ITS JUMPER WIRE SOLDER CONNECTION, WITH SHRINK TUBING.

2. JUMPER WIRES SHOULD BE #24 OR #22 AWG.



DETAIL: VCP-6A UPDATES TO THE 802 MOTHER BOARD, AW 3000-1 (CIRCUIT SIDE SHOWN)

Fig 3-6-2 / pg. 55
2@

Fig 3-9-6 / pg 92
1@

MODEL 802
ASSEMBLY DIAGRAM
MOTHERBOARD
AS 3000-1
-1

Fig 3-4-6 / pg 42
1@

Fig, 3-10-1 / pg 94
1@

RTS Systems, Inc. Burbank, CA 91506
FSCM:60572 TM3510
Second Edition, February 1988

MODEL 802
ASSEMBLY DIAGRAM
CPU BOARD
AS 3000-5
-2

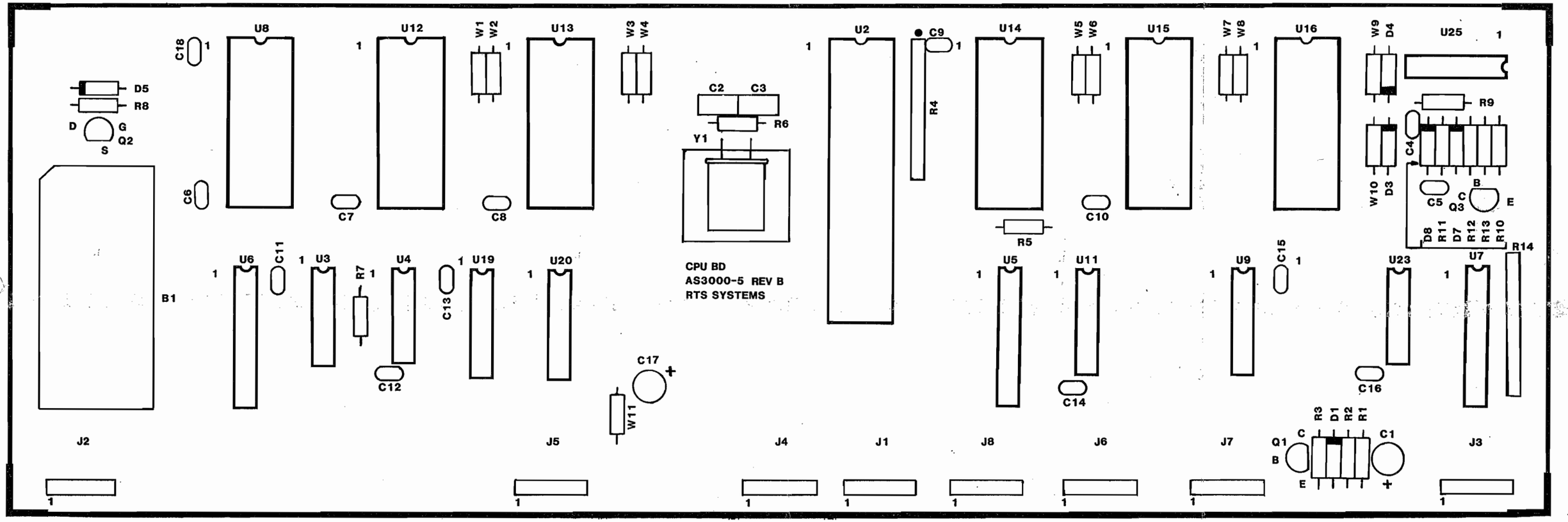


Fig. 3-10.1
10

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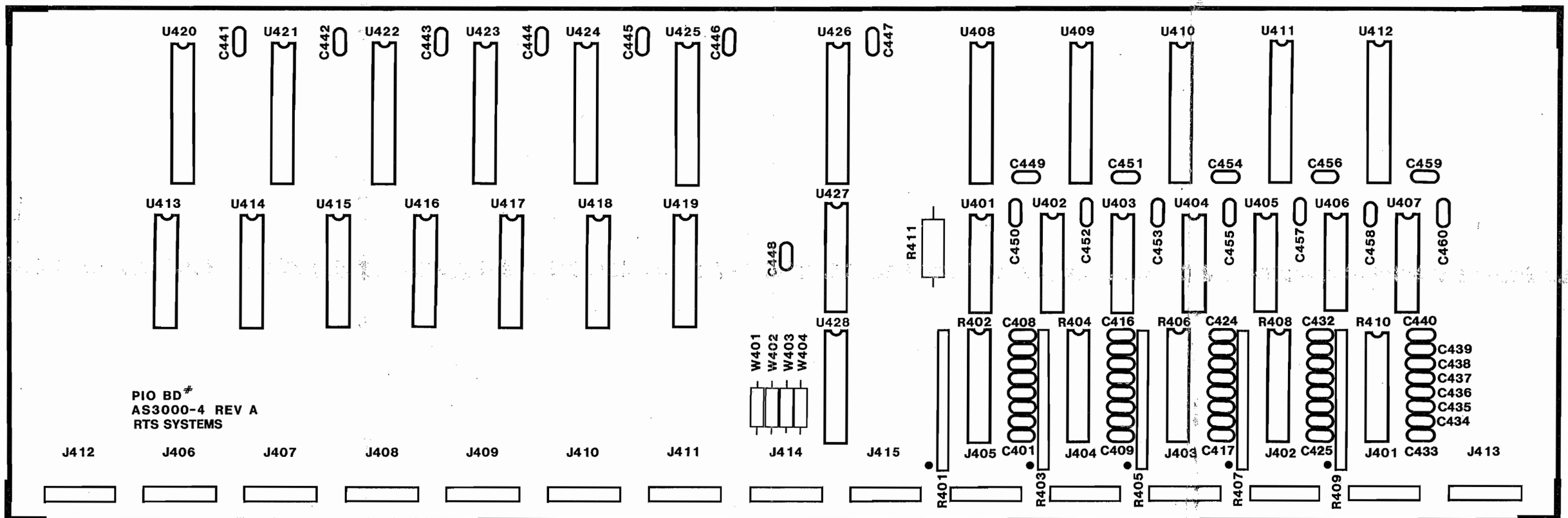
FSCM:60572 TM3510
Second Edition, February 1988

MODEL 802
ASSEMBLY DIAGRAM
PIO BOARD
AS 3000-4
-3



NOTES; UNLESS OTHERWISE SPECIFIED

1. FOR PIO #1 BOARD: INSTALL W401.
2. " " #2 " : " W402.
   ; CHANGE R406 TO 1K PACKAGE.
3. " " #3 " : " W403.
4. INSTALL ONLY ONE JUMPER PER BOARD ("W401 THRU W404")

7y. 3-10-1
1 @

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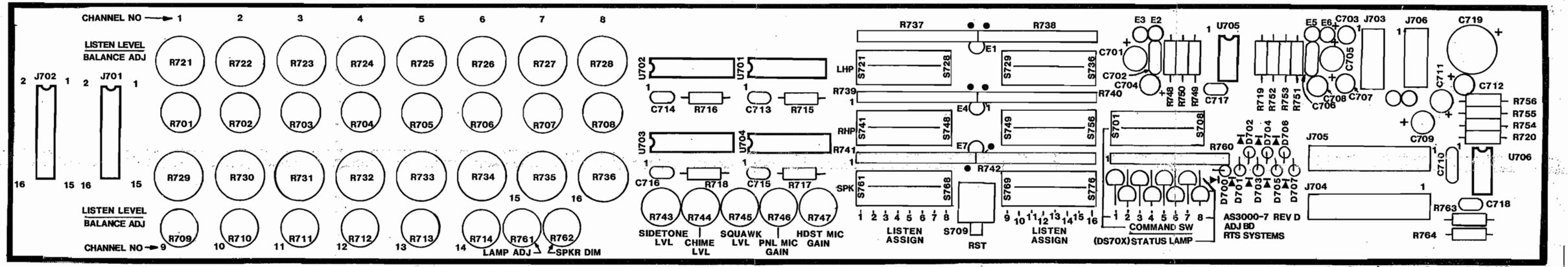
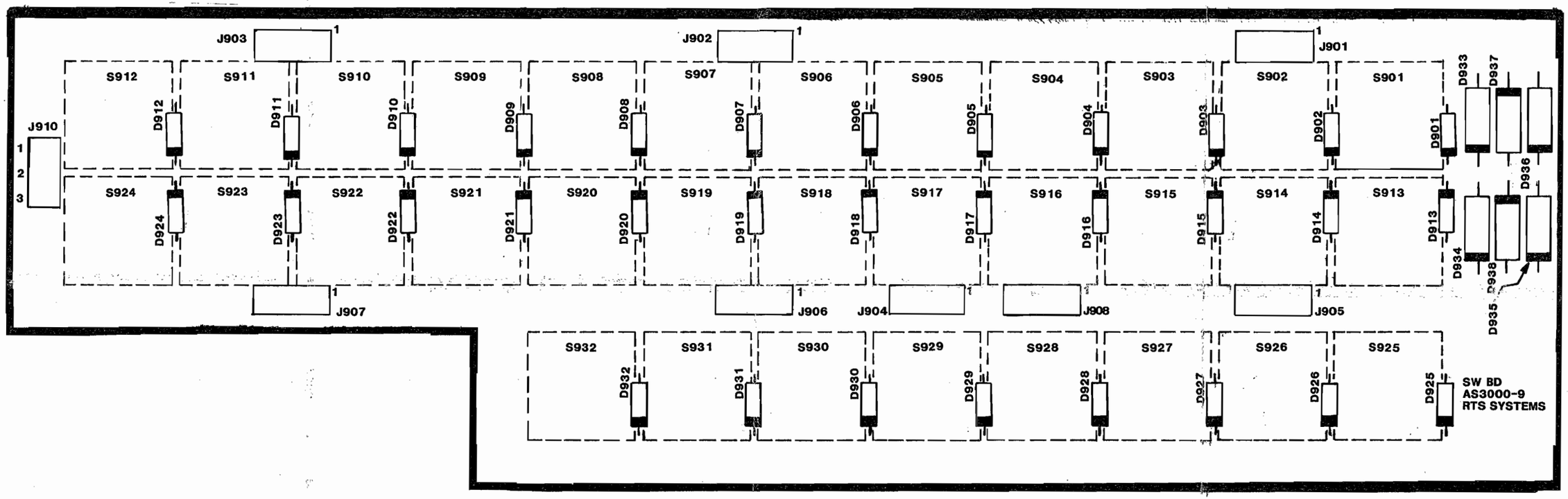


MODEL 802
ASSEMBLY DIAGRAM
ADJUSTMENT BOARD

AS3000-7

-4

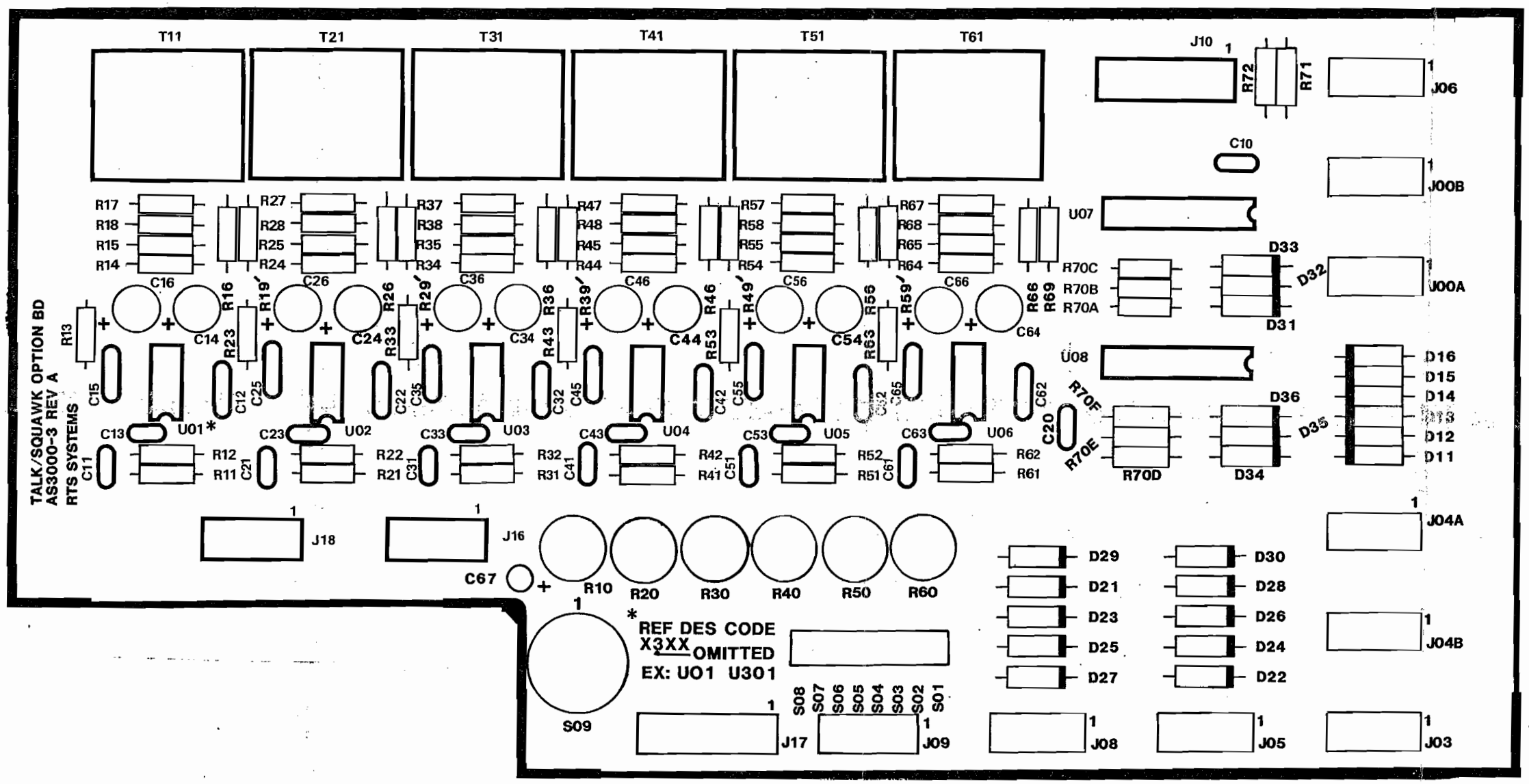
RTS Systems, Inc. Burbank, CA 91506
FSCM:60572 TM3510
Second Edition, February 1988



~~B02 00~~
MODEL B02
ASSEMBLY DIAGRAM
SWITCH BOARD
AS 3000-9
-5

RTS Systems, Inc. Burbank, CA 91506
FSCM:60572 TM3510
Second Edition, February 1988

802 OPTIONAL
ASSEMBLY DIAGRAM
TALK/SQUAWK BOARD
AS3000-3 -6

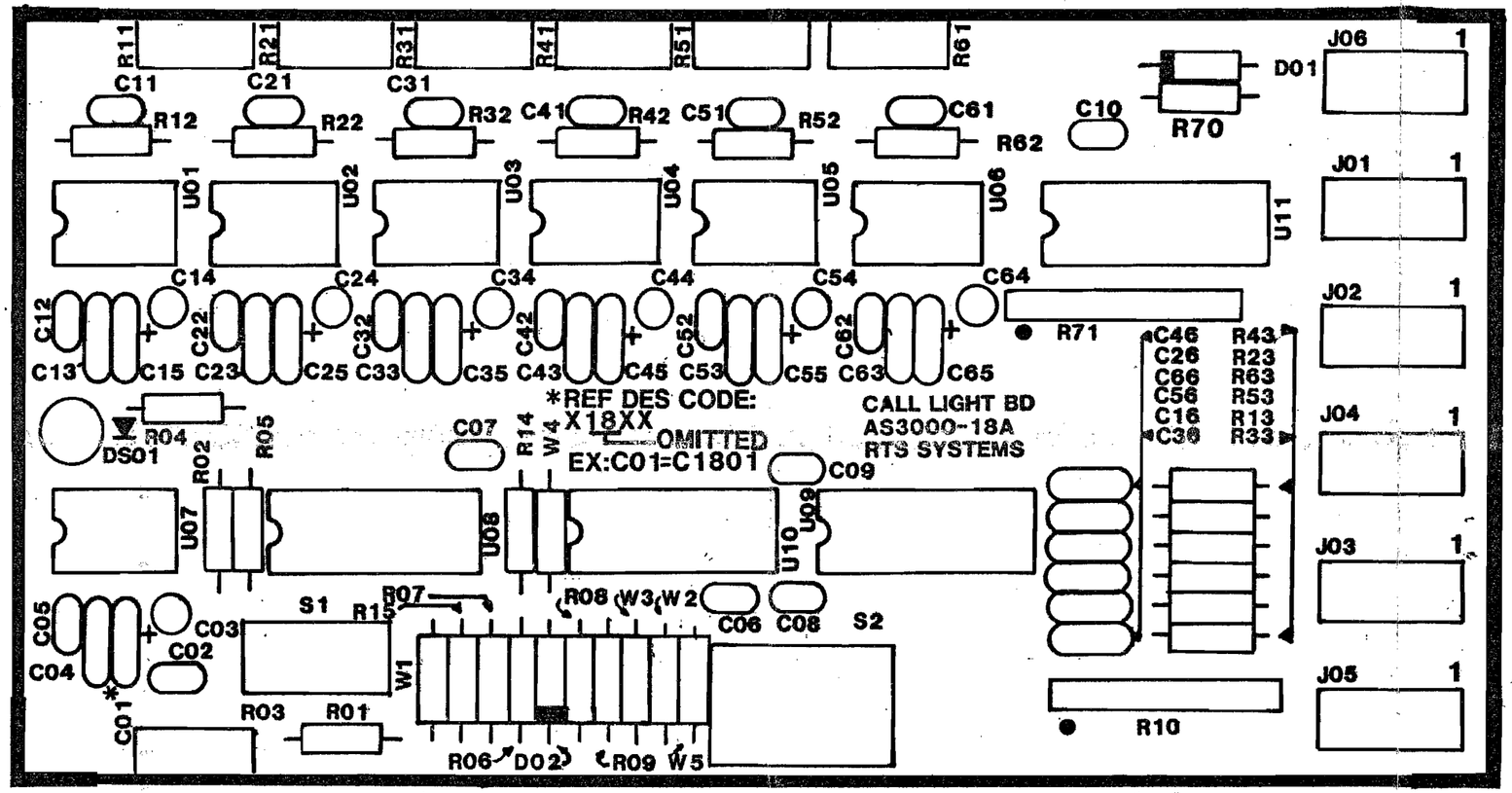


74 3-6-2. Pg 55
2@

REV B AND C
ALSO APPLICABLE

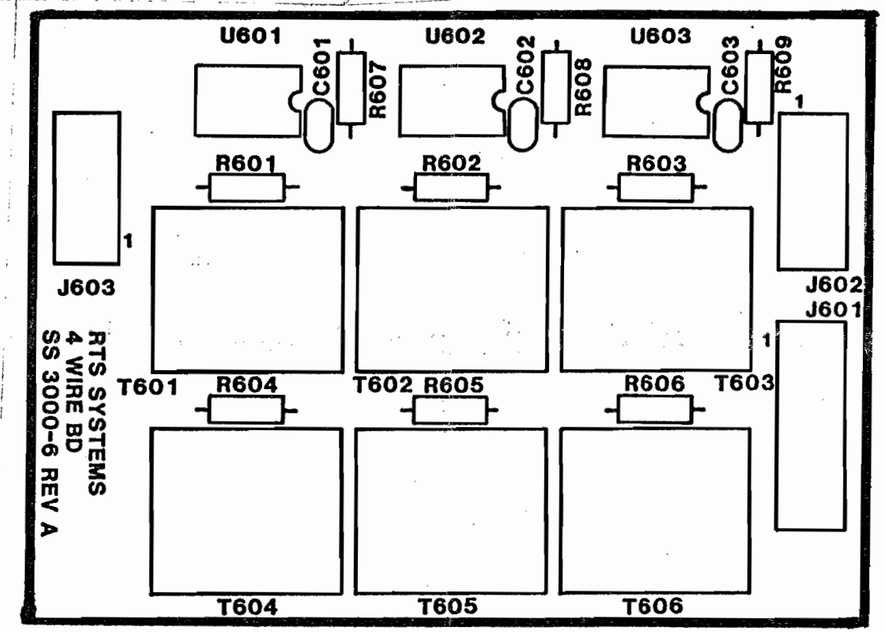
RTS Systems, Inc. Burbank, CA 91506
FSCM:60572 TM3510
Second Edition, February 1988

802 OPTIONAL
ASSEMBLY DIAGRAM
4 WIRE BOARD
SECOND GENERATION
AS 3000-6 -1

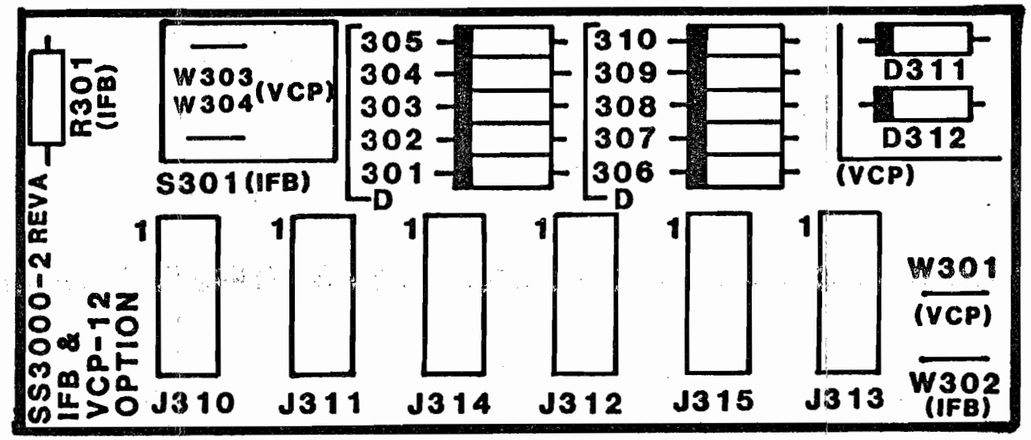


RTS Systems, Inc. Burbank, CA 91506
FSCM:60572 TM3510
Second Edition, February 1988

802 OPTIONAL
ASSEMBLY DIAGRAM
CALL LIGHT
AS 3000-18 -8

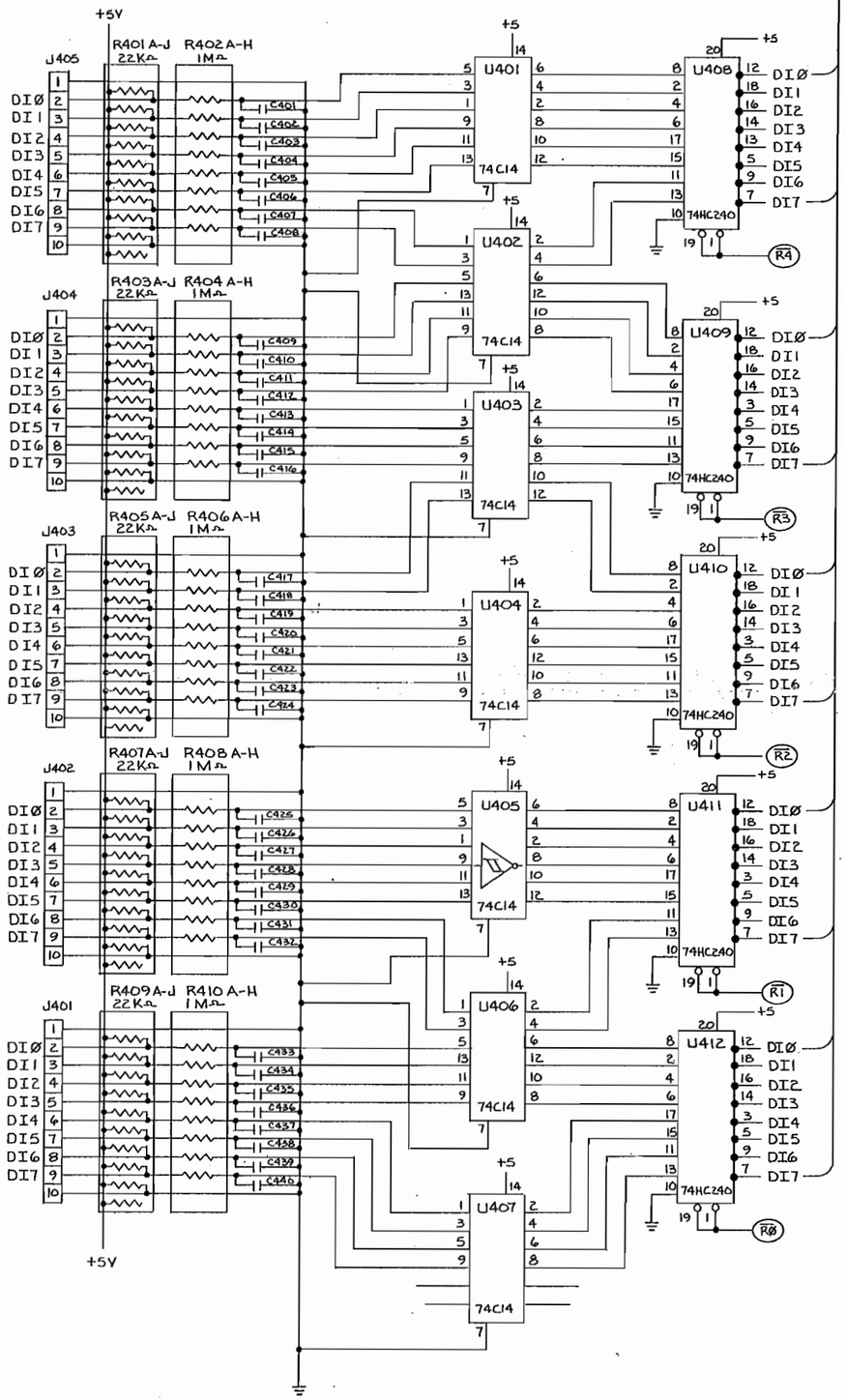


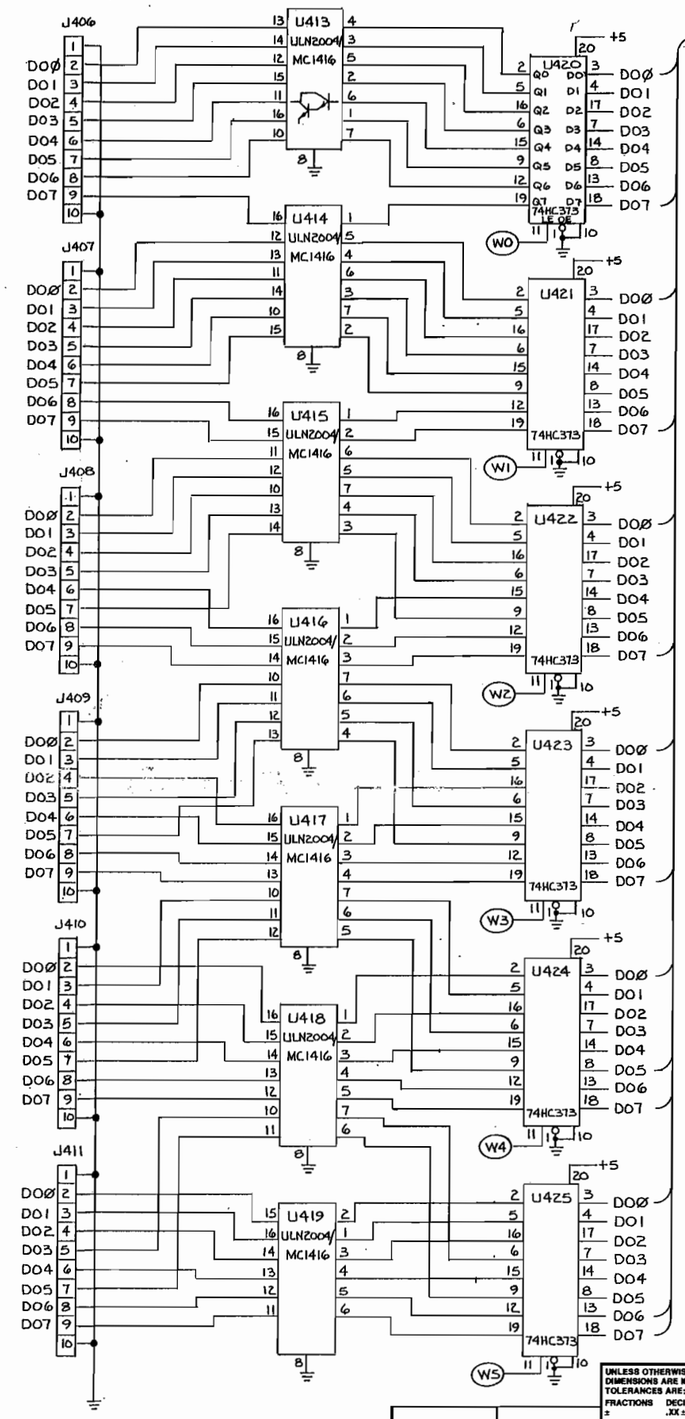
RTS Systems, Inc. Burbank, CA 91506
FSCM:60572 TM3510
Second Edition, February 1988

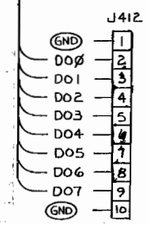


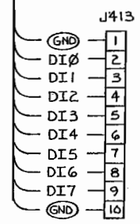
802 OPTIONAL
IFB/VCP BOARD
SECOND GENERATION
ASSEMBLY DIAGRAM
AS3000-2 -9

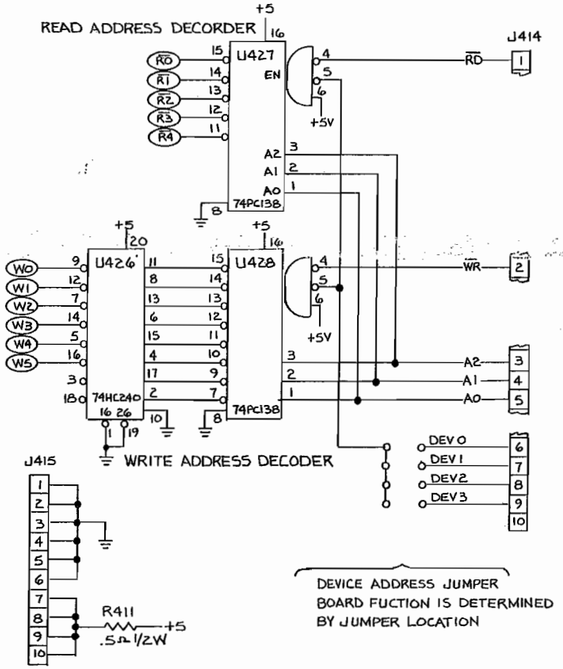
REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	REVISED AND REDRAWN	9-24-82	
	B	UPDATED	10-21-82	
	C	REVISED PER ECO # 1114	10-13-83	
	D	CHANGED NOTE 1 WAS -C469 ECO # 1907	5-1-87	











2. C401 - C440 ARE .01μF/50V MONO. CERAMIC CAPACITORS FOR DEBOUNCING.
1. C441 - C460 ARE .1μF/50V MONO. CERAMIC CAPACITORS USED TO BYPASS EACH I.C.

NOTES: (UNLESS OTHERWISE SPECIFIED)

USED ON THIS PAGE: C401-C440, J401-J415, R401-R411, U401-U428

AS3000-4	802
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± DECIMALS .XX ± .XXX ± ANGLES ±
MATERIAL
FINISH
DO NOT SCALE DRAWING

CONTRACT NO. SERIES 800

APPROVALS	DATE
DRAWN S. DUEBBER	9-24-82
CHECKED	
ISSUED	

RTS SYSTEMS BURBANK, CALIFORNIA

SCHEMATIC DIAGRAM
MASTER STATION MODEL 802

SIZE D | FSCM NO. 00572 | DWG. NO. SD 3000 | REV. D
SCALE | SHEET

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	UPDATED	12-9-82	
	B	REVISED PER ECO# 2391	1-23-89	

SHEET 4

PANEL MIC

DYN HDST MIC

CARBON MIC HDST

DYN HDST CONN. XLR-5

REMOTE HEADSET -MIC-

BIAS NETWORK

BIAS NETWORK

BIAS NETWORK

40dB PAD

LIMITER

LIMITER

MIC PRE GAIN SET

MIC PRE GAIN SET

PANEL MIC ENABLE

HEADSET MIC ENABLE

USM DRIVER + SUM AMP

MICROPHONE OUTPUTS

50-10 Ω

SM USM SM USM

SM DRIVER

SHEET 5

DYN HDST CONN. XLR-5-31

LEFT HEADPHONE

RIGHT HEADPHONE

REMOTE HDST -HEAD-PHONES-

HDST SENSE

LEFT HP AMP

RIGHT HP AMP

LO PASS FILTER

LO PASS FILTER

SUM AMP

SUM AMP

SUM AMP

SUM AMP

SUM AMP

SUM AMP

SUM AMP

SQUAWK

MASTER VOLUME

SPEAKER

SPEAKER AMP

INT TEXT

EXT ONLY

EXT SPKR

SPKR DIM ATTNR

SPKR ON/OFF SW

AUX POT DESIGNATE SWITCHES

AUX VOL

AUX POT SOURCE SELECT

CHIME/ CALL TONE

⚠1

SHEET 7

LISTEN SWITCH SUM AMP

12

SHEET 6

SHEET 18

6 CHANNEL CALL LIGHT TRANSMIT ASSY

6 CHANNEL CALL LIGHT RECEIVE ASSY

LISTEN MODULES

LISTEN CHANNEL SELECT

LISTEN LEVEL ADJ

2W

4W

1/6

TALK MODULES

SHEET 8, 1/6

DRIVER

BILAT. CURRENT SOURCE

TALK ENABLE

50 Ω

J101

6 CHANNELS 2W/4W OUTPUTS

SHEET 9

J101

6 CHANNELS 2W/4W OUTPUTS

SHEET 16

POWER SUPPLY

SHEET 6

6 CHANNEL 4 WIRE LISTEN BALANCE/ UNBALANCE TRANSFORMER ASSEMBLY

12 4 WIRE INPUTS CH 1-6

6 CHANNEL 4 WIRE LISTEN BALANCE/ UNBALANCE TRANSFORMER ASSEMBLY

12 4 WIRE INPUTS CH 7-12

2 CHANNEL AUX PGM LISTEN BAL./UNBAL. TRANSFORMER ASSEMBLY

PGM INPUTS

6

SHEET 18

6 CHANNEL CALL LIGHT TRANSMIT ASS'Y

6 CHANNEL CALL LIGHT RECEIVE ASS'Y

SHEET 8

SHEET 8

1 OF 2 AUX BILAT. OUTPUTS

SHEET 11

SWITCHBOARD

80

SHEET 12

PIO #1

SHEET 13

PIO #2

SHEET 14

PIO #3

SHEET 15

CPU

⚠1 CHIME CIRCUITRY IS ON THE CPU IN THE 802A.

NOTES:

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± DECIMALS .XX ± .XXX ± ANGLES ±
MATERIAL
FINISH
DO NOT SCALE DRAWING

CONTRACT NO. SERIES 800

APPROVALS	DATE
DRAWN R. PEKSON	7-26-84
CHECKED	
ISSUED	

RTS SYSTEMS BURBANK, CALIFORNIA

SCHEMATIC DIAGRAM
MASTER STATION, MODELS 802 & 802A
ANALOG BLOCK

SIZE	FSCM NO.	DWG. NO.	REV.
D	60572	SD3000	B
SCALE		SHEET 1 OF 26	

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	REVISED & REDRAWN	10-2-82	
	B	UPDATED	12-9-82	SLH
	C	PER ECO #2391	2-10-89	

CRYSTAL 4MHz
CPU
CLK
2MHz
DIVIDER U19,U20
TIMING SIGNALS
J5
TO PIO #2 J403
2MHz CLOCK TO CHIME
DEVICE SELECT
J6
TO RS 232 P.C.B.
J7
EXT RESET INPUT
RESET DRIVER Q1, D1
RST IN
SYSRST
DV7
ADDRESS DECODER U9,U10
A
EN
IO/M
STAND-BY BATTERY
BATTERY CONTROL Q2, D3-D5
NSC 800
RAM U16
EN
D
WR
DEVICE SELECT
BCLK
J4
DEV 0-3
A0-A3
BWR
BRD
A (8-15)
U5
A(8-15)
HIGH ORDER ADDRESS BUFFER
MEM SELECT/U11
ROM U12, U13, U14, U15
DO
BUS RECEIVER U7
EN
J2
INTERNAL ADDRESS BUS
INTERNAL ADDRESS/DATA BUS
ADDRESS LATCH U8
A(0-7)
EN
ALE
BUS DRIVER U6
J3
AD (0-7)
WR
WRITE
RD
READ
U2
+5, DIGITAL GND
MICROPROCESSOR/CPU (SHEET 15)

J414
J413
J412
J415
ADDRESS DECODER
READ/WRITE DECODER U26-U28
J401 J402 J403 J404 J405
DEBOUNCE NETWORK
SCHMIDT TRIGGER
U7,6 U6,5 U5,4 U3,4 U2,3 U1,2
U12 U11 U10 U9 U8
BUS DRIVER
0 1 2 3 4
INTERNAL DATA INPUT BUS
INTERNAL DATA OUTPUT BUS
0 1 2 3 4 5
U20 U21 U22 U23 U24 U25
LATCH
U13,14 U14,15 U15,16 U16,17 U17,18 U18,19
OUTPUT DRIVER
PIO #1 (SHEET 12)
J406 J407 J408 J409 J410 J411

PIO #2 (SHEET 13)
PIO #3 (SHEET 14)
CHIME OPTION (SHEET 17)

FROM PIO#1, J406-J409
TO PIO#1, J401-J404
LAMPS
SWITCHES
SWITCHBOARD (SHEET 11)

EXTERNAL ADDRESS BUS
EXTERNAL DATA INPUT BUS
EXTERNAL DATA OUTPUT BUS
POWER BUS

1. SEE PIO LISTING FOR ALL PIO INPUT/OUTPUT CONNECTIONS.

NOTES: (UNLESS OTHERWISE SPECIFIED)

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± DECIMALS .XX ± .XXX ± ANGLES ±
MATERIAL
FINISH
DO NOT SCALE DRAWING

CONTRACT NO. SERIES 800

APPROVALS	DATE
DRAWN S. DUEBBER	10/1/82
CHECKED	
ISSUED	

RTS SYSTEMS BURBANK, CALIFORNIA

SCHEMATIC DIAGRAM
DIGITAL BLOCK MODEL 802, 802A
MASTER STATION

SIZE D | FSCM NO. 60572 | DWG. NO. SD 3000 | REV. C
SCALE | SHEET 3 OF 26

Arch - Eng. Supply Co. 357-8691

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	REVISED	9-27-82	
	B	REVISED	10-1-82	
	C	UPDATED	10-28-82	
	D	C14 WAS 10/10	11-12-82	
	E	CATHODE DIG WAS CONNECTED TO C8(-). CATHODE D17 WAS CONNECTED TO C18(-).	12-28-82	
	F	REVISED PER ECO # 958	5-16-83	
	G	R43 WAS 220K PER ECO 990	7-7-83	
	H	REV PER ECO 991	7-12-83	
	J	REVISED PER ECO 1548	11-18-85	
	K	ADDED INTERSHEET REFERENCES FOR CLARITY, SEE ECO # 1632 FOR COMPLETE LIST OF ADDITIONS / CHANGES.	7-10-86	
	L	PER ECO # 2372	1-3-89	
	M	PER ECO # 2391	1-10-89	

PANEL MIC GAIN (ADJ. PANEL) SHEET 7 ZONE C4 — P6 J6 BERG — (R746) TRIM 20K — R14 10M — R13 5.1M — C11 .1/50 — D1 IN6263 — D2 IN6263 — R11 2.2K — C10 .1/50 — PNL MIC LIMITER THRESHOLD — R10 100K TRIM

Q1 J305 — R12 68K — R2 1K — R1 2.2K — R3 1K [5] — R5 22K — C5 100/10 — C8 47/10 — C9 22pF — R8 470K — D3 IN914 — D16 IN6263 — U1 5532 — C7 .1/50 — C6 .01/50 MONO — R9 22 — +12

MOLEX P1 J1 — USED FOR OPTIONS — PANEL MIC (ELECTRET) — RED — WHT — SHIELD — C1 47/10 — C3 [5] 2.2/16 — C2 47/10 — C4 47/10 — R4 470 — R6 220 — R7 470K — E1 E2 E3 E4 E5 E6 — TB10 LO HI V+ — REMOTE PANEL MIC — R20 22K — C99 .1/200 — E11 E30

J2-3 — PME — TO J410 PIO #1 SHEET 12 ZONE B5 — R15A 22K — +12

U2 4053 — +6V DC — +6 — 0 1

4053 — VDD 16 — VSS 8 — VEE 7 — INH 6 — A 14 — B 15 — C 4 — 11 A — 10 B — 9 C — 13 12 1 2 3 5

C26 .1/50 — R16 100K — R17 100K — R18 100K — C27 .1/50 — U1 — C29 .1/50 — U2 4053

C31 10pF — R38 100K — R39 100K — C30 .1/50 — U5 — R19 100K — C28 33pF

E13 E16 — R40 220 — C32 47/10 — E12 E18 — P — S102 MODE USW MIC — SW MIC — S101 LEVEL LINE 0dB — -50 MIC — R120 3.3K — R121 10 — T1 LM9003 — TBI3 HI LO GND — MIC OUTPUT #1

HDST MIC GAIN (ADJ. PANEL) SHEET 7 ZONE C4 — P6 J6 — (R747) TRIM 20K — R34 10M — R23 5.1M — C21 .1/50 — D4 IN6263 — D5 IN6263 — R31 22K — C20 .1/50 — HDST MIC LIMITER THRESHOLD — R30 100K TRIM

Q2 J305 — R32 68K — R22 1K — R23 [6] 1K — R25 22K — C15 100/10 — C18 47/10 — C19 22pF — R28 470K — D6 IN914 — D17 IN6263 — U3 5532 — C16 .01/50 MONO — R29 22 — +12

REFERENCE — J100 — HDST DYN MIC — P1 J10 — XLR-5-31 (STD) XLR-6-31 (OPT.) — C13 10/10 — C12 47/10 — C14 47/10 — R24 470 — R26 220 — R27 470K — E7 E8 E9 E10 P — TB9 LO HI — REMOTE HEADSET MIC

U2 4053 — +6 SOURCE — C22 470/10 — C23 1/35 TANT — R35 100Ω — U4 78L06 — OUT IN — C24 1/35 TANT — +12

J2-4 — HME — TO J410 PIO #1 SHEET 12 ZONE B5 — R15C 22K — +12

BOTTOM VIEW J305 — G S D

BOTTOM VIEW 78L06 — IN GND OUT

U2 4053 — C39 .1/50

C33 .1/50 — R41 100K — C34 33pF — R42 200K — U3 — +6V

J2-2 — MSE — TO J410 PIO #1 SHEET 12 ZONE B5 — R15B 22K — +12

R43 220 — C35 47/10 — E14 E19 — P — S104 MODE USW MIC — SW MIC — S103 LEVEL LINE 0dB — -50 MIC — R122 3.3K — R123 10 — T2 — TBI4 HI LO GND — MIC OUTPUT #2

E15 E17 — P — SHEET 17 TALK ZONE C1 CHIME

RBX — U154-4 — C37 .1/50 [7] — R44A 100K — R44B 100K — C36 10pF — R45 100K — U5 5532 — C38 .1/50 — R47 22Ω — +12

R46 47K — +6V

TSD — SHEET 8 ZONE D8

TO TALK SELECT SWITCHES TO: U210 -12 -2 -5 — U211 -12 -2 -5

TALK OPTION BOARD — SQUAWK OPTION BOARD

CARB MIC HDST JACK — P1 J11 — T R S — C25 .03/50 — R36 680 — C91 .1/50 — R37 68K — D7 IN914 — SHEET 5 ZONE D7 FROM LEFT HEADPHONE AMPLIFIER

USED ON THIS PAGE: C1-C39, C91, C99, D1-D7, D16, D17, J1, J2, J6, J10, J11, J100, R1-R20, R22-R47, R120-R123, R746, R747, U1-U5, T1, T2, Q1, Q2, TB9, TBI0, TBI3, TBI4, E1-E18, E30

NOT USED ON THIS PAGE: C40-C90, D8-D15, R21, R48-R119

4. ⊣S⊢ = SCHOTTKY DIODES, VF = 0.1 TO 0.3V.
3. CUTTABLE TRACES (USED FOR OPTIONS) ARE SHOWN: ##.
2. CAP. VALUES ARE SHOWN: MICROFARADS/VOLTS.
1. ALL RESISTORS ARE CARBON FILM, 1/4 WATT, ±5%.

NOTES: UNLESS OTHERWISE SPECIFIED

[7] OMIT R44A WHEN CHIME OPTION IS NOT USED.
[6] USE ON TYPE B HDST MIC ELECTRET OPTION ONLY.
[5] FOR DYNAMIC PANEL MIC; REMOVE R3, CHANGE VALUE OF C3 TO 10/10

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS ± DECIMALS .XX ± .XXX ± ANGLES ±
MATERIAL
FINISH
DO NOT SCALE DRAWING

CONTRACT NO.

APPROVALS	DATE
DRAWN R. PEKSON	7-30-84
CHECKED	
ISSUED	

RTS SYSTEMS BURBANK, CALIFORNIA

SCHEMATIC DIAGRAM
MASTER STATION, MODEL 802, 802A, MIC PRE

SIZE D — FSCM NO. 60572 — DWG. NO. SD3000 — REV. M
SCALE — SHEET 4 OF 26

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	REVISED	9-27-82	
	B	REVISED	10-2-82	
	C	UPDATED	10-28-82	
	D	UPDATED	11-12-82	
	E	REV PER ECO # 790	2-14-83	
	F	REV PER ECO # 956 & 957	4-28-83	
	G	REV PER ECO # 954 & 955	5-16-83	
	H	REV PER ECO # 1017	6-14-83	
	J	REV PER ECO # 1130	11-9-80	
	K	ADDED NOTE (8)	12-2-83	
	L	REVISED PER ECO 1284	9-7-84	
	M	REVISED PER ECO 1321	11-12-84	
	N	REVISED PER ECO 1388	1-15-84	
	P	REVISED PER ECO 1408	1-21-85	
	R	ADDED INTERSHEET REFERENCES FOR CLARITY. SEE ECO # 1632 FOR COMPLETE LIST OF ADDITIONS / CHANGES.	7-10-86	
	S	C66,67 WERE .2/50 MONO. REF ECO 1653 MM	8-8-86	
	T	ADDED R108 PER ECO 1938 GM	9-30-87	
	U	R153 DESTINATION, R65 WAS 22K ECO # 2117	4-1-88	
	V	ADDED C40 PER ECO # 2167	4-1-88	
	W	PER ECO # 2372	1-3-89	
	X	PER ECO # 2391	2-10-89	

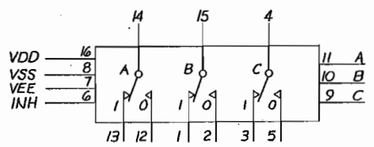
(10) THESE COMPONENTS ARE PART OF AN ALTERNATE ISO CIRCUIT, USED ONLY WHEN CHANNEL 13 LISTEN IS USED IN 4-WIRE MODE.

(9) OPTIONAL PARTS C47, C48, R58, R59 MAY BE ADDED TO ADJUST HEADPHONE AMPLIFIER GAIN.

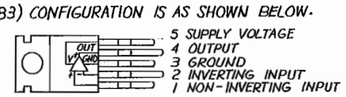
(8) THESE PARTS OPTIONAL. (D8, D9)

[7] LIGHT DEPENDENT RESISTOR PN CLM6000 OR VTL5C2.

6. 4053 CONFIGURATION IS AS SHOWN BELOW.



5. U9, U10 (LM383) CONFIGURATION IS AS SHOWN BELOW.



4. —▷— = SCHOTTKY DIODE, VF = 0.1 TO 0.3V.
3. CUTTABLE TRACES (USED FOR OPTIONS) ARE SHOWN: ///
2. CAP. VALUES ARE SHOWN: MICROFARADS/VOLTS.
1. ALL RESISTORS ARE CARBON FILM, 1/4 WATT, ± 5%.

NOTES: (UNLESS OTHERWISE SPECIFIED)

USED ON THIS PAGE: C40-C91, D8, D9, J2-J5, J7, J8, J11, J13, J50, J100, J223, Q3, Q4, R48-R104, R109, R292, R153, T3, T4, TB9, TB15, E20-E23

NOT USED ON THIS PAGE: R100, R105-R108

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS ± DECIMALS .XX ± .XXX ± ANGLES ±	CONTRACT NO.
		MATERIAL	APPROVALS / DATE
		FINISH	DRAWN R. PEKSON 8-2-84
NEXT ASSY	USED ON		CHECKED
APPLICATION		DO NOT SCALE DRAWING	ISSUED

RTS SYSTEMS BURBANK, CALIFORNIA

SCHEMATIC DIAGRAM
MOTHERBOARD HEADPHONE AND SPEAKER AMP
MASTER STATION, MODEL 802, 802A

SIZE D | FSCM NO. 60572 | DWG. NO. SD3000 | REV. X

SCALE | SHEET 5 OF 26

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	K	REVISED PER ECO 1581	1-25-86	
	L	ADDED INTERSHEET REFERENCES FOR CLARITY. SEE ECO # 1632. FOR COMPLETE LIST OF ADDITIONS / CHANGES.	7-10-86	
	M	PER ECO # 2372	1-3-89	
	N	PER ECO # 2391	2-10-89	

2W/4W DIP SWITCH ARRAY OPTION S601A

ELECTRONIC LISTEN SWITCHES

TO J602 4 WIRE OPTION P.C.B. (SHEET 22)

TO J602 4 WIRE OPTION P.C.B. (SHEET 22)

J611 J612 J617 J618 J619 J615 J616

ALB1 ALF1 ALB2 ALF2 ALB3 ALF3 ALB4 ALF4 ALB5 ALF5 ALB6 ALF6

ALB7 ALF7 ALB8 ALF8 ALB9 ALF9 ALB10 ALF10 ALB11 ALF11 ALB12 ALF12

ALB13 ALF13 ALB14 ALF14

R617A R617C R617E R617F R617G R618A R618C R618E R618F R618G R619A R619C

R619E R619F R619G R620A R620C R620E R620F R620G R621A R621C R621E R621F

R616 R622A R622C R622E

XLB1 XLF1 XLB2 XLF2 XLB3 XLF3 XLB4 XLF4 XLB5 XLF5 XLB6 XLF6

XLB7 XLF7 XLB8 XLF8 XLB9 XLF9 XLB10 XLF10 XLB11 XLF11 XLB12 XLF12

XLB13 XLF13 XLB14 XLF14 XLB15 XLF15 XLB16 XLF16

U611 U612 U613 U614 U615 U616 U617 U618 U619 U620

TO J701 ADJ.BD. SHEET 7 ZONE D8

J616 TO J702 ADJ.BD. SHEET 7 ZONE B8

FROM 150 BILAT 15, (SHEET 8) ZONE B2

SHEET 19 ZONE B3

T613 T614 R614 4.7K R613 4.7K SHEET 8

PGM 1 (REAR PANEL) TB11

REFERENCE SHEET 19 ZONE B4

T615 T616 R615 4.7K R616 4.7K

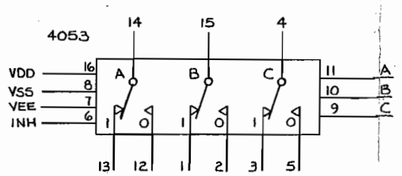
PGM 1 LO PGM 2 LO HI

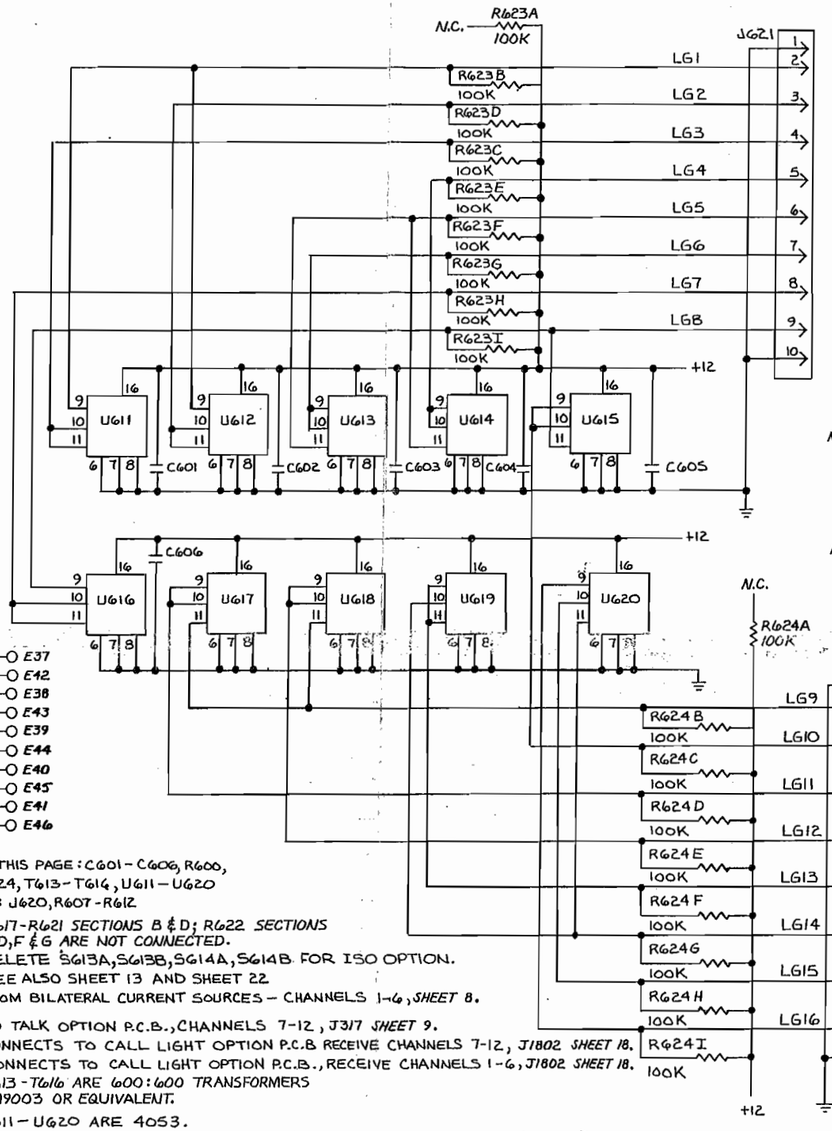
AUX GAIN (FRONT PANEL) R600A 50K R600B 50K

REAR PANEL TB12

TO J101 LINE CONN. (SHT 20)

4053





SHEET 19 ZONE B3

J614

E37 E42 E38 E43 E39 E44 E40 E45 E41 E46

USED ON THIS PAGE: C601 - C606, R600, R613 - R624, T613 - T614, U611 - U620
NOT USED: J620, R607 - R612

12. R617 - R621 SECTIONS B & D; R622 SECTIONS B, D, F & G ARE NOT CONNECTED.
11. DELETE S613A, S613B, S614A, S614B FOR ISO OPTION.
10. SEE ALSO SHEET 13 AND SHEET 22.
9. FROM BILATERAL CURRENT SOURCES - CHANNELS 1-6, SHEET 8.
8. TO TALK OPTION P.C.B., CHANNELS 7-12, J317 SHEET 9.
7. CONNECTS TO CALL LIGHT OPTION P.C.B RECEIVE CHANNELS 7-12, J1802 SHEET 18.
6. CONNECTS TO CALL LIGHT OPTION P.C.B., RECEIVE CHANNELS 1-6, J1802 SHEET 18.
5. T613 - T616 ARE 600:600 TRANSFORMERS LM9003 OR EQUIVALENT.
4. U611 - U620 ARE 4053.
3. R617 - R622 ARE 100K SIPS. (8 POS); R623, R624 ARE 100K SIPS (10 POS.)
2. C601 - C606 ARE 0.1/50V MONO CERAMIC BYPASS CAPACITORS.
1. ALL RESISTORS ARE 1/4 W, 5% CARBON FILM.

NOTES: UNLESS OTHERWISE SPECIFIED

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS ± DECIMALS .XX ± .XXX ± ANGLES ±	CONTRACT NO. SERIES 800	RTS SYSTEMS BURBANK, CALIFORNIA	
			APPROVALS / DATE	SCHEMATIC DIAGRAM MASTER STATION MODEL 802, 802A, (LISTEN SWITCHING)	
		MATERIAL	DRAWN R. NEILSON 1-23-86		
		FINISH	CHECKED		
NEXT ASSY	USED ON		ISSUED	SIZE D FSCM NO 60572 DWG. NO. SD 3000 REV. N	
APPLICATION		DO NOT SCALE DRAWING		SCALE	SHEET 6 OF 26

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	C	REVISED	10-28-82	
	D	UPDATED	11-23-82	
	E	J706 WAS A MOLEX CONN; ADDED J706 PIN14, J701 PINS 10,7,9,8 WERE 7,10,8,9	12-29-82	
	F	REVISED PER ECO # 832	4-6-83	
	G	REVISED PER ECO # 939	4-11-83	
	H	REV PER ECO # 956 & 957	4-28-83	
	J	REV PER ECO # 955	5-16-83	
	K	REV PER ECO # 997	6-13-83	
	L	REVISED PER ECO 1474	7-9-85	
	M	ADDED INTERSHEET REFERENCES FOR CLARITY. SEE ECO # 1632 FOR COMPLETE LIST OF ADDITIONS / CHANGES.	7-10-86	
	N	CHNG DIP SW FUNCTION CALLOUTS R8	9/12/86	
	P	PER ECO # 2391	2-10-89	

TO J615 MOTHERBOARD SHEET 6 ZONE D4

2/4 WIRE INPUTS J701

XLB 1 / XLF 1 — R701 10K — R721 20K — U701 — S721 R737I — S741 R739I — S761 R741I
XLB 2 / XLF 2 — R702 10K — R722 20K — U701 — S722 R737H — S742 R739H — S762 R741H
XLB 3 / XLF 3 — R703 10K — R723 20K — U702 — S723 R737G — S743 R739G — S763 R741G
XLB 4 / XLF 4 — R704 10K — R724 20K — U702 — S724 R737F — S744 R739F — S764 R741F
XLB 5 / XLF 5 — R705 10K — R725 20K — U702 — S725 R737E — S745 R739E — S765 R741E
XLB 6 / XLF 6 — R706 10K — R726 20K — U702 — S726 R737D — S746 R739D — S766 R741D
XLB 7 / XLF 7 — R707 10K — R727 20K — U701 — S727 R737C — S747 R739C — S767 R741C
XLB 8 / XLF 8 — R708 10K — R728 20K — U701 — S728 R737B — S748 R739B — S768 R741B
XLB 9 / XLF 9 — R709 10K — R729 20K — U703 — S729 R738B — S749 R740B — S769 R742B
XLB 10 / XLF 10 — R710 10K — R730 20K — U703 — S730 R738C — S750 R740C — S770 R742C
XLB 11 / XLF 11 — R711 10K — R731 20K — U704 — S731 R738D — S751 R740D — S771 R742D
XLB 12 / XLF 12 — R712 10K — R732 20K — U704 — S732 R738E — S752 R740E — S772 R742E
XLB 13 / XLF 13 — R713 10K — R733 20K — U704 — S733 R738F — S753 R740F — S773 R742F
XLB 14 / XLF 14 — R714 10K — R734 20K — U704 — S734 R738G — S754 R740G — S774 R742G

+6 — BALANCE SETS — LEVEL SETS — BUFFER AMPS — HP AMP/SPK AMP DESIGNATE DIP SWITCHES — LEFT BUS — RIGHT BUS

J702 — TO J616 MOTHER BOARD SHEET 6 ZONE B4 — TO J616 MOTHERBOARD

AUX INPUTS
4X1H — R735 20K — U703 — S735 R738H — S755 R740H — S775 R742H
4X1L — +6
4X2H — R736 20K — U703 — S736 R738I — S756 R740I — S776 R742I
4X2L — +6

SPEAKER BUS — E1 E2 E3 E4 E5 E6 E7 E8 E9

(SHEET 5 ZONE D4) TO J4 AT MOTHERBOARD — J704

SIDETONE LEVEL ADJ — R743 20K
SQUAWK LEVEL — R744 20K — R745 20K

CHIME LEVEL — C702 33pF — R749 150K
LEFT HP SUM AMP — U705 — C701 10/16 TANT. — C703 1/35 — C704 1/35 — R750 10K
R748 47K — R751 47K
RIGHT HP SUM AMP — C706 33pF — R752 150K — U705 — C705 10/16 — C707 1/35 — C708 1/35 — R753 10K
SPKR SUM AMP — C710 33pF — R754 150K — U706 — C709 10/16 — C711 1/35 — C712 1/35 — R755 10K

J703
1 — TO R100A,CW (SH) — PNL MIC GAIN — R746 20K [6]
2 — HDST MIC GAIN — R747 20K [6]
5 — TO R100B,CW (SH) — TO J8 MOTHERBOARD SHEET 5
6
8
10
11
12 — LAMP ADJ — R761 10K — R763 1K — R764 4.7K — R762 10K — +12V — SPKR DIM — TO R140 (SHEET 16) ZONE C4

J704 P704 PG J6 (SHEET 4) ZONE D7 — SHEET 4 ZONE C7 STATUS LED'S
J705 P705 — DIP SWITCHES — TO PIO#2 J4C1 SHEET 13 ZONE B8
S701, NOT USED
S702, NOT USED
S703, IFB ON/OFF
S704, IFB 8/4 OR 150 12/6
S705, PRESET EXCLUSIVE
S706, TLK/LIST PAIR EXCL
S707, COLD START
S708, SET-UP DISABLE

+5V — R760I 200Ω DS700 D700 — R760H 200Ω DS701 D701 — R760G 200Ω DS702 D702 — R760F 200Ω DS703 D703 — R760E 200Ω DS704 D704 — R760D 200Ω DS705 D705 — R760C 200Ω DS706 D706 — R760B 200Ω DS707 D707 — R760A 220Ω SPARE — IN4004
TO PIO#1 J4A1 SHEET 12 ZONE A5

R715 22Ω R716 22Ω R717 22Ω R718 22Ω R719 22Ω R720 22Ω — U101 U102 U103 U104 U105 U106 — C713 .1/50 C714 .1/50 C715 .1/50 C716 .1/50 C717 .1/50 C718 .1/50

USED ON THIS PAGE: C701-C719, J701-J706, R701-R756, R761-R764, S701-S709, S736, S741-S756, S761-S776, U701-U706, DS700-DS703

NOT USED ON THIS PAGE: R757-R759, S710-S720, S737-S740, S757-S760

J706
5 — +12 (ANALOG) — R756 1K — C719 100/6
6 — +6 (ANALOG)
3
4
1 — ANALOG GND
2
7 — +5 (DIGITAL)
8
9 — RST HI — S709 MICROPROCESSOR RESET
10 — RST LO
TO CPU CARD J7 SHEET 15 ZONE C8
TO MOTHER BOARD J60 SHEET 19 ZONE A5

[6] ALTERNATE VALUE : 100K.
5. U705, U706 ARE NE5532N.
4. U701-U704 ARE MC3403N.
3. R737-R742 = 47K SIPS.
2. R760 = 220Ω SIP.
1. RESISTORS ARE 1/4 W CARBON FILM ± 5%. CAPACITORS VALUES ARE MICROFARADS/VOLTS.

NOTES: UNLESS OTHERWISE SPECIFIED.

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± — DECIMALS .XX ± .XXX ± — ANGLES ±
MATERIAL
FINISH
DO NOT SCALE DRAWING

CONTRACT NO.

APPROVALS	DATE
DRAWN R. PEKSON	8-1-84
CHECKED	
ISSUED	

RTS SYSTEMS BURBANK, CALIFORNIA

SCHEMATIC DIAGRAM, MASTER STATION MODEL 802, 802A, (ADJUSTMENT BOARD)

SIZE D | FSCM NO. 60572 | DWG. NO. SD3000 | REV. P
SCALE | SHEET 7 OF 26

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	REVISED & REDRAWN	10-12-82	
	B	UPDATED	10-28-82	
	C	UPDATED	12-9-82	
	D	UPDATED PER ECO 931	4-8-83	
	E	REV PER ECO #954 MASK 18	5-16-83	
	F	REV. PER. ECO #997 MASK 19	6-13-83	
	G	REV PER ECO #1033 MASK 20	6-24-83	
	H	REVISED PER ECO 1581	1-27-86	
	J	ADDED INTERSHEET REFERENCES FOR CLARITY. SEE ECO # 1632 FOR COMPLETE LIST OF ADDITIONS / CHANGES. CHANGED PIN NO'S 1&2 TO 13 & 12 ON U212.	7-10-86	
	K	PER ECO # 2372	1-3-89	
	L	PER ECO # 2391	2-10-89	

TSD (FROM US-1)

J202 LTX1 C211 .1/50 MONO — ALB1 — ALF1 — U201 — C212 33pF — R212 10K — R211 10K — C213 .1/50 — R213 22Ω +12 — R214 60.4K ±1% — C214 10/25 — C215 33pF — R215 20K ±1% — R216 60.4K ±1% — R217 20K ±1% — R218 100Ω — C216 47/10 — T211 — W211 — J210 (TO J101 SHEET 20 ZONE D7)

J202 LTX2 C221 .1/50 MONO — ALB2 — ALF2 — U202 — C222 33pF — R222 10K — R221 10K — C223 .1/50 — R223 22Ω +12 — R224 60.4K ±1% — C224 10/25 — C225 33pF — R225 20K ±1% — R226 60.4K ±1% — R227 20K ±1% — R228 100Ω — C226 47/10 — T221 — W221

J202 LTX3 C231 .1/50 MONO — ALB3 — ALF3 — U203 — C232 33pF — R232 10K — R231 10K — C233 .1/50 — R233 22Ω +12 — R234 60.4K ±1% — C234 10/25 — C235 33pF — R235 20K ±1% — R236 60.4K ±1% — R237 20K ±1% — R238 100Ω — C236 47/10 — T231 — W231

+12 C230 .1/50 — +6 — U210 4053 — R210A 22K — R210B 22K — R210C 22K — T6 1 — T6 2 — T6 3 — J200 4 5 6 — TO J408 PIO #2 SHEET 13 ZONE C5

J202 LTX4 C241 .1/50 MONO — ALB4 — ALF4 — U204 — C242 33pF — R242 10K — R241 10K — C243 .1/50 — R243 22Ω +12 — R244 60.4K ±1% — C244 10/25 — C245 33pF — R245 20K ±1% — R246 60.4K ±1% — R247 20K ±1% — R248 100Ω — C246 47/10 — T241 — W241 — J210 (TO J101 SHT 20 ZONE D7)

J202 LTX5 C251 .1/50 MONO — ALB5 — ALF5 — U205 — C252 33pF — R252 10K — R251 10K — C253 .1/50 — R253 22Ω +12 — R254 60.4K ±1% — C254 10/25 — C255 33pF — R255 20K ±1% — R256 60.4K ±1% — R257 20K ±1% — R258 100Ω — C256 47/10 — T251 — W231

+12 C240 .1/50 — +6 — U211 4053 — R210D 22K — R210E 22K — R210F 22K — T6 4 — T6 5 — T6 6 — J200 7 8 9 — TO J408 PIO #2 SHEET 13 ZONE C5

J202 LTX6 C261 .1/50 MONO — ALB6 — ALF6 — U206 — C262 33pF — R262 10K — R261 10K — C263 .1/50 — R263 22Ω +12 — R264 60.4K ±1% — C264 10/25 — C265 33pF — R265 20K ±1% — R266 60.4K ±1% — R267 20K ±1% — R268 100Ω — C266 47/10 — T261 — W261

J202

U213 4053 — +6 — 3 1 4 — 5 Δ0 9

U213 — +6 — 1 2 — 15 Δ — 10 — J2 9 — TO C220 (SHT 5) — R201F +12V

10 R290 150 LISTEN LEVEL (OPTION)

LTX15 — C291 .1/50 MONO — R291 10K — C292 33pF — R292 10K — TO S613A PINS 9&10 (SHEET 6) — TO S613B PINS 1&2 (SHEET 6)

BILAT 15, ISO

U209 — C293 .1/50 — R293 22Ω — R299 100K — C294 10/25 — R294 60.4K ±1% — R296 60.4K ±1% — C295 33pF — R295 20K ±1% — R297 20K ±1% — R298 100Ω — C296 — TZ91 — W291 — J51 — TO J106 SHEET 23 ZONE D5 — TBB VCP CONN. REAR PANEL

U213 4053 — C270 .1/50 — R201E 22K +12 — ISO BILAT TALK GATE — J2 — TO J410 PIO #1 SHEET 12 ZONE B5

J211 (J161) — TO J102 SHEET 19 ZONE B4

BILAT 13, IFB #1

LTX13 — C271 .1/50 MONO — ALB13 — ALF13 — U207 — C272 33pF — R272 10K — R271 10K — C273 .1/50 — R273 22Ω +12 — R274 60.4K ±1% — C274 10/25 — C275 33pF — R275 20K ±1% — R276 60.4K ±1% — R277 20K ±1% — R278 100Ω — C276 47/10 — T271 — W271 — J211 (J161) — TO J102 SHEET 19 ZONE B4

+12 C250 .1/50 — +6 — U212 4053 — T6 13 — J200 2 — TO J408 PIO #2 SHEET 13 ZONE C5 — R201C 22K +12

BILAT 14, IFB #2

LTX14 — C281 .1/50 MONO — ALB14 — ALF14 — U208 — C282 33pF — R282 10K — R281 10K — C283 .1/50 — R283 22Ω +12 — R284 60.4K ±1% — C284 10/25 — C285 33pF — R285 20K ±1% — R286 60.4K ±1% — R287 20K ±1% — R288 100Ω — C286 47/10 — T281 — W281 — J211 (J161) — TO J102 SHEET 19 ZONE B4

U212 — R250 100K — R201B — R201C — T6 14 — SES — TO J408/PIO #2 SHEET 13 ZONE C5 — J200 3 5 — J2 — TO J410 PIO #1 SHEET 12 ZONE B5

R280 100K — U214 1/2 5532

R240 22 — C210 .1/50 — U214 1/2 5532 — TO CW, SIDETONE POT, ADJ BOARD TO J4 SHEET 5 ZONE D4

USED ON THIS PAGE: C210-C216, C221-C226, C230-C236, C240-C246, C250-C256, C260-C266, C270-C276, C280-C286, C291-C296, R201A-R201D, R210A-R210F, R211-R219, R221-R229, R231-R239, R241-R249, R251-R259, R261-R269, R271-R279, R281-R289 J2, J51, J200, J202, J210, J211 (J161)

10 R290 IS PART OF AN ALTERNATE 150 CIRCUIT, USED ONLY WHEN CHANNEL 13 IS USED IN 4-WIRE MODE.

9. TRANSFORMERS ARE 600:600, LM9003.
8. ALB AUDIO LISTEN BALANCE AND ALF AUDIO LISTEN FEED GO TO LISTEN SWITCHING AREA OF MOTHERBOARD 5601-3612. PAGE 6.
7. LTX-13, 14, 15 ARE SPARE INPUTS.
6. LTX-1 - LTX-6 CALLOUTS CONNECT TO CALL LIGHT P.C.B., TRANSMITTER. CHANNELS 1-6, SHEET 18.
5. U201-U209, U214 ARE NE5532N.
4. —▷|— = SCHOTTKY DIODE, VF ≈ 0.1 TO 0.3 V
3. CUTTABLE TRACES (USED FOR OPTIONS) ARE SHOWN: -##-
2. CAP. VALUES ARE SHOWN: MICROFARADS / VOLTS.
1. ALL RESISTORS ARE CARBON FILM, 1/4 WATT, ±5%

NOTES: UNLESS OTHERWISE SPECIFIED

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± DECIMALS .XX ± .XXX ± ANGLES ±

MATERIAL

FINISH

DO NOT SCALE DRAWING

CONTRACT NO.

APPROVALS	DATE
DRAWN R. NEILSON	1-27-86
CHECKED	
ISSUED	

RTS SYSTEMS BURBANK, CALIFORNIA

SCHEMATIC DIAGRAM, MASTER STATION MODEL 802, 802A, TALK SW, BILATERAL CURRENT SOURCES CH1-6, 13, 14, 15

SIZE D | FSCM NO. 60572 | DWG. NO. SD3000 | REV. L

SCALE | SHEET 8 OF 26

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	REDRAWN	10-15-82	
	B	REVISED & REDRAWN B.MAER	2/14/82	SLH
	C	REVISED PER ECO# 919 B.MAER	6-7-83	
	D	REVISED PER ECO# 1030 B.MAER	6-24-83	
	E	REVISED PER ECO 1397	1-18-85	
	F	ADDED NOTE 4. SEE ECO # 1632 FOR COMPLETE LIST OF ADDITIONS / CHANGES	7-10-85	
	G	DELETED W2 ECO # 2133	2-16-88	
	H	PER ECO # 2391	2-10-89	

4. SEE SHEET 10 FOR DESTINATION OF CONNECTORS J300, J310, J316, J317, J318. SEE SHEET 21 FOR CONNECTORS J300, J303, J304, J305, J308, J309, J310, J318.

⚠3 R371 & R372 USED ON SQUAWK OPTION P.C.B.#2 (SQUAWK 7-10) ONLY (USED FOR MORE THAN 6 CHANNELS OF SQUAWK); FOR TERMINATION OF UNUSED BILATERAL CURRENT SOURCES.

2. D311-D316, D321-D336 ARE 1AMP, 30V SCHOTTKY DIODES; EX. INT. RECT. PN 11DQ03.

⚠1 FOR SQUAWK OPTION, SET SQUAWK LISTEN CH. SELECT SWITCH (S309) AS DESCRIBED: TALK/SQUAWK P.C.B.#1 CONTAINS LISTEN TAPS 1-6; TALK/SQUAWK P.C.B.#2 CONTAINS LISTEN TAPS 7-10. TO ASSIGN SQUAWK POSITION, SET S309 ON THE P.C.B. THAT CONTAINS THE PROPER LISTEN TAP, TO THAT LISTEN TAP. SET S309 ON THE P.C.B THAT DOES NOT HAVE THE DESIRED LISTEN TAP TO SWITCH POSITION 7, 8, 9, OR 10 (NOT CONNECTED). FOR EXAMPLE: FOR SQUAWK 8, S309 ON P.C.B.#1 IS SET TO POSITION 7, 8, 9, OR 10. S309 ON P.C.B.#2 IS SET TO POSITION 2 (LT8)

NOTES: UNLESS OTHERWISE SPECIFIED

USED ON THIS PAGE: C310-C316, C320-C326, C331-C336, C341-C346, C351-C356, C361-C367, D311-D316, D321-D336, E301-E307, J300A, J300B, J303, J304A, J304B, J305, J306, J308, J309, J310, J316-J318, R310-R370, T311, T321, T331, T341, T351, T361, U301-U308.

AS3000-3	802A
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± DECIMALS .XX ± .XXX ± ANGLES ±
MATERIAL
FINISH
DO NOT SCALE DRAWING

CONTRACT NO. SERIES 800

APPROVALS	DATE
DRAWN S. DUEBBER	10-14-82
CHECKED	
ISSUED	2/14/83

RTS SYSTEMS BURBANK, CALIFORNIA

SCHEMATIC DIAGRAM-MASTER STATION - MODEL 802, 802A, TALK/SQUAWK OPTION BD

SIZE	FSCM NO.	DWG. NO.	REV.
D	60572	SD 3000	H

SCALE — SHEET 9 OF 26

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	C	REVISED & REDRAWN PER ECO# 919	4-7-83	
	D	ADDED NOTE 2. SEE ECO # 1632 FOR COMPLETE LIST OF ADDITIONS / CHANGES.	7-10-86	
	E	DELETED W2 ECO # 2133	2-17-88	
	F	PER ECO # 2391	2-10-89	

TALK/SQUAWK OPTION P.C.B
SHEET 9

(REAR PANEL)
LINE CONNECTOR
J101 SHEET 20

P310 J310

7	BALANCED AUDIO, CH.7	1	T311
32	BALANCED AUDIO, CH.7	2	
8	BALANCED AUDIO, CH.8	3	T321
33	BALANCED AUDIO, CH.8	4	
9	BALANCED AUDIO, CH.9	5	T331
34	BALANCED AUDIO, CH.9	6	
10	BALANCED AUDIO, CH.10	7	T341
35	BALANCED AUDIO, CH.10	8	
11	BALANCED AUDIO, CH.11	9	T351
36	BALANCED AUDIO, CH.11	10	
12	BALANCED AUDIO, CH.12	11	T361
37	BALANCED AUDIO, CH.12	12	
N.C.		13	N.C.
N.C.		14	N.C.

J300A P300A P409 J409

1	GND	1	1	
2	TALK GATE # 7	2	2	
3	TALK GATE # 8	3	3	
4	TALK GATE # 9	4	4	
5	TALK GATE #10	5	5	
6	TALK GATE #11	6	6	
7	TALK GATE #12	7	7	
N.C.		8	8	
N.C.		9	9	
10	GND	10	10	

PIO BOARD # 2
SHEET 13

J317 P317 P617 J617

1	AUDIO LISTEN FEED 12	1	1	
2	AUDIO LISTEN BALANCE 12	2	2	
3	AUDIO LISTEN FEED 11	3	3	
4	AUDIO LISTEN BALANCE 11	4	4	
5	AUDIO LISTEN FEED 10	5	5	
6	AUDIO LISTEN BALANCE 10	6	6	
7	AUDIO LISTEN FEED 9	7	7	
8	AUDIO LISTEN BALANCE 9	8	8	
9	AUDIO LISTEN FEED 8	9	9	
10	AUDIO LISTEN BALANCE 8	10	10	
11	AUDIO LISTEN FEED 7	11	11	
12	AUDIO LISTEN BALANCE 7	12	12	
N.C.		13	13	N.C.
N.C.		14	14	N.C.

MOTHER BOARD
SHEETS 6 & 19

J318 P318 P50 J50

1	GND	1	1	
2	SQUAWK 41	2	2	
3	GND	3	3	
4	GND	4	4	
5	+12V	5	5	
6	+12V	6	6	
7	+6V	7	7	
8	+6V	8	8	
9	USD	9	9	USM
10	TSD	10	10	

J316 1 2 3 4 5 6 7 8 9 10 — TALK BUS

P316 1 2 3 4 5 6 7 8 9 10
LTX12 LTX11 LTX10 LTX9 LTX8 LTX7

P1804 1 2 3 4 5 6 7 8 9 10

J1804 1 2 3 4 5 6 7 8 9 10

CALL LIGHT OPTION
P.C.B. #2, CH. 7-12
SHEET 18

2. SEE ALSO SHEET 21 FOR SQUAWK CONNECTIONS.
1. N.C. = NO CONNECTION
NOTE: (UNLESS OTHERWISE SPECIFIED)

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± DECIMALS .XX ± .XXX ± ANGLES ±
MATERIAL
FINISH
DO NOT SCALE DRAWING

CONTRACT NO. SERIES 800

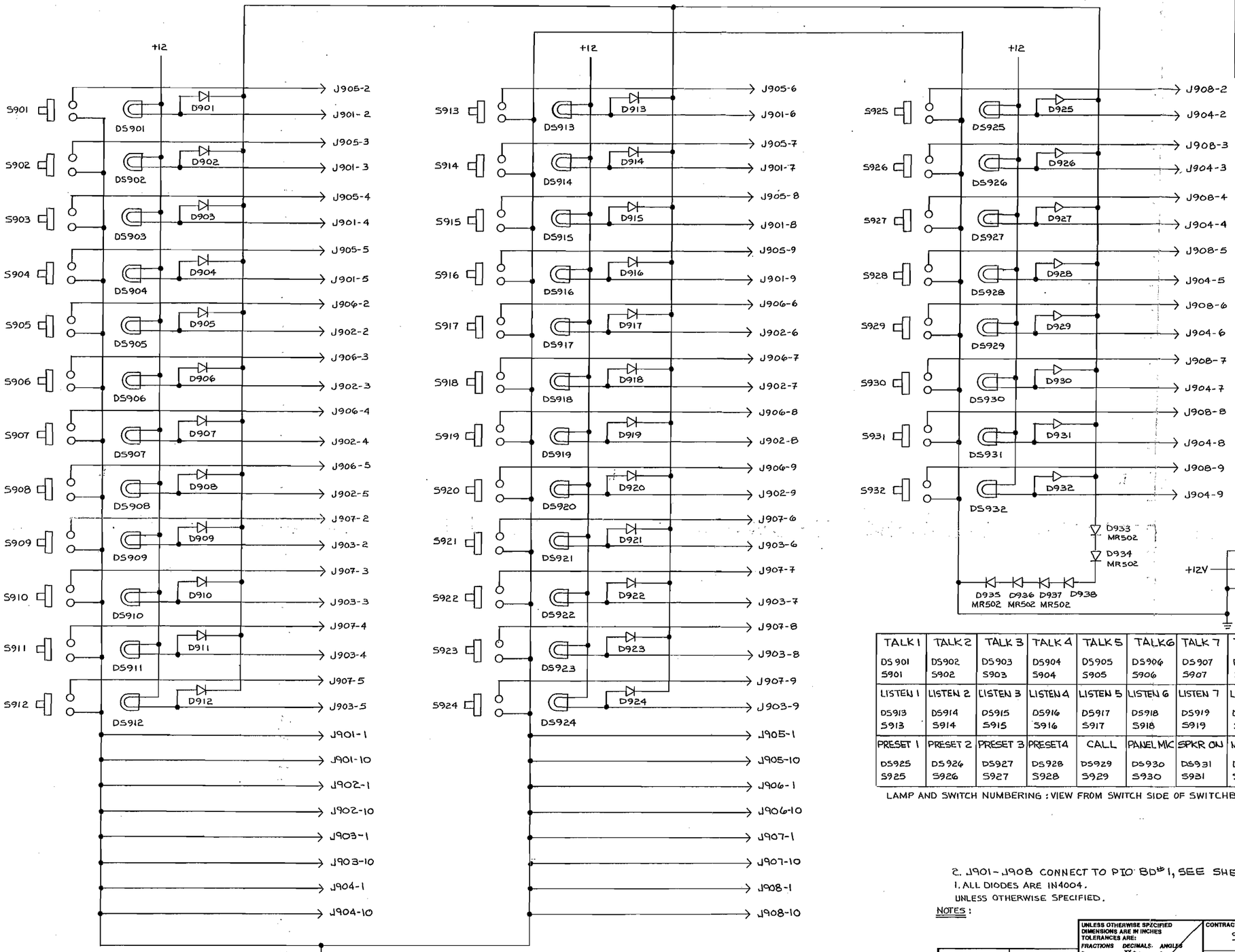
APPROVALS	DATE
DRAWN B. MAEZ	4-7-83
CHECKED	
ISSUED	

RTS SYSTEMS BURBANK, CALIFORNIA

SCHEMATIC DIAGRAM - TALK OPTION (TALK CHANNELS 7-12) INTERCONNECT

SIZE D | FSCM NO. 60572 | DWG. NO. SD3000 | REV. F
SCALE | SHEET 10 of 26

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	UPDATED	10-28-82	
	B	REV. PER ECO# 997 B.MAEZ	6-14-83	
	C	ADDED INTERSHEET REFERENCE FOR CLARITY, SEE ECO # 1632 FOR COMPLETE LIST OF ADDITIONS / CHANGES.	7-10-86	
	D	PER ECO # 2391	2-10-89	



TALK 1	TALK 2	TALK 3	TALK 4	TALK 5	TALK 6	TALK 7	TALK 8	TALK 9	TALK 10	TALK 11	TALK 12
DS901 S901	DS902 S902	DS903 S903	DS904 S904	DS905 S905	DS906 S906	DS907 S907	DS908 S908	DS909 S909	DS910 S910	DS911 S911	DS912 S912
LISTEN 1	LISTEN 2	LISTEN 3	LISTEN 4	LISTEN 5	LISTEN 6	LISTEN 7	LISTEN 8	LISTEN 9	LISTEN 10	LISTEN 11	LISTEN 12
DS913 S913	DS914 S914	DS915 S915	DS916 S916	DS917 S917	DS918 S918	DS919 S919	DS920 S920	DS921 S921	DS922 S922	DS923 S923	DS924 S924
PRESET 1	PRESET 2	PRESET 3	PRESET 4	CALL	PANEL MIC	SPKR ON	MIC ON				
DS925 S925	DS926 S926	DS927 S927	DS928 S928	DS929 S929	DS930 S930	DS931 S931	DS932 S932				

LAMP AND SWITCH NUMBERING : VIEW FROM SWITCH SIDE OF SWITCHBOARD

J901 TO J406
J902 TO J407
J903 TO J408
J904 TO J409
J905 TO J401
J906 TO J402
J907 TO J403
J908 TO J404

2. J901-J908 CONNECT TO PIO BD# 1, SEE SHEET 12.
1. ALL DIODES ARE IN4004.
UNLESS OTHERWISE SPECIFIED.

NOTES :

USED ON THIS PAGE: D901-D938, DS901-DS932, J910
S901-S932, J901-J908

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± DECIMALS .XX ± .XXX ± ANGLES ±
MATERIAL
FINISH
DO NOT SCALE DRAWING

CONTRACT NO.	
SERIES 800	
APPROVALS	DATE
DRAWN S. DUEBBER	5-8-82
CHECKED	
ISSUED	

RTS SYSTEMS BURBANK, CALIFORNIA

SCHEMATIC DIAGRAM
MASTER STATION, MODEL 802, 802A
(SWITCHBOARD)

SIZE	FSCM NO.	DWG. NO.	REV
D	60572	SD 3000	D

SCALE — SHEET 11 OF 26

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	REVISED AND REDRAWN	9-24-82	
	B	UPDATED	10-21-82	
	C	CHANGED 74C14 TO 74C04	12-9-82	
	D	REV PER ECO# 997 MAEZ B	6-14-83	
	E	REV PER ECO # 1114 LB	10-13-83	
	F	ADDED INTERSHEET REFERENCES FOR CLARITY. SEE ECO # 1632 FOR COMPLETE LIST OF ADDITIONS / CHANGES	7-10-86	
	G	CHANGED NOTE 1 WAS -C469 ECO 1907	5-1-87	
	H	PER ECO # 2391	2-10-89	

+5V

R401 A-J 22KΩ R402 A-H 1MΩ

J405
GND 1, DIØ 2, SQUAWK ENABLE, SWI DI 1 3, SQUAWK POSIT SW2 BASE, DI2 4, SQUAWK POSIT SW3 BASE, DI3 5, CALL/SET UP DI4 6, DI5 7, SQUAWK TALLY 9 DI6 8, SQUAWK TALLY 10 DI7 9, GND 10

C401 C402 C403 C404 C405 C406 C407 C408

U401 74C04 (+5)

U408 74HC240 (+5) DIØ DI1 DI2 DI3 DI4 DI5 DI6 DI7 → R4

R403 A-J 22KΩ R404 A-H 1MΩ

J404
GND 1, PRESET 1, S925 DIØ 2, PRESET 2, S926 DI 1 3, PRESET 3, S927 DI2 4, PRESET 4, S928 DI3 5, CALL/SET UP S929 DI4 6, PANEL MIC S930 DI5 7, SPKR ON S931 DI6 8, MIC ON S932 DI7 9, GND 10

C409 C410 C411 C412 C413 C414 C415 C416

U402 74C04 (+5)

U409 74HC240 (+5) DIØ DI1 DI2 DI3 DI4 DI5 DI6 DI7 → R3

R405 A-J 22KΩ R406 A-H 1MΩ

J403
GND 1, TALK 9, S909 DIØ 2, TALK 10, S910 DI1 3, TALK 11, S911 DI2 4, TALK 12, S912 DI3 5, LISTEN 9, S921 DI4 6, LISTEN 10, S922 DI5 7, LISTEN 11, S923 DI6 8, LISTEN 12, S924 DI7 9, GND 10

C417 C418 C419 C420 C421 C422 C423 C424

U403 74C04 (+5)

U410 74HC240 (+5) DIØ DI1 DI2 DI3 DI4 DI5 DI6 DI7 → R2

R407 A-J 22KΩ R408 A-H 1MΩ

J402
GND 1, TALK 5, S905 DIØ 2, TALK 6, S906 DI1 3, TALK 7, S907 DI2 4, TALK 8, S908 DI3 5, LISTEN 5, S917 DI4 6, LISTEN 6, S918 DI5 7, LISTEN 7, S919 DI6 8, LISTEN 8, S920 DI7 9, GND 10

C425 C426 C427 C428 C429 C430 C431 C432

U404 74C04 (+5)

U411 74HC240 (+5) DIØ DI1 DI2 DI3 DI4 DI5 DI6 DI7 → R1

R409 A-J 22KΩ R410 A-H 1MΩ

J401
GND 1, TALK 1, S901 DIØ 2, TALK 2, S902 DI1 3, TALK 3, S903 DI2 4, TALK 4, S904 DI3 5, LISTEN 1, S913 DI4 6, LISTEN 2, S914 DI5 7, LISTEN 3, S915 DI6 8, LISTEN 4, S916 DI7 9, GND 10

C433 C434 C435 C436 C437 C438 C439 C440

U405 74C04 (+5)

U412 74HC240 (+5) DIØ DI1 DI2 DI3 DI4 DI5 DI6 DI7 → RØ

+5V

J406
GND 1, TALK 1, DS901 DØ 2, TALK 2, DS902 DI 3, TALK 3, DS903 DI2 4, TALK 4, DS904 DI3 5, LISTEN 1, DS913 DI4 6, LISTEN 2, DS914 DI5 7, LISTEN 3, DS915 DI6 8, LISTEN 4, DS916 DI7 9, GND 10

J407
GND 1, TALK 5, DS905 DØ 2, TALK 6, DS906 DI 3, TALK 7, DS907 DI2 4, TALK 8, DS908 DI3 5, LISTEN 5, DS917 DI4 6, LISTEN 6, DS918 DI5 7, LISTEN 7, DS919 DI6 8, LISTEN 8, DS920 DI7 9, GND 10

J408
GND 1, TALK 9, DS909 DØ 2, TALK 10, DS910 DI 3, TALK 11, DS911 DI2 4, TALK 12, DS912 DI3 5, LISTEN 9, DS921 DI4 6, LISTEN 10, DS922 DI5 7, LISTEN 11, DS923 DI6 8, LISTEN 12, DS924 DI7 9, GND 10

J409
GND 1, PRESET 1, DS925 DØ 2, PRESET 2, DS926 DI 3, PRESET 3, DS927 DI2 4, PRESET 4, DS928 DI3 5, CALL DS929 DI4 6, PNL MIC DS930 DI5 7, SPKR ON DS931 DI6 8, MIC ON DS932 DI7 9, GND 10

J410
GND 1, MSE J2-2 DØ 2, PME J2-3 DI 3, HME J2-4 DI2 4, SES J2-5 DI3 5, SPE J2-6 DI4 6, SPD J2-7 DI5 7, ISO TALK DI6 8, ISO LISTEN DI7 9, GND 10

J411
GND 1, STATUS LED #1 DØ 2, #2 DI 3, #3 DI2 4, #4 DI3 5, #5 DI4 6, #6 DI5 7, #7 DI6 8, #8 DI7 9, GND 10
ADJ BOARD TO J705 SHEET 7

U413 ULN2004/MC1416 (8)
U414 ULN2004/MC1416 (8)
U415 ULN2004/MC1416 (8)
U416 ULN2004/MC1416 (8)
U417 ULN2004/MC1416 (8)
U418 ULN2004/MC1416 (8)
U419 ULN2004/MC1416 (8)

U420 74HC373 (+5) DØ DI D2 D3 D4 D5 D6 D7 → WØ
U421 74HC373 (+5) → W1
U422 74HC373 (+5) → W2
U423 74HC373 (+5) → W3
U424 74HC373 (+5) → W4
U425 74HC373 (+5) → W5

USED ON THIS PAGE: C401-C440, J401-J415, R401-R411, U401-U428

J412 TO J2 CPU SHEET 15 ZONE B5
J413 TO J3 CPU SHEET 15 ZONE B3

READ ADDRESS DECODER
TO J4 CPU SHEET 15 ZONE C2
J414

U427 74PC138 (+5) EN, A2 A1 AØ, RØ R1 R2 R3 R4 → RD
U426 74HC240 (+5) WØ W1 W2 W3 W4 W5
U428 74PC138 (+5) → WR

WRITE ADDRESS DECODER
W1 DEVØ, W2 DEV1, W3 DEV2, W4 DEV3

J415
TO J12T SHEET 16

R411 .5Ω 1/2W +5

DEVICE ADDRESS JUMPER BOARD FUNCTION IS DETERMINED BY JUMPER LOCATION
I.E. PIO# 1 = W1

2. C401-C440 ARE .01μF/50V MONO. CERAMIC CAPACITORS FOR DEBOUNCING.
1. C441-C460 ARE .1μF/50V MONO. CERAMIC CAPACITORS USED TO BYPASS EACH I.C.
NOTES: (UNLESS OTHERWISE SPECIFIED)

AS3000-4	802
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± DECIMALS .XX ± .XXX ± ANGLES ±
MATERIAL
FINISH
DO NOT SCALE DRAWING

CONTRACT NO. SERIES 800

APPROVALS	DATE
DRAWN S. DUEBBER	9-24-82
CHECKED	
ISSUED	

RTS SYSTEMS BURBANK, CALIFORNIA

SCHEMATIC DIAGRAM
MASTER STATION MODEL 802, 802A,
PIO# 1, I/O BOARD

SIZE D | FSCM NO. 60572 | DWG. NO. SD 3000 | REV. H
SCALE | SHEET 12 of 26

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	REVISED AND REDRAWN	9-24-82	
	B	UPDATED	10-21-82	
	C	CHANGED R406A-H, WAS 1 MΩ	11-23-82	
	D	CHANGED 74C14 TO 74C04	12-9-82	
	E	REV PER ECO# 997 MAE	6-14-83	
	F	REV PER ECO# 1114 LB	10-13-83	
	G	ADDED KEYS TO PINS 6 & 9 OF J411 GM	10-9-84	
	H	ADDED INTER-SHEET REFERENCES FOR CLARITY. SEE ECO # 1632 FOR COMPLETE LIST OF ADDITIONS / CHANGES	7-10-86	
	J	CHNG MOTHERBD DIP SW FUNTION CALLOUTS R8	9-12-86	
	K	REV J401 & J402 PIN FUNCTION CALLOUTS	9-26-86	
	L	CHANGED NOTE 1 WAS -CA69 ECO 1907	5-1-87	
	M	PER ECO# 2391	2-10-89	

TO J313 SHEET 24 ZONE B1

J405 — R401A-J 22KΩ, R402A-H 1MΩ

IFB*2, TALLY 5 / TALLY 6 / TALLY 7 / TALLY 8 / IFB*2, SA2

TO MOTHER BOARD J5 J404 — R403A-J 22KΩ, R404A-H 1MΩ

HDS
FOOT SWITCH
EXTERNAL PRESET 4
ISO ENABLE

TO CPU J5 SHEET 15 ZONE A2 J403 — R405A-J 22KΩ, R406A-H 1K

CPU TIMER
T1
T2
T3
T4
T5
T6
T7
T8

TO J128 SHEET 16 ZONE C3

MOTHER BOARD J402 — R407A-J 22KΩ, R408A-H 1MΩ

SEE CURRENT TDP 3510

TO J705 SHEET 7 ZONE D3

ADJUSTMENT BD. J401 — R409A-J 22KΩ, R410A-H 1MΩ

SEE CURRENT TDP 3510

+5V

U401, U402, U403, U404, U405, U406, U407 — 74C04

U408, U409, U410, U411, U412 — 74HC240

R4, R3, R2, R1, R0

TO J621 SHEET 6 J406

LISTEN GATE 1
LISTEN 2
LISTEN 3
LISTEN 4
LISTEN 5
LISTEN 6
LISTEN 7
LISTEN GATE 8

TO J622 SHEET 6 J407

LISTEN GATE 9
LISTEN 10
LISTEN 11
LISTEN 12
LISTEN 13
LISTEN 14
LISTEN 15
LISTEN GATE 16

TO J200 SHEET 8 J408

TALK GATE 13
TALK 14
TALK 1
TALK 2
TALK 3
TALK 4
TALK 5
TALK GATE 6

TO J300A SHEETS 9,10 J409

TALK GATE 7
TALK 8
TALK 9
TALK 10
TALK 11
TALK GATE 12

TO J221 SHEET 20 J410

KEY
1
2
3
4
5
6
7
8

TO J223 SHEET 20 J411

KEY
9
10
11
12
GLOBAL RESET TALLY
CLE
CTE
GLOBAL RESET KEY

U413, U414, U415, U416, U417, U418, U419 — ULN2004 / MC1416

U420, U421, U422, U423, U424, U425 — 74HC373

W0, W1, W2, W3, W4, W5

J412 TO J2 CPU SHEET 15

J413 TO J3 CPU SHEET 15

READ ADDRESS DECODER

U427 — 74PC138

TO J4 CPU SHEET 15 J414

RD

U426 — 74HC240

U428 — 74PC138

WR

WRITE ADDRESS DECODER

DEV 0, DEV 1, DEV 2, DEV 3

TO J127 SHEET 16 J415

R411 .5Ω 1/2W

DEVICE ADDRESS JUMPER
BOARD FUNCTION IS DETERMINED BY JUMPER LOCATION
I.E.: PIO #2 = W2

USED ON THIS PAGE: C401-C440, J401-J415, R401-R411, U401-U428

NOTES: (UNLESS OTHERWISE SPECIFIED)

1. C401-C440 ARE .01μF/50V MONO. CERAMIC CAPACITORS FOR DEBOUNCING.
1. C441-C460 ARE .1μF/50V MONO. CERAMIC CAPACITORS USED TO BYPASS EACH I.C.

AS3000-4	802
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± DECIMALS .XX ± .XXX ± ANGLES ±
MATERIAL
FINISH
DO NOT SCALE DRAWING

CONTRACT NO. SERIES 800

APPROVALS	DATE
DRAWN S. DUEBBER	9-24-82
CHECKED	
ISSUED	

RTS SYSTEMS BURBANK, CALIFORNIA

SCHEMATIC DIAGRAM
MASTER STATION MODEL 802, 802A,
PIO #2 I/O BOARD

SIZE D | FSCM NO. 60572 | DWG. NO. SD 3000 | REV. M
SCALE | SHEET 13 OF 26

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	REVISED AND REDRAWN	9-24-82	
	B	UPDATED	10-21-82	
	C	CHANGED 74C14 TO 74C04	12-9-82	
	D	REV PER ECO# 997		
	E	REV PER ECO # 1114 LB	10-13-83	
	F	ADDED GLOBAL RE. KEY ON PIN 9, J405	11-9-84	
	G	ADDED INTERSHEET REFERENCES FOR CLARITY. SEE ECO # 1632 FOR COMPLETE LIST OF ADDITIONS / CHANGES. ADDED NOTES 3 & 4	7-10-86	
	H	CHANGED NOTE 1 WAS -C469 ECO 1907	5-1-87	
	J	PER ECO # 2391	2-10-89	

TO J54 SHEETS 23,26

J405: ISO TALLY IN #1 DI0, #2 DI1, #3 DI2, #4 DI3, ISO TALLY IN #5 DI4, #6 DI5, GLOBAL RESET KEY DI6, DI7, GND

R401A-J 22KΩ, R402A-H 1MΩ; C401–C408

U401, U402, U403, U404 (74C04)

U408, U409, U410, U411, U412 (74HC240) → DI0–DI7, R4, R3, R2, R1, R0

TO J1801 4

J404: CALL LIGHT RX KEY #7, #8, #9, #10, #11, RX KEY #12, BLINK GATE OUT / CALL LIGHT BOARD DETECT, DI0–DI7, GND

R403A-J 22KΩ, R404A-H 1MΩ; C409–C416

TO J1801 3

J403: CALL LIGHT RX KEY #1, #2, #3, #4, #5, RX KEY #6, BLINK GATE OUT / CALL LIGHT BOARD DETECT, DI0–DI7, GND

R405A-J 22KΩ, R406A-H 1MΩ; C417–C424

TO J313 SHEET 24

J402: IFB# 1, TALLY #1, #2, #3, #4, IFB# 1, TALLY, IFB# 1, SA1, DI0–DI7, GND

R407A-J 22KΩ, R408A-H 1MΩ; C425–C432

TO J308 SHEET 21

J401: SQUAWK TALLY #1 DI0, SQUAWK TALLY #2 DI1, SQUAWK TALLY #3 DI2, SQUAWK TALLY #4 DI3, SQUAWK TALLY #5 DI4, SQUAWK TALLY #6 DI5, SQUAWK TALLY #7 DI6, SQUAWK TALLY #8 DI7, GND

R409A-J 22KΩ, R410A-H 1MΩ; C433–C440

+5V

TO J1803 3

J406: CALL LIGHT TX KEY #1, #2, #3, #4, #5, TX KEY #6, BLINK GATE IN, GND, D00–D07

TO J1803 4

J407: CALL LIGHT TX KEY #7, #8, #9, #10, #11, TX KEY #12, BLINK GATE IN, GND, D00–D07

TO J312 SHEET 24 ZONE B6

IFB# 1, KEY #1, #2, #3, IFB# 1, KEY #4, IFB# 1, SA1

J408: GND, D00–D07

TO J312 SHEET 24 ZONE B2

IFB# 2, KEY #5, #6, #7, IFB# 2, KEY #8, IFB# 2, SA2

J409: GND, D00–D07

TO J306 SHEET 21 J52 SHEETS 23,26

ISO KEY #1, ISO KEY #2, ISO KEY #3, ISO KEY #4, ISO KEY #5, ISO KEY #6, SQUAWK KEY #9, SQUAWK KEY #10

J410: GND, D00–D07

TO J300A SHEET 21

SQUAWK KEY #1, #2, #3, #4, #5, #6, #7, SQUAWK KEY #8

J411: GND, D00–D07

U413, U414, U415, U416, U417, U418, U419 (ULN2004 / MC1416)

U420, U421, U422, U423, U424, U425 (74HC373 LE OE) → D00–D07, WO, W1, W2, W3, W4, W5

J412 TO J2 CPU SHEET 15 ZONE B5: GND, D00–D07, GND

J413 TO J3 CPU SHEET 15 ZONE B5: GND, DI0–DI7, GND

READ ADDRESS DECODER

U427 (74PC138): R0–R4 → RD; EN; +5V; A2, A1, A0

J414

WRITE ADDRESS DECODER

U426 (74HC240): WO, W1, W2, W3, W4, W5

U428 (74PC138): WR; +5V; A2, A1, A0

W1 DEV0, W2 DEV1, W3 DEV2, W4 DEV3

DEVICE ADDRESS JUMPER
BOARD FUNCTION IS DETERMINED BY JUMPER LOCATION
I.E. PIO #3 = W3

J415 TO J127 SHEET 16

R411 .5Ω 1/2W +5

4 TO CALL LIGHT P.C.B. #2 SHEET 18.

3 TO CALL LIGHT P.C.B. #1 SHEET 18.

2. C401–C440 ARE .01μF/50V MONO. CERAMIC CAPACITORS FOR DEBOUNCING.

1. C441–C460 ARE .1μF/50V MONO. CERAMIC CAPACITORS USED TO BYPASS EACH I.C.

NOTES: (UNLESS OTHERWISE SPECIFIED)

USED ON THIS PAGE: C401–C440, J401–J415, R401–R411, U401–U428

AS3000-4	802
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± DECIMALS .XX ± .XXX ± ANGLES ±
MATERIAL
FINISH
DO NOT SCALE DRAWING

CONTRACT NO. SERIES 800

APPROVALS	DATE
DRAWN S. DUEBBER	9-24-82
CHECKED	
ISSUED	

RTS SYSTEMS BURBANK, CALIFORNIA

SCHEMATIC DIAGRAM
MASTER STATION MODEL 802, 802A,
PIO #3, I/O BOARD

SIZE D | FSCM NO. 60572 | DWG. NO. SD 3000 | REV. J
SCALE | SHEET 14 OF 26

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	REVISED & REDRAWN	10-6-82	
	B	UPDATED	10-28-82	
	C	DELETE D2,U10,U24	11-15-82	
	D	NOTE 5 DELETED AT U14 ONLY; ADDED R14A-I; U16 WAS 27C16; ADDED C17, C18; C6 WAS 150/16V TANT.	11-23-82	
	E	UPDATED	12-29-82	
	F	D3 WAS IN5818 MV	8-3-83	
	G	REVISED J6 PER ECO 1105 DM	9-26-83	
	H	REVISED DT PER ECO 1340 MM	10-25-84	
	J	REVISED PER ECO 1408	1-21-86	
	K	CORRECTED VALUE @ C3 PER ECO 1577 MW	1-15-86	
	L	ADDED INTERSHEET REFERENCES FOR CLARITY. SEE ECO # 1632 FOR COMPLETE LIST OF ADDITIONS / CHANGES	7-10-86	
	M	REVISED PER ECO 1936	7-15-87	
	N	REVISED PER ECO # 2391	1-23-89	

CLOCK
C2 22pF
Y1 CX 4MHz
C3 47pF
R6 1 MEG.

HIGH ORDER ADDRESS BUFFER
U5

MEMORY PROM
U12 27C16 (MS0)
U13 27C16 (MS1)
U14 27C16 (MS2)
U15 27C16 (MS3)
MEMORY RAM
U16 6116 (MS4)

U2 NSC800 CPU
WAIT RQ
BUS RQ
BUSAK
SØ
REFRESH
S1
INTAK
INTRQ
NMIRQ
R4B R4D R4E R4I R4H R4G R4F R4C R5 22K
C20 .1/50
IO/M ALE RD RESET OUT WR CLK XOUT XIN RSTIN

ADDRESS LATCH
U8 82PC12

OUTPUT BUFFER
U6

INPUT BUFFER
U7

R7 22K
U3 U4 U23

D3 11DQ03
D4 IN6263
C4 .1/50
B1 3.6VDC BATTERY GE418901 CD18-1
R8 470Ω
Q2
D5 IN4004
R9 22K
U25 4016
R10 10K +5

U9 74PC138
DV0 3800H DEV0
DV1 3808H DEV1
DV2 3810H DEV2
DV3 3818H DEV3
U23 BCLK

TO J414 SHEETS 12,13,14 J151 SHEET 17

J4 BRD BWR BA2 BA1 BA0 DV0 DV1 DV2 DV3 BCLK

TO J412 SHEETS 12,13,14 J152 SHEET 17
DATA OUT BUS

TO J413 SHEETS 12,13,14
DATA IN BUS

J6 DV7 UART
BRD DVR BWR BCLK BA0 BA1 +5V
DV RD
DV7
U23 74PC02

J1 POWER IN
TO J127 SHEET 16

J8 POWER LOOP THROUGH

U11 74PC138
00H 0
800H 2K
1000H 4K
1800H 6K
2000H 8K
2800H
3000H
3800H 14K

U20 4040B
J5
TO J403 SHEET 13
W11

U19 4040B 2KHz

U20 DATA

IN/OUT	PIN	PERIOD
QØ	10	0.50 ms
Q1	9	1.00
Q2	7	2.05
Q3	6	4.10
Q4	5	8.20
Q5	3	16.40
Q6	2	32.80
Q7	4	65.60
Q8	13	131.20
Q9	12	261.00
Q10	14	523.00
Q11	15	1046.00
Q12	1	2192.00 ms

J7
C1 1/35 TANT
R3 100K
R1 100K
R2 100K
D1 IN914
Q1 2N5210
RSTSW

RESET SW (ON ADJ. BOARD)
R13 100
R12 200
Q3 MPS 4355
D8 IN6263
D7 IN746A
R11 10K
C5 .1/50
R4A 22K

C17 150/16 TANT
C6 C7 C8 C9 C10 C11 C12 C13 C14 C15 C16 .1/50
C18 .1/50

Y1 – 4.0MHz

	NO. OF PINS	PIN # +5V	PIN # GND
U2 – NSC800N	40	40	20
U3 – 74PC00	14	14	7
U4 – 74PC04	14	14	7
U5-U7 – 82PC08	20	20	10
U8 – 82PC12	24	24	12
U9 -U11 – 74PC138	16	16	8
U12-U15- 27C16	24	24	12
U19,U20 – CD4040	16	16	8
U23 – 74PC02	14	14	7
U16 – 6116	24	24	12

6. THIS CPU SCHEMATIC IS USED ONLY FOR THE MODEL 802. SEE SD5336 FOR THE MODEL 802A CPU.
(5) FOR FUTURE USE
4. C7-C16 ARE 0.1/50V MONO CAPS.
3. WHERE PROMS ARE USED JUMPER PIN 21 TO +5V
2. WHERE RAMS ARE USED JUMPER PIN 21 TO WR
1. INITAL BOARD POPULATION
WILL BE 2 PROMS – 27C16
1 RAM – 6116
2 SPARE
NOTES: UNLESS OTHERWISE SPECIFIED

A15	A14	A13	A12	A11			
				0	0	0000H	PROM 1
				1	2048	0800H	PROM 2
		1	0		4096	1000H	PROM 3
		1	1		6144	1800H	PROM 4
1	0	0			8192	2000H	MEM –
1	0	1			10240	2800H	X
1	1	0			12288	3000H	X
1	1	1			14336	3800H	DEV

LAST USED: C18, D8, U8, Q3, R14, J25
NOT USED: D2, D6, U1, U10, U17, U18, U21, U22, U24

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± DECIMALS .XX ± .XXX ± ANGLES ±
MATERIAL
FINISH
DO NOT SCALE DRAWING

CONTRACT NO. SERIES 800

APPROVALS	DATE
DRAWN S.DUEBBER	10-6-82
CHECKED	
ISSUED	

RTS SYSTEMS BURBANK, CALIFORNIA

SCHEMATIC DIAGRAM
MASTER STATION, MODEL 802,
(PROCESSOR / CPU)

SIZE D | FSCM NO. 60572 | DWG. NO. SD3000 | REV. N
SCALE — | SHEET 15 OF 26

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	REVISED	10-21-82	
	B	UPDATED PER ECO 931	4-11-83	
	C	UPDATED PER ECO 955 .. MAEZ & MAEZ	5-16-83	
	D	REV PER ECO 991 ..... MAEZ & MAEZ	6-14-83	
	E	REVISED PER ECO 1385 GM	2-8-85	
	F	REVISED PER ECO 1474 GM	7-9-85	
	H	REVISED PER ECO 1581	1-27-86	
	J	ADDED INTERSHEET REFERENCES FOR CLARITY. SEE ECO # 1632 FOR COMPLETE LIST OF ADDITIONS / CHANGES	7-10-86	
	K	CHNG DIP SW FUNCTION CALLOUTS RB	9-12-86	
	L	REVISED PER ECO # 2214		
	M	PER ECO # 2391	7-10-89	

TB 16
E29
ALTERNATE CONFIGURATION INSTEAD OF J108
J108 CALRAD 4 PIN
16 VAC/DC +
CHASSIS
16 VAC
COMMON
F1 FUSE
BACK PANEL
P129
J129
C125 .01/1KV
C126 .01/1KV
C127 .01/1KV
C128 .01/1KV
D125 MR752
D126 MR752
D127 MR752
D128 MR752
+10 TO +24 VDC
A
C129 2200/35
C130 .2200/35
C131 2200/35
C132 2200/35
U125 LM317K (TO-3)
U126 LM317K (TO-3)
ADJ.
D129 IN4004
C133 1/35 TANT
C134 1/35 TANT.
C135 1/35 TANT.
R125 1.8K
R126 1K
R127 243 ±1%
R128 10
R129 0.33 5W
R130 1.5K
R131 1K
R132 22K
Q125 2N5210
Q126 MPS 4355
J126
10V TO 15V
TO J910 SHEET 11 ZONE B2 TO LAMPSON SWITCHBOARD
MPS 4355
R139 100K
R140 10K
TO J6-1, AND THEN TO R761 ADJ. BD.
MOTHER BOAD DIP SW ASSY S125
J128 (J55)
DIP SW # 1 CALL LIGHT TIME OUT
" " 2 TALK 7-12 ENABLE
" " 3 801 EMULATE
" " 4 ISO EXT-OFF/INT-ON
" " 5 ISO LISTEN ENABLE
" " 6 ISO ENABLE
" " 7 NOT USED
" " 8 IFB TLK DISABLE
TO PIO # 2 J402 SHEET 13
D130 IN4004
U127 LM317K (TO-3)
R133 243 ±1%
D131 IN4004
C136 1/35 TANT.
C137 1/35
C138 10/16
R134 2.15K ±1%
TO 12V SPEAKER & HEADPHONE AMPS & RELAYS
D132 IN4004
U128 LM317T
R135 1K
D135 IN4004
C141 10/16
R138 8.2K 5% ¼W
12V ANALOG
D136 IN4004
U129 LM317K (TO-3)
C142 1/35 TANT
C143 1/35 TANT.
R136 243 ±1%
D137 IN4004
C144 10/16
R137 750 ±1%
J127
5V TO PIO/CPU BOARDS
TO J415 SHEETS 12,13,14
J1 SHEET 15
J153 SHEET 17
J1806 SHEET 18

SEE SHEET 4 ZONE A5 FOR 6 VOLT REGULATOR

USED ON THIS PAGE :
C125-C138, C140-C144, D125-D133, D135-D137, E25-E28, F1, F2
Q125-Q127, R125-R140, TB16, U125-U129

NOT USED :
C139, C140, D133, D134

LAST USED :
C144, D137, E28, F2, Q127, R140, TB16, U129

NEXT ASSY	USED ON		
APPLICATION		DO NOT SCALE DRAWING	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± DECIMALS .XX ± .XXX ± ANGLES °
MATERIAL
FINISH

CONTRACT NO. SERIES 800

APPROVALS	DATE
DRAWN R. NEILSON	1-27-86
CHECKED	
ISSUED	

RTS SYSTEMS BURBANK, CALIFORNIA

SCHEMATIC DIAGRAM, MASTER STATION, MODEL 802, 802A, POWER SUPPLY

SIZE D | FSCM NO. 60572 | DWG. NO. SD 3000 | REV. M
SCALE — | SHEET 16 OF 26

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	REVISED	10-18-82	
	B	UPDATED	10-28-82	
	C	ADDED JUMPER ON W158	12-9-82	
	D	REV PER ECO # 997 MAB	6-14-83	
	E	REV PER ECO #1113 LB	10-11-83	
	F	ADDED INTERSHEET REFERENCES FOR CLARITY. SEE ECO # 1632 FOR COMPLETE LIST OF ADDITIONS / CHANGES	7-10-86	
	G	REVISED PER ECO # 2391	1-23-89	

FROM DIGITAL ADDRESS BUS
TO J4 SHEET 15

FROM DIGITAL DATA OUT BUS
TO J2 SHEET 15

FROM DIGITAL POWER BUS
TO J127 SHEET 16

J151 · BCLK · WR · DEV3 · A2 · A1 · A0

U152 74HC00 · 2 MHz

U150 ADDRESS DECODER 74HC138 · W158 W157 W156 W155 W154 W153 W152 W151

R150 2.7K · +5

J5 CHIME READY · TO J404 SHEET 13

J152 · U151 DATA LATCH 74HC373

U153 PROGRAMMABLE SOUND GENERATOR SN76489A · CE · WE · READY · (LSB) · (MSB)

⚠2 MODEL 802A ONLY
U153 SOCKET · PI153 16-PIN DIP · PIO · N.C. · N.C. · TO J10 OF 802A CPU (SD5336)

AUDIO OUT + · C154 10/16 · R151 10 · C155 .1/50 · R152 2.2K · R153 2.2K · R154 2.2K · C156 .1/50 · C157 .1/50 · J4-5 TO J709-5 SHEET 5 ZONE D4

U154 CD4053BE · R157 100K · R158 22K · C158 .1/50 · RBX (SHT4) ZONE B3 · +12 · J223-8

TO PIO #2 SHEET 13
J411-8
CHIME TALK KEY
(SEE SHEET 20 ZONE A4)

J153 · C150 C151 C152 C153 .1/50 · BY PASS CAPACITORS

⚠1 CHIME OPTION, MODEL 802 ONLY

USED ON THIS PAGE: C150-C157, J151-J154, U150-U152, U154, R150-R154, R156, R157

⚠3 U154 IS STANDARD ON THE MODEL 802A. U154 IS USED ON THE 802 ONLY WHEN THE CHIME OPTION IS INSTALLED.

⚠2 CABLE SHOWN WITHIN THESE DASHED LINES IS STANDARD ON THE MODEL 802A ONLY (NOT USED ON THE MODEL 802). PI153 PLUGS INTO THE U153 SOCKET (U153 IS NOT USED).

⚠1 PARTS SHOWN WITHIN THESE DASHED LINES ARE USED ONLY IN THE MODEL 802 WITH THE CHIME OPTION INSTALLED. THESE PARTS ARE NOT ACTIVE IN THE MODEL 802A. THE CHIME OPTION ON THE 802A IS FOUND ON THE CPU BOARD (SEE SD 5336).

NOTES:

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± · DECIMALS .XX ± .XXX ± · ANGLES ±
MATERIAL
FINISH
DO NOT SCALE DRAWING

CONTRACT NO. SERIES 800

APPROVALS	DATE
DRAWN STAN HUBLER	6/30/82
CHECKED	
ISSUED	

RTS SYSTEMS BURBANK, CALIFORNIA

SCHEMATIC DIAGRAM,
MASTER STATION, MODELS 802 & 802A
MOTHER BOARD (CHIME OPTION)

SIZE D · FSCM NO. 60572 · DWG. NO. SD 3000 · REV. G
SCALE · SHEET 17 OF 26

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	UPDATED	9-22-82	
	B	UPDATED	9-24-82	
	C	UPDATED	10-28-82	
	D	ADDED R1871A-R1871F	12-17-82	
	E	ADDED INTERSHEET REFERENCES FOR CLARITY. SEE ECO # 1632 FOR COMPLETE LIST OF ADDITIONS / CHANGES	7-10-86	
	F	CHANGED R1813,R1823,R1833,R1843,R1853 & R1863 FROM 33K TO 10K,1/4W. ECO 1751 RN	11-17-86	
	G	CHANGED C1815,C1825,C1835,C1845,C1855, C1865 FROM 330pF TO 680pF ECO # 1755	11-24-86	
	H	PER ECO# 2391	2-10-89	

R1801 100K

U1808

C1801 330pF

R1802 12.7K ±1%

R1803 5K TRIM CERMET

U1807 NE 567 N

+5

R1804 470Ω

DS1801 RED L.E.D.

C1802 .0033 NP0 ±5%

C1803 1/35 TANT

C1804 .047/100

C1805 .1/50

J1805

S1 SLAVE / MASTER

R1805 10K

U1808

TO PAGES 8 & 9

J1804

R1813 10K, C1816 330pF, U1809 — R1810A 22K

R1823 10K, C1826 330pF, U1809 — R1810B 22K

R1833 10K, C1836 330pF, U1809 — R1810C 22K

R1843 10K, C1846 330pF, U1809 — R1810D 22K

R1853 10K, C1856 330pF, U1810 — R1810E 22K

R1863 10K, C1866 330pF, U1810 — R1810F 22K

R1810G 22K

J1803

GND — CALL LIGHT TX KEY 1/7 — CALL LIGHT TX KEY 2/8 — CALL LIGHT TX KEY 3/9 — CALL LIGHT TX KEY 4/10 — CALL LIGHT TX KEY 5/11 — CALL LIGHT TX KEY 6/12 — BLINK GATE IN — GND

PIO #3 : J406/J407

SYNC TO OTHER CALL LIGHT OPTION BOARD

J1805 — MASTER / SLAVE — S2

+5 — R1815 22K — W1

U1808 — R1807 2M — R1808 390K — D1802 IN914 — R1806 4.7M — C1806 .1/50

R1809 22K — W6 — U1810

W2 CUTTABLE TRACE — W3

U1810 — R1814 22K — W4

C1811 .0033 NP0 ±5%, C1813 .047/100, C1814 1/35 TANT, C1812 .1/50 — R1811 5K TRIM CERMET — R1812 12.7K ±1% — U1801 NE 567 N — C1815 680pF — R1871A 22K

C1821 .0033 NP0 ±5%, C1823 .047/100, C1824 1/35 TANT, C1822 .1/50 — R1821 5K TRIM CERMET — R1822 12.7K ±1% — U1802 NE 567 N — C1825 680pF — R1871C 22K

C1831 .0033 NP0 ±5%, C1833 .047/100, C1834 1/35 TANT, C1832 .1/50 — R1831 5K TRIM CERMET — R1832 12.7K ±1% — U1803 NE 567 N — C1835 680pF — R1871G 22K

C1841 .0033 NP0 ±5%, C1843 .047/100, C1844 1/35 TANT, C1842 .1/50 — R1841 5K TRIM CERMET — R1842 12.7K ±1% — U1804 NE 567 N — C1845 680pF — R1871B 22K

C1851 .0033 NP0 ±5%, C1853 .047/100, C1854 1/35 TANT, C1852 .1/50 — R1851 5K TRIM CERMET — R1852 12.7K ±1% — U1805 NE 567 N — C1855 680pF — R1871D 22K

C1861 .0033 NP0 ±5%, C1863 .047/100, C1864 1/35 TANT, C1862 .1/50 — R1861 5K TRIM CERMET — R1862 12.7K ±1% — U1806 NE 567 N — C1865 680pF — R1871F 22K

D1801 IN4001 — R1870 3.3Ω 1/8W

TO PAGE 6 J618/J619

J1802

U1811

J1801

J1806

TO J127 PAGE 16

GND — CALL LIGHT RX KEY 1/7 — CALL LIGHT RX KEY 2/8 — CALL LIGHT RX KEY 3/9 — CALL LIGHT RX KEY 4/10 — CALL LIGHT RX KEY 5/11 — CALL LIGHT RX KEY 6/12 — BLINK GATE OUT — CALL LIGHT BOARD DETECT — GND

PIO #3 : J403/J404

+5 — U1808 4001B — C1807 .1/50; U1809 4001B — C1808 .1/50; U1810 4001B — C1809 .1/50; U1811 80C95 OR 80C97 — C1810 .1/50

U1808

J1805 SYNC J1805

CALL LIGHTS 1-6 — PIO 3, PIO 3, PAGE 6, PAGE 8

CALL LIGHTS 7-12 — PIO 3, PIO 3, PAGE 6, PAGE 9

USED ON THIS PAGE: C1801-C1816, C1821-C1824, C1831-C1836, C1841-C1846, C1851-C1856, C1861-C1866, D1801, DS1801, U1801-U1806 R1801-R1805, R1807-R1809, R1811-R1815, R1821-R1823, R1831-R1833, R1841-R1843, R1851-R1853, R1861-R1863, R1870, R1871A-F R1810A-R1810G, U1807-U1811

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± — DECIMALS .XX ± — .XXX ± — ANGLES ± —
MATERIAL —
FINISH —
DO NOT SCALE DRAWING

CONTRACT NO. SERIES 800

APPROVALS	DATE
DRAWN Stan Hubler	
CHECKED	
ISSUED	

RTS SYSTEMS BURBANK, CALIFORNIA

SCHEMATIC DIAGRAM
MODEL 802, 802A MASTER STATION
(CALL LIGHT OPTION BOARD)

SIZE D | FSCM NO. 60572 | DWG. NO. SD 3000 | REV. H

SCALE NONE | SHEET 18 OF 26

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	UPDATED	10-6-82	
	B	REVISED PER ECO # 832 mez	4-6-83	
	C	REVISED PER ECO # 927 mez	4-27-83	
	D	REVISED PER ECO # 954 mez	5-16-83	
	E	REVISED PER ECO # 997 mez	6-14-83	
	F	REVISED PER ECO # 1113 LB	10-11-83	
	H	REVISED PER ECO # 1428	2-19-85	
	J	REVISED PER ECO # 1581 LB	5-27-86	
	K	ADDED INTERSHEET REFERENCES FOR CLARITY. SEE ECO # 1632 FOR COMPLETE LIST OF ADDITIONS / CHANGES. ADDED J160 AND MSE	7-10-86	
	L	PER ECO # 2391	2-10-87	

(REAR PANEL)

TB1 RELAY 1 (NO C NC) | TB2 RELAY 2 (NO C NC) | TB3 RELAY 3 (NO C NC) | TB4 RELAY 4 (NO C NC) | TB5 RELAY 5 (NO C NC) | TB6 RELAY 6 (NO C NC) | TB7 MIC SW (LO HI) | TB8 VCP CONN. (1 2 3 4 5) | TB9 EXT MIC (LO HI) HDST PHONE (C L R) | TB10 EXT MIC (SH LO HI V+) | TB11 INPUT PGM 1 (SH LO HI) | TB12 INPUT PGM 2 (SH LO HI)

MOTHER BOARD

DIGITAL GROUND

J5-6 REF. TO PIO #2 J404

MSE TO J3-1 SHEET 5

MOTHER BOARD

K1 K2 K3 K4 K5 K6 (12 C 1 / NO NC)

D10 D11 D12 D13 D14 D15 (2 / 11)

+12

④ TERMINAL ARRANGEMENT/ INTERNAL CONNECTIONS: K1-K6 (BOTTOM VIEW)

J162 (6 7 8 9 5 4)

J411 (6 7 8 9 5 4)

PIO #1 BOARD

J160 P160 — J102 ANCILLARY 50 PIN MALE (REAR PANEL)

J161 P161 — J102 ANCILLARY 50 PIN MALE (REAR PANEL)

SQUAWK LO
SQUAWK HI
HI
LO
HI
LO

T615 T616

T271 BILAT 13 IFB 1 (SHEET 8) (ZONE B6)
T281 BILAT 14 IFB 2 (ZONE A3)

TO J4-9 SHEET 5 ZONE D4

TO TB8-1 SHEET 23 ZONE C4

P614

TO J614 (SEE SHEET 6) ZONE B8 & B4

TO TSD

+12 +6

J60 (10 9 8 7 6 5 4 3 2 1)

J50 (1 2 3 4 5 6 7 8 9 10)

TO ADJUSTMENT BOARD J706 SHEET 7 ZONE A3

TO TALK OPTION BOARD AND SQUAWK OPTION BOARD

④ K1-K6 ARE 12 VOLT, SPDT. OMRON P/N G2E-182P-H-DC12, RTS P/N 1701-0009-00.

3. ALL DIODES ARE IN4004

2. CAPACITANCE VALUES ARE SHOWN MICROFARADS/VOLTS.

1. ALL RESISTORS ARE ± 5%, 1/4 W, CARBON FILM.

NOTES: UNLESS OTHERWISE SPECIFIED

USED ON THIS PAGE: D10-D15, R161, R162, Q7, Q8, K1-K6, T615, T616, T271, T281, TB1-TB12, J102, J50, J160, J161, J404, J409

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE: FRACTIONS ± DECIMALS .XX ± .XXX ± ANGLES ±

MATERIAL

FINISH

DO NOT SCALE DRAWING

CONTRACT NO. SERIES 800

APPROVALS	DATE
DRAWN S. DUEBBER	7/22/82
CHECKED	
ISSUED	

RTS SYSTEMS BURBANK, CALIFORNIA

SCHEMATIC DIAGRAM, MASTER STATION MODEL 802, 802A RELAYS, RELAY DRIVERS, ANCILLARY CONNECTOR

SIZE D | FSCM NO. 60572 | DWG. NO. SD 3000 | REV. L

SCALE | SHEET 19 OF 26

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	REVISED	10-11-82	
	B	ADDED E301-E306 DES & NOTE 1 B.MAES	11-17-82	
	C	REV. PER ECO #9271924 B.MAES	4-26-83	
	D	REV PER ECO #910 B.MAES	5-25-83	
	E	ADDED E35, E36, RELATED CUTABLE TRACE & NOTE 2 B.MAES	6-23-83	
	F	ADDED GLOBAL RESET TALLY & KEY PINS 6 & 9, J223 GM	10-9-84	
	G	ADDED INTERSHEET REFERENCES FOR CLARITY. SEE ECO #1632 FOR COMPLETE LIST OF ADDITIONS / CHANGES	7-10-86	
	H	PER ECO # 2391	2-10-89	

(REAR PANEL) CABLE ASS'Y
LINE CONNECTOR
J101

MOTHER BOARD (SHEET 8)
P210 / J210

2-WIRE: SEND/RECEIVE
4-WIRE: SEND

CH.1	1	BALANCED AUDIO, CH 1	1	T 211
	26	BALANCED AUDIO, CH 1	2	
CH.2	2	BALANCED AUDIO, CH 2	3	T 221
	27	BALANCED AUDIO, CH 2	4	
CH.3	3	BALANCED AUDIO, CH 3	5	T 231
	28	BALANCED AUDIO, CH 3	6	
CH.4	4	BALANCED AUDIO, CH 4	7	T 241
	29	BALANCED AUDIO, CH 4	8	
CH.5	5	BALANCED AUDIO, CH 5	9	T 251
	30	BALANCED AUDIO, CH 5	10	
CH.6	6	BALANCED AUDIO, CH 6	11	T 261
	31	BALANCED AUDIO, CH 6	12	
			13	
			14	
CH.7	7	BALANCED AUDIO, CH 7		
	32	BALANCED AUDIO, CH 7		
CH.8	8	BALANCED AUDIO, CH 8		
	33	BALANCED AUDIO, CH 8		
CH.9	9	BALANCED AUDIO, CH 9		
	34	BALANCED AUDIO, CH 9		
CH.10	10	BALANCED AUDIO, CH 10		
	35	BALANCED AUDIO, CH 10		
CH.11	11	BALANCED AUDIO, CH 11		
	36	BALANCED AUDIO, CH 11		
CH.12	12	BALANCED AUDIO, CH 12		
	37	BALANCED AUDIO, CH 12		

4-WIRE CONNECTOR
⚠1 J105 (REF)
SHEET 22
13 38 14 39 15 40 16 41 17 42 18 43

P310 / J310
TALK/SQUAWK OPTION P.C.BD. (SHEETS 9 & 10)
T 311, T 321, T 331, T 341, T 351, T 361
N.C.
N.C.

MOTHER BOARD
P220 / J220 / J221
P221 CABLE P2410 / J410
PIO BD #2 (SHEET 13)
P223 / J223
P2411 / J411

KEYING

CH.1	13	RETURN
	38	KEY 1
CH.2	14	RETURN
	39	KEY 2
CH.3	15	RETURN
	40	KEY 3
CH.4	16	RETURN
	41	KEY 4
CH.5	17	RETURN
	42	KEY 5
CH.6	18	RETURN
	43	KEY 6
CH.7	19	RETURN
	44	KEY 7
CH.8	20	RETURN
	45	KEY 8
CH.9	21	RETURN
	46	KEY 9
CH.10	22	RETURN
	47	KEY 10
CH.11	23	RETURN
	48	KEY 11
CH.12	24	RETURN
	49	KEY 12
PROGRAM	25	PGM HI
	50	PGM LO

E33, E34, E35, ⚠2 E36
CHIME LISTEN ENABLE (LH2-11) SHEET 5 ZONE D6
CHIME TALK ENABLE SHEET 17 ZONE B2
GLOBAL RESET TALLY
GLOBAL RESET KEY
(SEE SHEET 23 ZONE A4)

4-WIRE CONNECTOR
⚠1 J105 (REF) SHEET 22
19 44 20 45 21 46 22 47 23 48 24 49 25 50

⚠2 CUT TRACES BETWEEN E33 & E35 AND BETWEEN E34 & E36 FOR AUX PGM. SEE SHT. 6 ZONE A8.
⚠1 THIS CONNECTION USED ONLY WHEN 4-WIRE OPTION IS INSTALLED

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± DECIMALS .XX ± .XXX ± ANGLES ±
MATERIAL
FINISH
DO NOT SCALE DRAWING

CONTRACT NO. SERIES 800

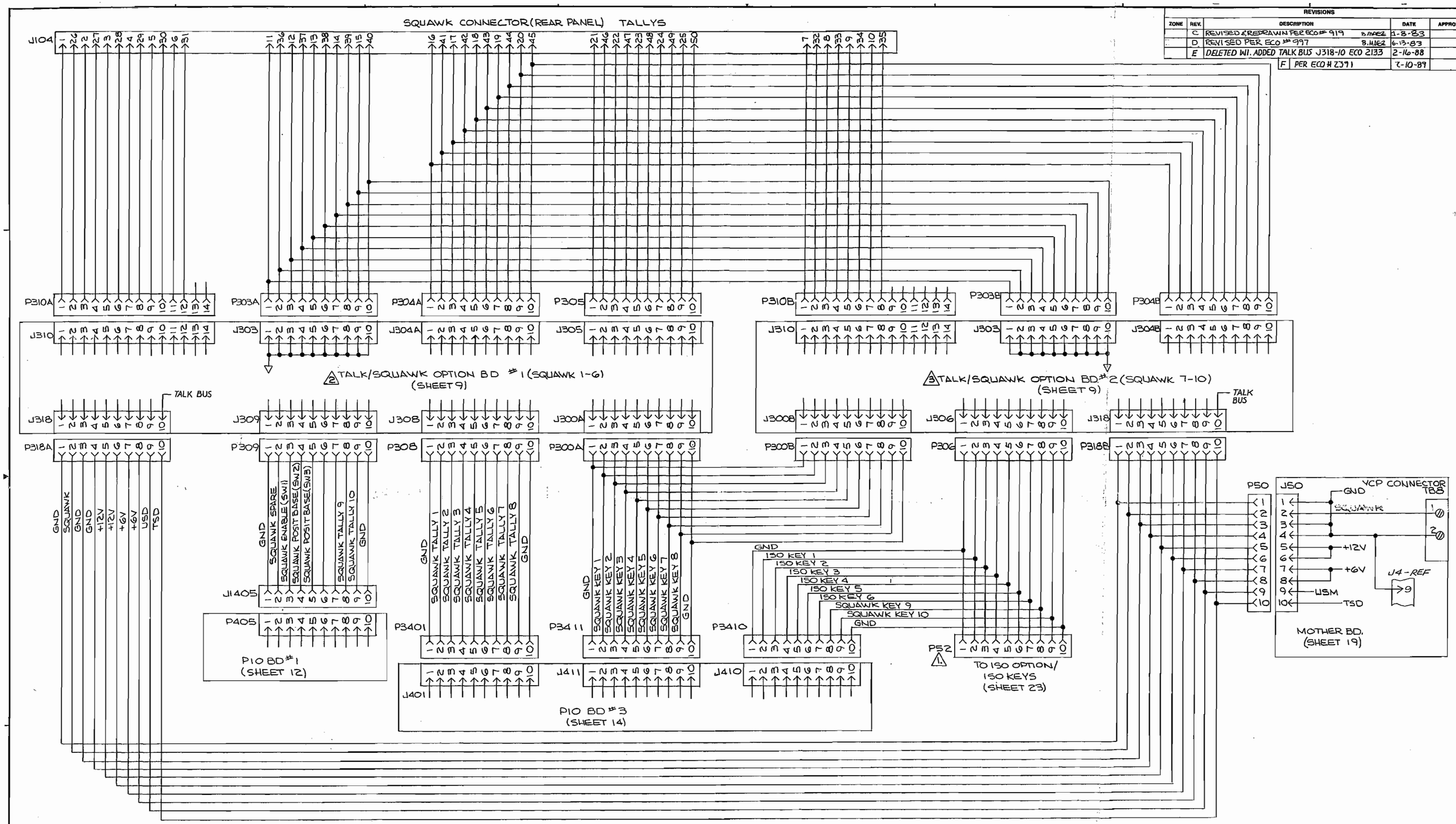
APPROVALS	DATE
DRAWN S.DUEBBER	7/24/82
CHECKED	
ISSUED	

RTS SYSTEMS BURBANK, CALIFORNIA

SCHEMATIC DIAGRAM, MODEL 802,802A, MASTER STATION, (LINE IN/OUT CONNECTIONS)

SIZE D | FSCM NO. 60572 | DWG. NO. SD 3000 | REV. H
SCALE — | SHEET 20 OF 26

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	C	REVISED & REDRAWN PER ECO # 919 B.MAEZ	1-8-83	
	D	REVISED PER ECO # 997 B.MAEZ	6-13-83	
	E	DELETED W1. ADDED TALK BUS J318-10 ECO 2133	2-16-88	
	F	PER ECO # 2391	7-10-89	



NOTE: (UNLESS OTHERWISE SPECIFIED).

1. P52 IS ADDED TO CABLE ONLY WHEN BOTH 150 AND SQUAWK OPTIONS ARE INCLUDED
2. THE FOLLOWING CONNECTORS ARE NOT USED ON TALK/SQUAWK BD #1: J300B, J304B, J306, J316, J317.
3. THE FOLLOWING CONNECTORS ARE NOT USED ON TALK/SQUAWK BD. #2: J300A, J304A, J305, J308, J309, J316, J317

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± DECIMALS .XX ± .XXX ± ANGLES ±
MATERIAL
FINISH
DO NOT SCALE DRAWING

CONTRACT NO. SERIES 800

APPROVALS	DATE
DRAWN B.MAEZ	4-8-83
CHECKED	
ISSUED	

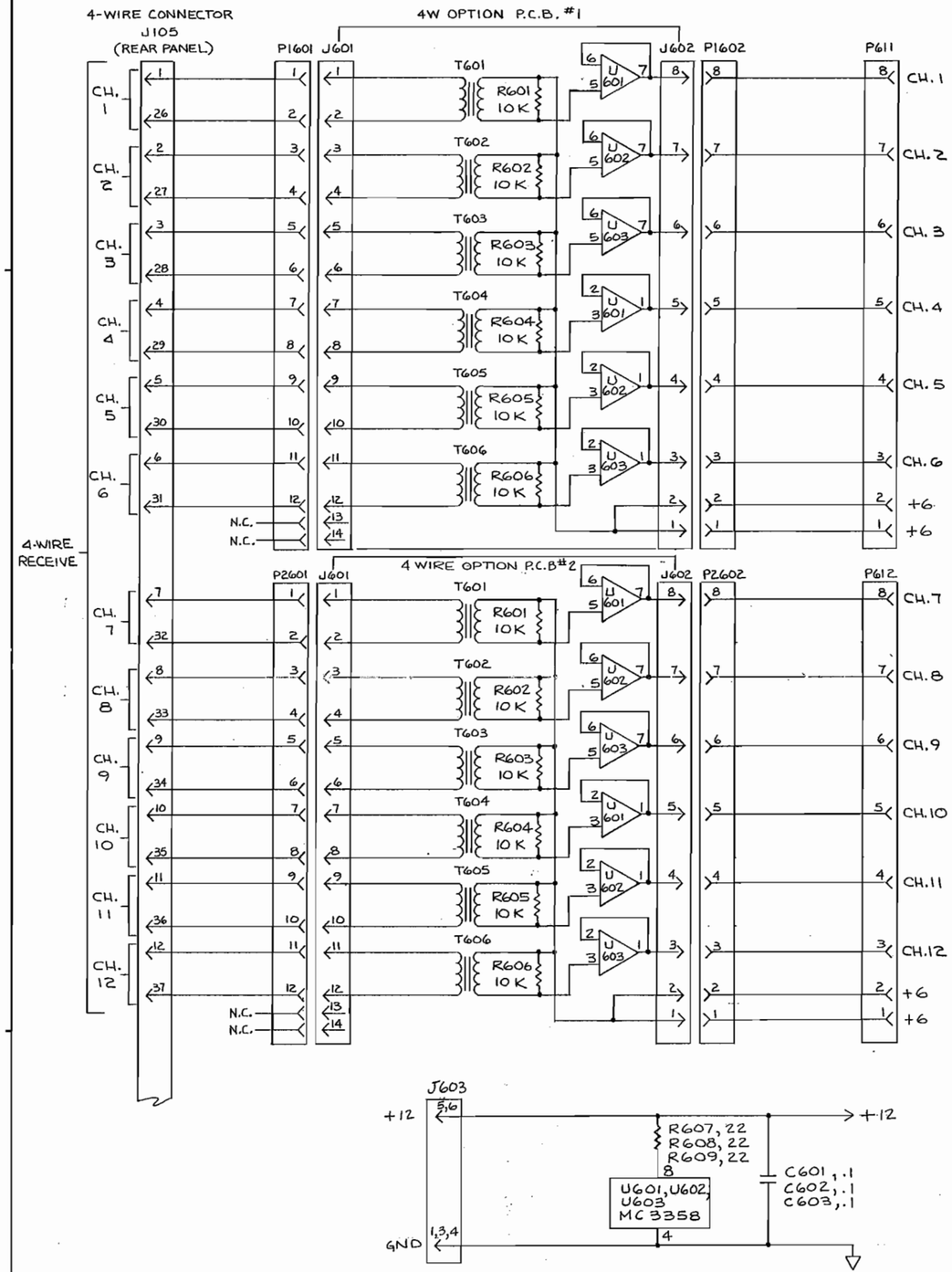
RTS SYSTEMS BURBANK, CALIFORNIA

SCHEMATIC DIAGRAM - SQUAWK CONNECTIONS, MASTER STATION, MODEL 802, 802A

SIZE D | FSCM NO. 60572 | DWG. NO. SD3000 | REV. F

SCALE — | SHEET 21 of 26

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	REVISED & REDRAWN	10-2-82	
	B	ADDED NOTE 3 & UPDATED	11-23-82	
	C	REVISED PER ECO# 910 MARR	5-25-83	
	D	ADDED U601 -U603 AND RELATED INFO. RB	5/13/85	
	E	PER ECO # 2391	2-10-89	



4. SEE SHEET 20 FOR HOOKUP OF J105 PINS 13-25, 38-50.
3. PAGE 22 IS NOT VALID FOR HUGHES 362470-600
2. T601 - T606 ARE 10K : 10K TRANSFORMERS. 42TM018 OR EQUIV.
1. ALL RESISTORS ARE 1/4W, 5% CARBON FILM
NOTES: UNLESS OTHERWISE SPECIFIED

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± DECIMALS .XX ± .XXX ± ANGLES ±
MATERIAL
FINISH
DO NOT SCALE DRAWING

CONTRACT NO. SERIES 800

APPROVALS	DATE
DRAWN S. DUEBBER	10-2-82
CHECKED	
ISSUED	

RTS SYSTEMS BURBANK, CALIFORNIA

SCHEMATIC DIAGRAM
MASTER STATION, MODEL 802, 802A,
4-WIRE OPTION

SIZE D | FSCM NO. 60572 | DWG. NO. SD 3000 | REV. E
SCALE | SHEET 22 OF 26

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	REVISED	10-11-82	
	B	REVISED PER ECO# 971 MAEZ	5-11-83	
	C	REVISED PER ECO# 975 MAEZ	5-17-83	
	D	REVISED PER ECO # 1125 MV	11-4-83	
	E	ADDED D04, D07 TO J53 (REF), ADDED KEYS 9 & 10 ON P53 GM	10-9-84	
	F	ADDED INTERSHEET REFERENCES FOR CLARITY. SEE ECO # 1632 FOR COMPLETE LIST OF ADDITIONS / CHANGES, ADDED J5-8	7-10-86	
	G	PER ECO# 2372	1-3-89	
	H	PER ECO # 2391	1-10-89	

ISO CONNECTOR
J106
50 PIN MALE
(REAR PANEL)

P511 — PRIORITY 1
- ISO KEY 1 (PRIORITY 1) — 2, 3, 4, 5
- ISO KEY 6
- AUDIO HIGH
- AUDIO LO
- GND
- GND (PRIORITY 1)

P512 — PRIORITY 2
- ISO KEY 1 (PRIORITY 2) — 2, 3, 4, 5
- ISO KEY 6
- AUDIO HIGH
- AUDIO LO
- GND
- GND (PRIORITY 2)

P513 — PRIORITY 3
- ISO KEY 1 (PRIORITY 3) — 2, 3, 4, 5
- ISO KEY 6
- AUDIO HIGH
- AUDIO LO
- GND
- GND (PRIORITY 3)

P514 — ALTERNATE TALLY

P53
- ISOTALLY 1 — 2, 3, 4, 5
- ISOTALLY 6
- GND
- GND
- GLOBAL RESET TALLY
- GLOBAL RESET KEY

J51 MOTHER BOARD J52

P52 P3410 J410 P10 #3

AUDIO HI
AUDIO LO
T 291
(SHEET 8 ZONE B1)

VCP CONN. REAR PNL TB8
- 5
- 4
- TO J404 SHEET 13 ISO CONTROL INPUT J5 (8)
- 3
- GROUND
- 2
- 1

SQUAWK AUDIO INPUT HI (SHEET 19 ZONE B4)

D56, D53, D55, D52, D54, D51

J53 J54 P54 P3405 J405 P10 #3

D60, D57, D58, D61, D59, D62

D63, D64

TO J223-6 (D04, J2411-6)
TO J223-9 (D07, J2411-9)
SEE SHEET 20 ZONE A4

1. ALL DIODES ARE 1 AMP, 30V SCHOTTKY DIODES; FOR EXAMPLE: INTERNATIONAL RECTIFIER 11DQ03.

NOTES: UNLESS OTHERWISE SPECIFIED

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± DECIMALS .XX ± .XXX ± ANGLES ±
MATERIAL
FINISH
DO NOT SCALE DRAWING

CONTRACT NO.

APPROVALS	DATE
DRAWN B.MAEZ	7-21-82
CHECKED	
ISSUED	

RTS SYSTEMS BURBANK, CALIFORNIA

SCHEMATIC DIAGRAM, MASTER STATION MODEL 802, 802A, ISO CONNECTOR

SIZE	FSCM NO.	DWG. NO.	REV.
D	60572	SD3000	H

SCALE — SHEET 23 OF 26

F	PER ECO #2391	2-10-89	

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	B	REVD REDRAWN PER ECO #927		
	C	REV PER ECO #1016 MAE2	6-14-83	
	D	REVISED PER ECO 1190 GM	2-23-84	
	E	CHANGED R301 FROM 200Ω TO 390Ω ECO #1754 RN	11-25-86	

TO 1ST IFB CENTRAL ELECTRONICS UNIT, MODEL 4010

J103
IFB CONNECTOR #1
(REAR PANEL)

P1314A PRIORITY 1 · P1314B PRIORITY 2 · P1314C PRIORITY 3 · P1314D PRIORITY 4

P1315: TALLY 1, TALLY 2, TALLY 3, TALLY 4, TALLY 5, TALLY 6, COMMON, COMMON, COMMON, COMMON

J315 IS CONNECTED TO 1 OF 4 PRIORITY PLUGS

IFB OPTION P.C.B. #1 (IFB 1-4, SA1) AS3000-2

2 S301 IFB SELECT A B
BILAT 13 · BILAT 14
R301 3 390Ω

D305 D304 D303 D302 D301 D306 D307 D308 D309 D310

OE306 OE305 OE307 OE304 OE302 OE303 OE301

J310 J311 J312 J313

P1310 P1311 P1312 P1313

1

J102 ANCILLARY CONNECTOR (SHEET 19) REAR PANEL

4 P102 TERMINATION PLUG
17 42 18 43
R1001 200Ω · R1002 200Ω

P1312: GROUND, IFB KEY #1, IFB KEY #2, IFB KEY #3, IFB KEY #4, SA1, SPARE, SPARE, SPARE, GROUND

P3408 J408

P1313: GROUND, IFB TALLY #1, IFB TALLY #2, IFB TALLY #3, IFB TALLY #4, SA1, SPARE, SPARE, SPARE, GROUND

P3402 J402

P10 P.C.B. #3 (SHEET 14)

TO 2ND IFB CENTRAL ELECTRONICS UNIT MODEL 4010

J10X
2ND IFB CONNECTOR
(REAR PANEL)

P2314A PRIORITY 1 · P2314B PRIORITY 2 · P2314C PRIORITY 3 · P2314D PRIORITY 4

P2315: TALLY 1, TALLY 2, TALLY 3, TALLY 4, TALLY 5, TALLY 6, COMMON, COMMON, COMMON, COMMON

J3115 CONNECTED TO 1 OF 4 PRIORITY PLUGS

IFB OPTION P.C.B. #2 (IFB 5-8, SA2) AS3000-2

2 S301 IFB SELECT A B
BILAT 13 · BILAT 14
R301 3 390Ω
W2

D305 D304 D303 D302 D301 D306 D307 D308 D309 D310

N.C. N.C. N.C. N.C.

J310 J311 J312 J313

P2310 P2311 P2312 P2313

1

P2312: GROUND, IFB KEY #5, IFB KEY #6, IFB KEY #7, IFB KEY #8, SA2, SPARE, SPARE, SPARE, GROUND

P3409 J409

P2313: GROUND, IFB TALLY #5, IFB TALLY #6, IFB TALLY #7, IFB TALLY #8, SA2, SPARE, SPARE, SPARE, GROUND

P2405 J405

P10 P.C.B. #3 (SHEET 14)

P10 P.C.B. #2 (SHEET 13)

P161: PGM 1 LO, PGM 1 HI, PGM 2 LO, PGM 2 HI, SQUAWK LO, SQUAWK HI, BILAT 13 HI, BILAT 13 LO, BILAT 14 HI, BILAT 14 LO

FROM J161 MOTHER BD., BILATS 13&14 (SHEETS 8&19)

4 802 UNITS WITH IFB EMULATE OPTIONS 4001 OR 4002 THAT DO NOT HAVE R301 INSTALLED, (UNITS BUILT BEFORE 3-1-84), SHOULD HAVE BILATERAL CURRENT SOURCES 13 AND 14 TERMINATED WITH P102.

3 IF MORE THAN ONE 802 WITH IFB EMULATE OPTIONS 4001 OR 4002 IN A SYSTEM HAS BEEN SET TO THE SAME PRIORITY, R301 MUST BE CLIPPED FROM ALL BUT ONE UNIT. THIS WILL PREVENT A LOSS IN SIGNAL GAIN THROUGH DOUBLE TERMINATION.

2 SET SLIDE SWITCH S301 TO BILAT 13 POSITION ON IFB OPTION P.C.B. #1; SET S301 TO BILAT 14 POSITION ON IFB OPTION P.C.B. #2

1 THIS DRAWING SHOWS THE IFB CONFIGURATION WHICH EMULATES A MODEL 4002 IFB CONTROL STATION. FOR UNITS WHICH EMULATE A MODEL 4001 IFB CONTROL STATION: a) DISREGARD CIRCUITRY DEALING WITH IFB OPTION P.C.B. #2; b) J311 OF IFB OPTION P.C.B. #1 CONNECTS TO J161 ON THE MOTHER BD. (SHEETS 8&19) INSTEAD OF J311 OF IFB OPTION P.C.B. #2.

NOTES: (UNLESS OTHERWISE SPECIFIED)

AS3000-2	802A
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± · DECIMALS .XX ± .XXX ± · ANGLES ±
MATERIAL
FINISH
DO NOT SCALE DRAWING

CONTRACT NO. SERIES 800

APPROVALS	DATE
DRAWN B.MAES	4-27-83
CHECKED	
ISSUED	

RTS SYSTEMS BURBANK, CALIFORNIA

SCHEMATIC DIAGRAM, MODEL 802, 802A, IFB OPTION

SIZE D · FSCM NO. 60572 · DWG. NO. SD3000 · REV. F
SCALE — · SHEET 24 OF 210

BOARD NAME	SUBCATEGORY	ARTWORK DASH #	REFERENCE DESIGNATION #'S	SD 3000 SCHEMATIC SHEET #
MOTHER	MIC. PRE., HEADPHONE & SPEAKER AMPLIFIERS & MISC.	-1	000 TO 124	4, 5
	LISTEN SWITCHING	-1	611 TO 630	6
	TALK, SW BILATERAL CS CH 1-6, CH 13, 14, 15	-1	200 TO 299	8
	POWER SUPPLY	-1	125 TO 149	16
TALK/SQUAWK OPTION	P.C.B. SCHEMATIC	-3	300 TO 399	9
	TALK CONNECTIONS			10
	SQUAWK CONNECTIONS			21
I/O PIO #1	SWITCHBOARD DRIVER	-4	400 TO 499	12
I/O PIO #2	INTERNAL DRIVER	-4	400 TO 499	13
I/O PIO #3	EXTERNAL DRIVER	-4	400 TO 499	14
CPU		-5	500 TO 599	15
4W OPTION 1	FOUR WIRE TRANSFORMERS CH 1-6	-6	600 TO 606	22
4W OPTION 2	FOUR WIRE TRANSFORMERS CH 7-12	-6	600 TO 606	22
ADJUSTMENT		-7	700 TO 799	7
SWITCHBOARD		-9	900 TO 999	11
CALL LIGHT OPTION		-18	1800 TO 1899	18
ANALOG BLOCK SCHEMATIC				1, 2
DIGITAL BLOCK SCHEMATIC				3
MOTHER	CHIME OPTION	-1	150 TO 159	17
	INTERCONNECT/RELAYS		160 TO 169	19
	LINE CONNECTOR		170 TO 179	20
	SQUAWK CONNECTOR			21
	FOUR WIRE CONNECTOR			22
	ISO CONNECTOR			23
IFB OPTION		-2		24
	INDEX			25

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	REV PER ECO #927 B.MAEZ	4-27-83	
	B	REV PER ECO 1123 DM	11-4-83	
	C	PER ECO # 2391	2-10-89	

MODEL 802

REAR PANEL TERMINAL BLOCK CONNECTIONS

TB 1 - RELAY 1
TB 2 - RELAY 2
TB 3 - RELAY 3
TB 4 - RELAY 4
TB 5 - RELAY 5
TB 6 - RELAY 6
TB 7 - EXT MIC SW
TB 8 - VCP CONN.
TB 9 - EXT HDST
TB10 - EXT MIC IN
TB11 - PGM 1 IN
TB12 - PGM 2 IN
TB13 - MIC OUTPUT 1
TB14 - MIC OUTPUT 2
TB15 - EXT SPKR
TB16 - POWER INPUT

NEXT ASSY	USED ON	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS ± DECIMALS .XX ± .XXX ± ANGLES ±	CONTRACT NO. SERIES 800
APPLICATION		MATERIAL	APPROVALS / DATE
		FINISH	DRAWN S.DUEBBER 7/27/82
		DO NOT SCALE DRAWING	CHECKED
			ISSUED

RTS SYSTEMS BURBANK, CALIFORNIA

SCHEMATIC DIAGRAM, MASTER STATION, MODEL 802, 802A, INDEX

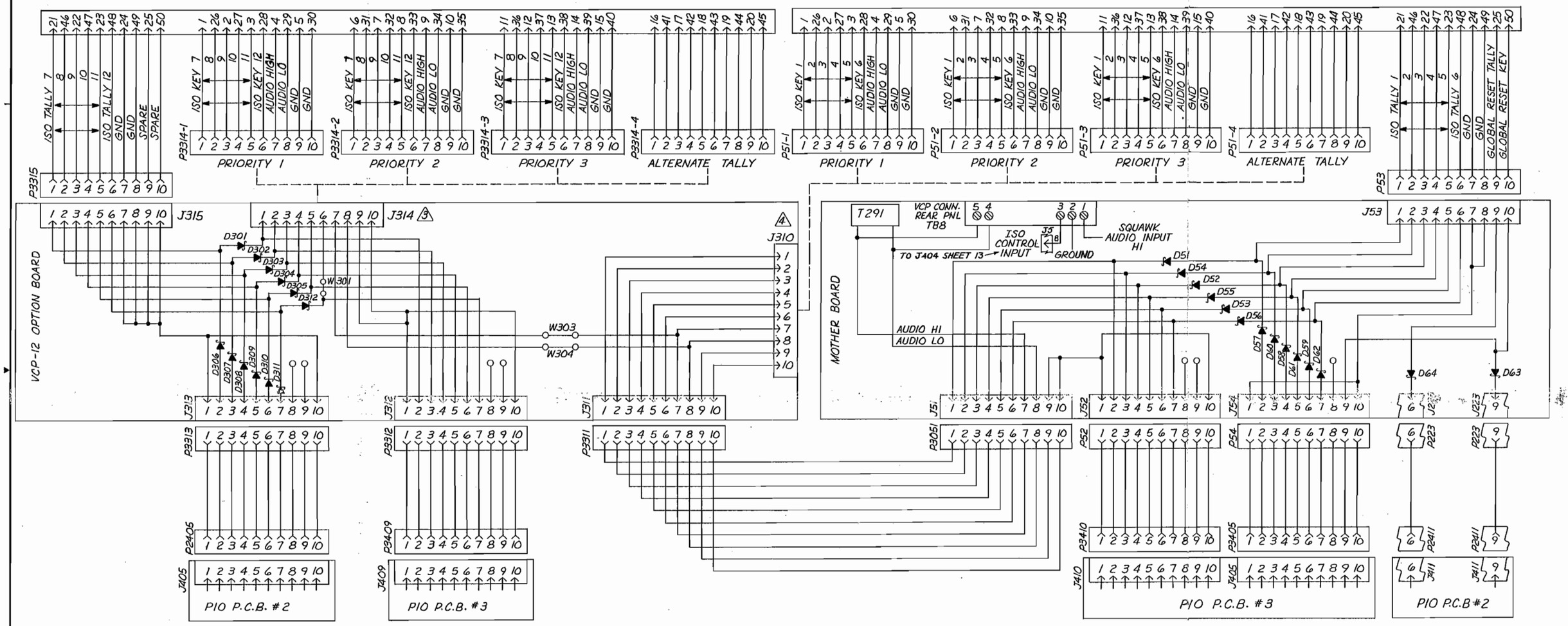
SIZE	FSCM NO.	DWG. NO.	REV.
D	60572	SD3000	C

SCALE — SHEET 25 OF 26

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	ADDED INTERSHEET REFERENCE FOR CLARITY. SEE ECO # 1632 FOR COMPLETE LIST OF ADDITIONS / CHANGES. ADDED J5-8	7-10-86	
	B	PER ECO # 2391	2-10-89	

J103
ISO #2 CONNECTOR
50 PIN MALE
(REAR PANEL)

J106
ISO #1 CONNECTOR
50 PIN MALE
(REAR PANEL)



4 J310 IS CONNECTED TO 1 OF 4 PRIORITY PLUGS: P51-1, P51-2, P51-3 OR P51-4.

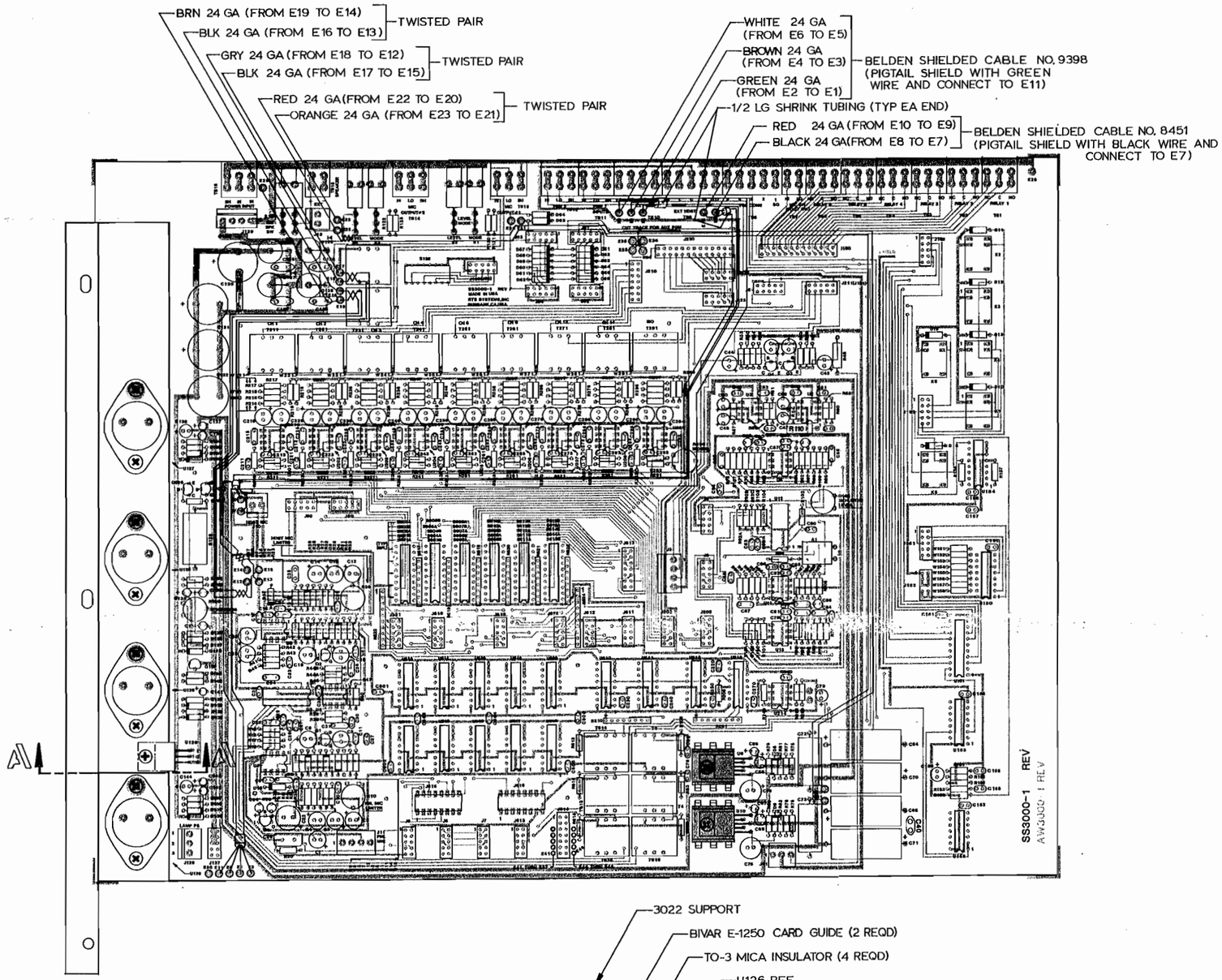
3 J314 IS CONNECTED TO 1 OF 4 PRIORITY PLUGS: P3314-1, P3314-2, P3314-3 OR P3314-4.

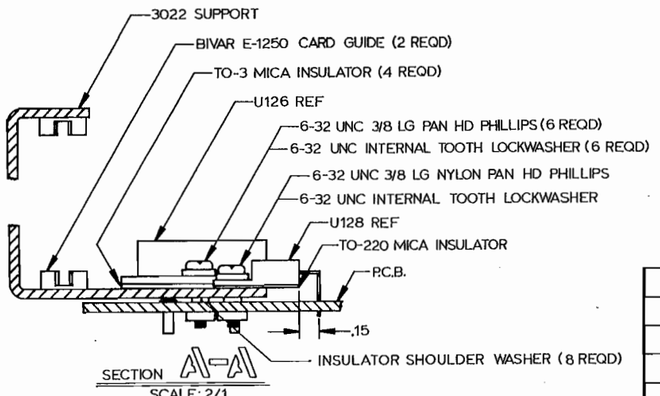
2. THE VCP-12A OPTION HAS BEEN UPDATED FROM THE VCP-12 OPTION TO INCLUDE THE GLOBAL RESET FUNCTION.

1. ALL DIODES ARE 1AMP, 30V SCHOTTKY DIODES, FOR EXAMPLE: INTERNATIONAL RECTIFIER 11DQ03.

NOTES: UNLESS OTHERWISE SPECIFIED.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS ± DECIMALS .XX ± .XXX ± ANGLES °	CONTRACT NO.	RTS SYSTEMS BURBANK, CALIFORNIA	
	APPROVALS / DATE	SCHEMATIC DIAGRAM MASTER STATION, MODEL 802, 802A ISO OPTION, VCP-12A	
MATERIAL	DRAWN R. PEKSON 12-6-84		
FINISH	CHECKED		
DO NOT SCALE DRAWING	ISSUED	SIZE D FSCM NO. 60572 DWG. NO. SD3000 REV. B	
		SCALE	SHEET 26 OF 26





SECTION A-A
SCALE: 2/1

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	AA	REDRAWN TO REFLECT CURRENT ASSEMBLY PROCEDURES	5.2.86	
	AB	CHNG TRACES (NEAR C129) TO MATCH AW REV ECO1496 RB	12/1/86	
	AC	CHNG SHOULDER WASHER CALLOUT IN SECT A-A WAS: KEYSTONE 3054. ECO1815 RB	3/10/87	
	AD	ADDED R108 PER ECO 1938	9-30-87	
	AE	REVISED PER ECO # 2372	1-6-89	

AS3104	802
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± DECIMALS .XX ± .XXX ± ANGLES ±
MATERIAL
FINISH
DO NOT SCALE DRAWING

CONTRACT NO.

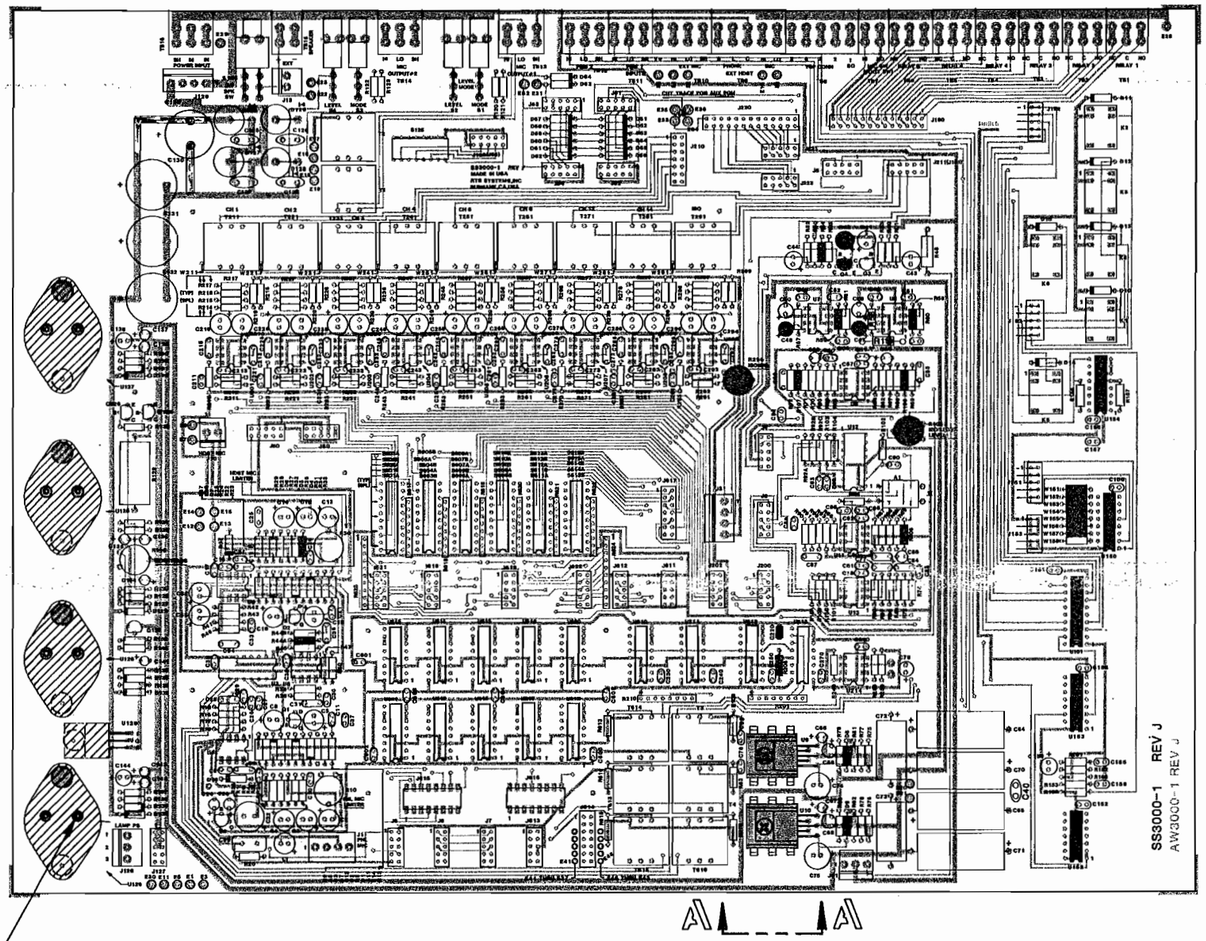
APPROVALS	DATE
DRAWN R.K.Booth	5/2/86
CHECKED	
ISSUED	

RTS SYSTEMS BURBANK, CALIFORNIA

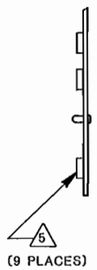
ASSY-PCB MOTHERBOARD
MODEL 802

SIZE D | FSCM NO. 60572 | DWG. NO. AS3000-01 | REV. AE
SCALE 1/1 | SHEET 1

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	ADDED PEM NUTS,NOTES 5 & 6,ECO 1695	10-30-86	
	B	CHNG TRACES (NEAR C171) TO MATCH A W ZEV ECO 1696 RB	12/1/86	
	C	PER ECO # 2372	1-3-89	

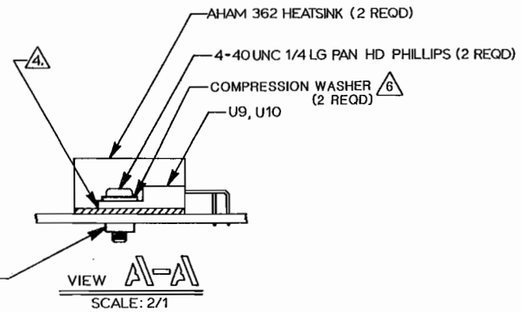


A1 — A1



5
(9 PLACES)

AMPHENOL 1-38 758-0
RECEPTACLE (8 REQD)



VIEW A1-A1
SCALE: 2/1

NOTES:

1. PARTS LISTED BELOW ARE SHOWN FILLED IN OR CROSSHATCHED AND ARE NOT INSTALLED AT THIS LEVEL.

CAPACITORS "C"	RESISTORS "R"	IC'S "U"	JUMPERS "W"
142 220 48 42 47	107 106 290 105 58 59 54 108 44A 23 208	154 128 125 126 127 129 150 151 152 153	151 THRU 157 211 221 231 241 251 261 271 281 291
TRANSISTORS "Q"	DIODES "D"		
4	8 9		

2. ALL PARTS LISTED IN NOTE 1. AND ALL E HOLES SHOULD BE MASKED OFF PRIOR TO SOLDERWAVE.
3. ALL IC'S AND SWITCHES SHOULD HAVE APPROPRIATE DIP SOCKETS.
4. APPLY THERMALLOY 251 THERMAL GREASE BETWEEN U9, U10 AND HEATSINK.
5. INSTALL PEM NUT KF2-632, RTS P/N 1007-0008-00 (9 PLACES)
6. APPLY TORQUE UNTIL COMPRESSION WASHER IS DEPRESSED TO HALF ITS ORIGINAL HEIGHT

AS3000-01			
NEXT ASSY	USED ON		
APPLICATION			

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± DECIMALS .XX ± .XXX ± ANGLES ±
MATERIAL
FINISH
DO NOT SCALE DRAWING

CONTRACT NO.

APPROVALS	DATE
DRAWN R.K. BOOTH	2/28/86
CHECKED	
ISSUED	

RTS SYSTEMS BURBANK, CALIFORNIA

ASSY-PCB MOTHERBOARD
MODEL 802

SIZE D | FSCM NO. 60572 | DWG. NO. AS 3000-A1 | REV. C
SCALE 1:1 | SHEET 1

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	REVISED PER ECO # 2222	5-12-88	
	B	REVISED PER ECO # 2359	12-12-88	
	C	REVISED PER ECO # 2391	1-23-89	
	D	REVISED PER ECO # 2406	2-17-89	

Y1 4.0 MHz

74HC04 U2

C3 1000pF

R2 1.0K

R5 1.0K

C6 0.1

CLK

U5 74HC74

CHM CLK

C32 0.1

NOT USED

N.C. N.C.

DATA BUS

B ADDRESS BUS

C7 1.0/35V TANT

C8 0.1

U3 Z80C (CPU)

R10 10Ω

C11 1.0/35V TANT

U6 74HC541

R7 100K

U20 74HC541

C5 10uF/16

R8 10K

R9 10Ω

C12 1.0/35V TANT

U7 74HC541

C14 0.1

27C256 (ROM) U10

C15 0.1

U11 (RAM)

C16 0.1

U12 (RAM)

C10 0.1

74HC541

74HC32 U8

J7

J1

POWER SUPPLY IN

C4 150/16V TANT

J8

LOOP THRU 1

J9

LOOP THRU 2

C29 150/16V TANT

C9 0.1

74HC139 1/2 U4

RAM SEL (8000H)

RAM 2 SEL (A000H)

DEV SEL (C000H)

PSEL (E000H)

C28 0.1

U1 74HC00

74HC04 U2

R11 10Ω

C13 1.0/35V TANT

74HC138 U9

DEV Ø

DEV 1

DEV 2

DEV 3

DEV 4

DEV 5

DEV 6

DEV 7

74HC139 1/2 U4

SI SEL

CT SEL

CHM SEL

N.C.

J4

INTERNAL PIO CTL

J5

EXPANSION PIO CTL

DEV SEL

C31 0.1

U8 74HC32

IN SEL

WR

RD

IORQ

INT

RST

WAIT

NMI

BUSRQ

MREQ

M1

4 U22 IS A PROGRAMMABLE SOUND GENERATOR. U22 IS INSTALLED ONLY IN UNITS WITH THE CHIME OPTION.

3. THE FOLLOWING ITEMS ARE NOT INSTALLED: U12, U17, U18, W1.

2. CAPACITANCE VALUES ARE SHOWN: MICROFARADS / VOLTS.

1. ALL RESISTORS ARE CARBON FILM, 1/4 WATT, ±5%.

NOTES: UNLESS OTHERWISE SPECIFIED

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS ± DECIMALS .XX ± .XXX ± ANGLES ±

MATERIAL

FINISH

DO NOT SCALE DRAWING

CONTRACT NO. SERIES 800

APPROVALS	DATE
DRAWN R. NEILSON	4-16-87
CHECKED	
ISSUED	

RTS SYSTEMS BURBANK, CALIFORNIA

SCHEMATIC DIAGRAM, CPU BOARD, MODEL 802, Z-80C VERSION

SIZE D | FSCM NO. 60572 | DWG. NO. SD 5336 | REV. D

SCALE | SHEET 1 OF 2

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
		SEE SHT 1		

DATA BUS

ADDRESS BUS

74HC541 U14 — DØ–D7 → DØ–D7 — R12–R19 10.Ω — J2 DATA OUTPUT PORT

DEV SEL

U13 Z84C30 (CTC) — CS0, CS1, CLK, M1, IORQ, RST, IEI, IEO, ZCTO1, ZCTO2, RD, CS, INTR

U16 Z84C40 (SIO) — B/A, C/D, CLK, M1, IORQ, RST, IEI, TxRx CA, TxRx CB, TxA, RxA, TxB, RxB, IEO, RD, CE, INTR

W1 HALF DUPLEX

U2

U17 75176 — Tx, Rx

U18 75176 — Tx, Rx, N.C.

R29 10K, R30 10.Ω, R31 10.Ω, R32 10.Ω, R33 10.Ω, R34 10K, R35 10K, R36 10K, R37 10K

D3 IN4148, D4 IN4148, D5 IN4148, D6 IN4148, D7 IN4148, D8 IN4148, D9 IN4148, D10 IN4148

J6 — Rs 232 Tx, Rs 232 Rx — TO J10T ON REAR PANEL

J11 — Rs 422 Rx +, Rs 422 Tx/Rx +, Rs 422 Rx −, Rs 422 Tx/Rx −

CHM CLK, CHM SEL, WR — U8, U1 (74HCØØ)

R38 10K

U21 74HC 573 — CLK

SN76496 U22 (CHIME OPTION) — CE, WE, READY

J10 — TO J152 ON MOTHER BOARD CHIME AUDIO OUTPUT

CT SEL, SI SEL, INTR, RST, RD

74HC541 U15 — DØ–D7 → DØ–D7 — R20–R27 10K — J3 DATA INPUT PORT

IN SEL

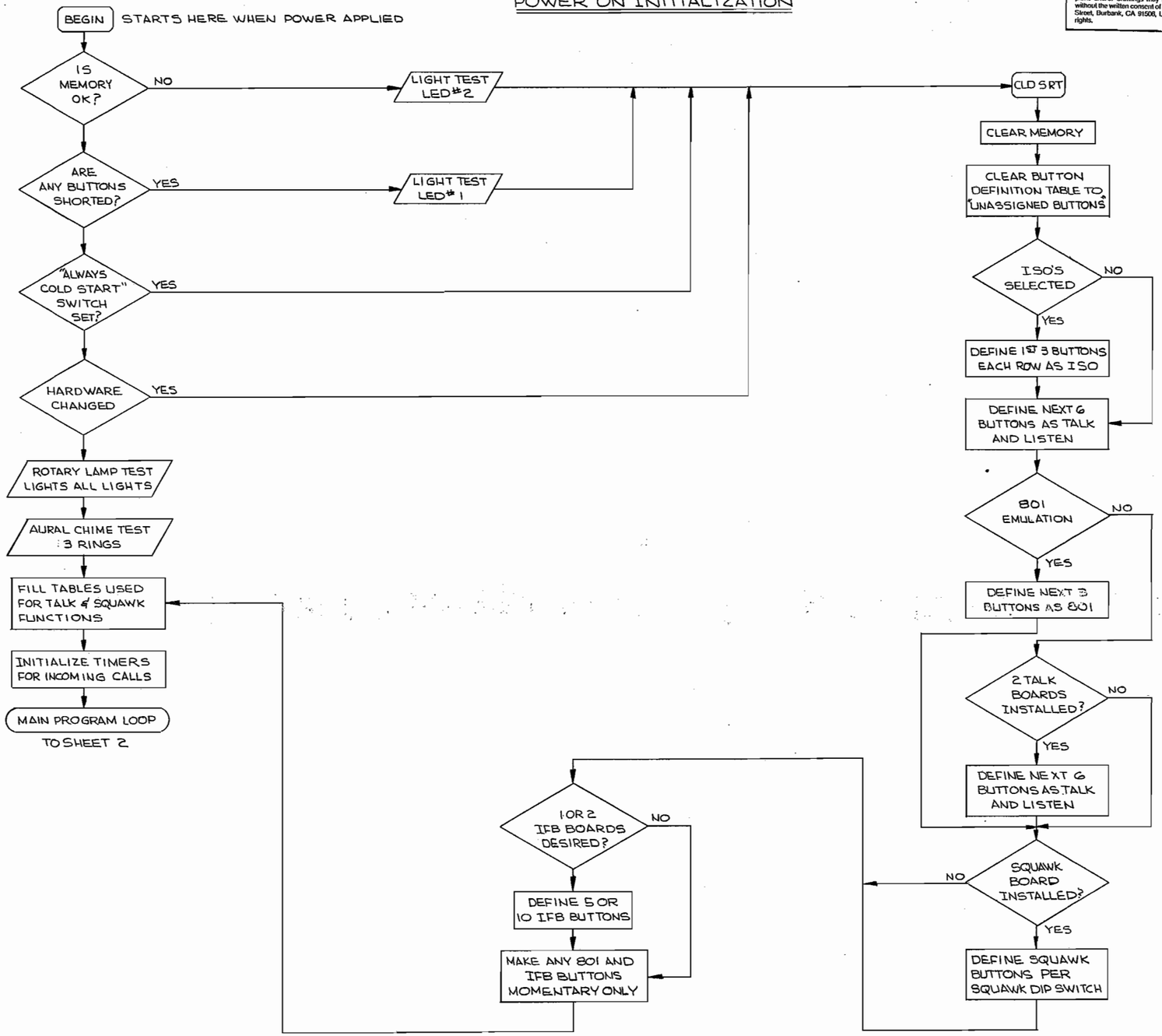
U19 MAX232 RS232 I/F DRIVER CONVERTER — Vcc, Rs IN, Rs OUT, TTL IN, TTL OUT, -10V, +10V, GND — (Tx), (Rx)

C17–C30 0.1 — C22, C25 22/16 TANT — C26, C27 22/16 TANT

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS ± DECIMALS .XX ± .XXX ± ANGLES ±	CONTRACT NO. SERIES 800	RTS SYSTEMS BURBANK, CALIFORNIA	
MATERIAL	APPROVALS	DATE	SCHEMATIC DIAGRAM, CPU BOARD, MODEL 802, Z-80C VERSION
FINISH	DRAWN R. NEILSON	4-16-87	
DO NOT SCALE DRAWING	CHECKED		
	ISSUED		SIZE D FSCM NO. 60572 DWG. NO. SD 5336 REV. D
			SCALE — SHEET 2 OF 2

POWER ON INITIALIZATION

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED



	802
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± | DECIMALS .XX ± .XXX ± | ANGLES ±
MATERIAL
FINISH
DO NOT SCALE DRAWING

CONTRACT NO. 800 SERIES

APPROVALS	DATE
DRAWN B.MAEZ	5-19-83
CHECKED	
ISSUED	

RTS SYSTEMS BURBANK, CALIFORNIA

FLOW CHART, MODEL 802
POWER ON INITIALIZATION

SIZE D | FSCM NO. | DWG. NO. FC3398 | REV.
SCALE — | SHEET 1 of 7

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED

MAIN PROGRAM LOOP

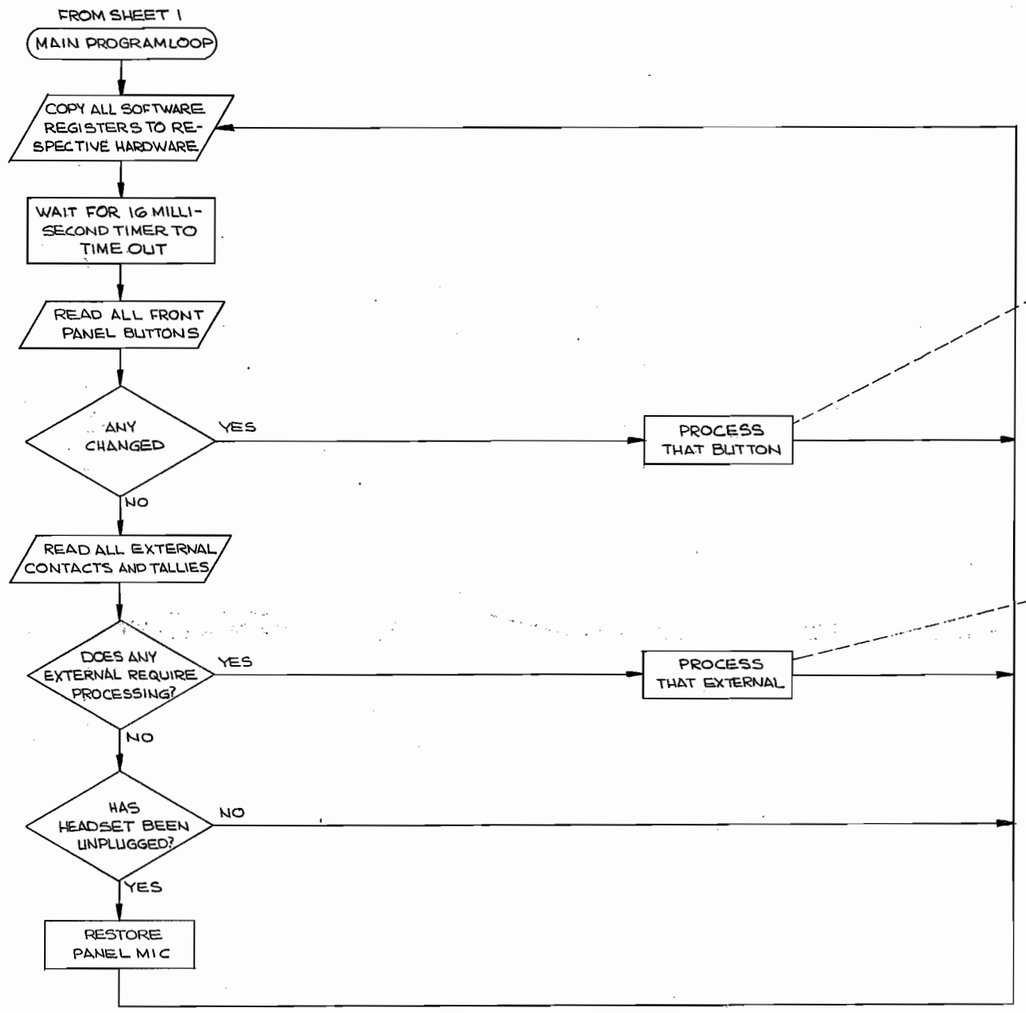


Fig-3.10.2-2

	802
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± DECIMALS .XX ± .XXX ± ANGLES ±
MATERIAL
FINISH
DO NOT SCALE DRAWING

CONTRACT NO. 800 SERIES

APPROVALS	DATE
DRAWN B. MAEZ	5-19-83
CHECKED	
ISSUED	

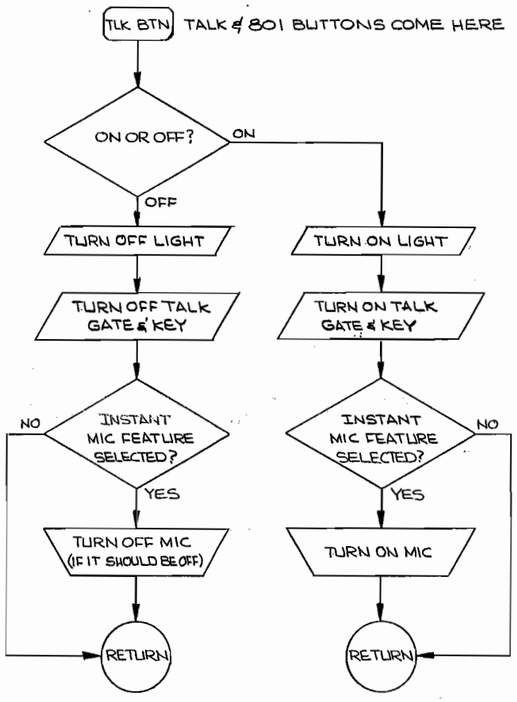
RTS SYSTEMS BURBANK, CALIFORNIA

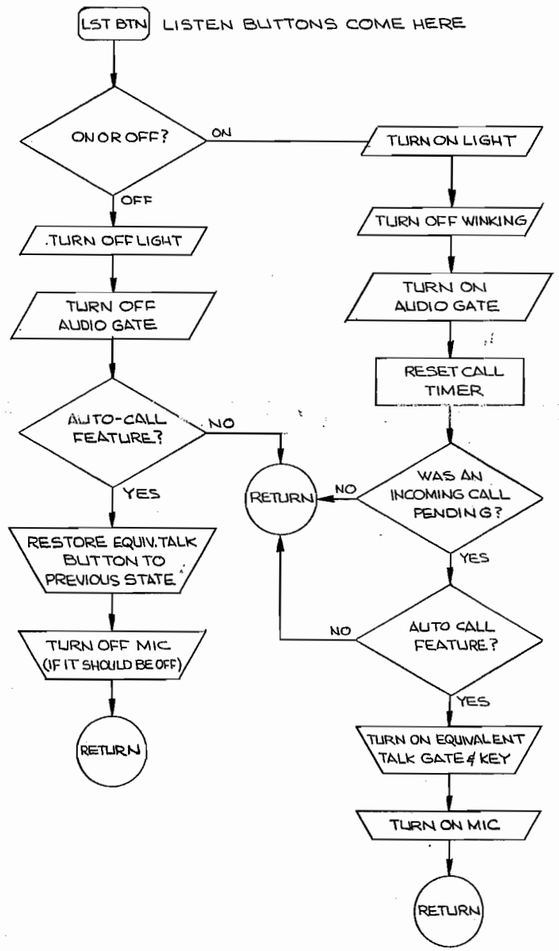
FLOW CHART, MODEL 802
MAIN PROGRAM LOOP

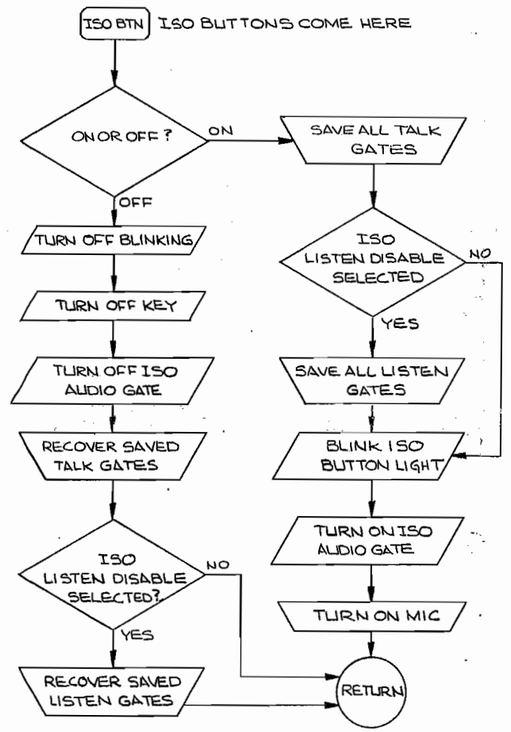
SIZE D | FSCM NO. | DWG. NO. FC3398 | REV.
SCALE — | SHEET 2 of 7

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED

BUTTON FUNCTIONS .1







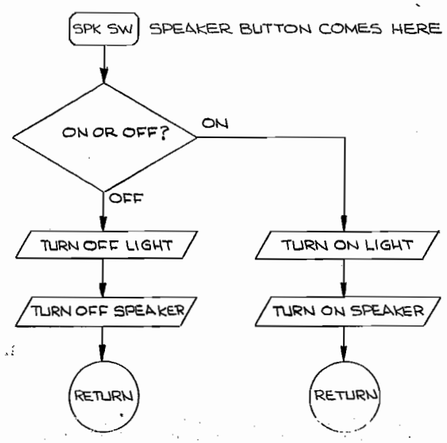


Fig = 3-10-2-3

	802
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± DECIMALS .XX ± .XXX ± ANGLES ±
MATERIAL
FINISH
DO NOT SCALE DRAWING

CONTRACT NO. 800 SERIES

APPROVALS	DATE
DRAWN B MAEZ	5-20-83
CHECKED	
ISSUED	

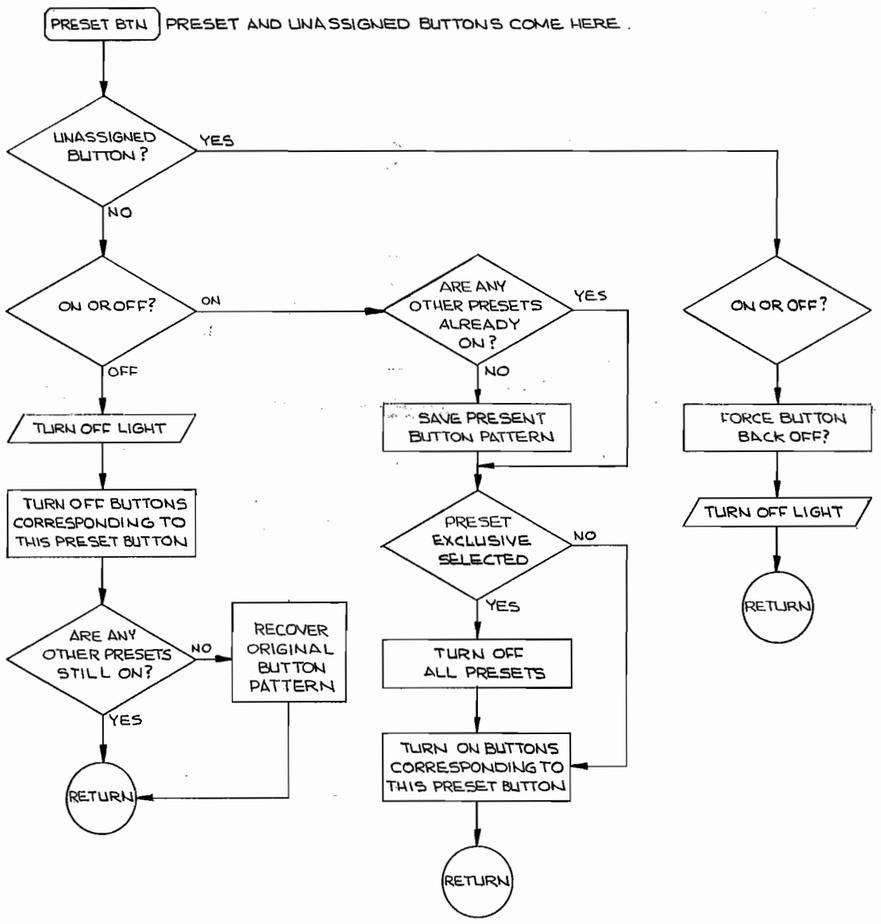
RTS SYSTEMS BURBANK, CALIFORNIA

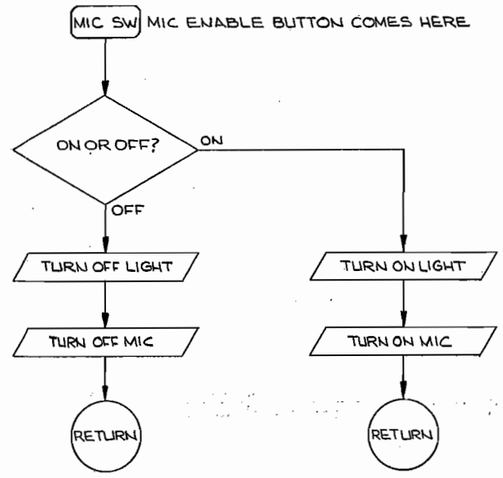
FLOW CHART, MODEL 802
BUTTON FUNCTIONS 1

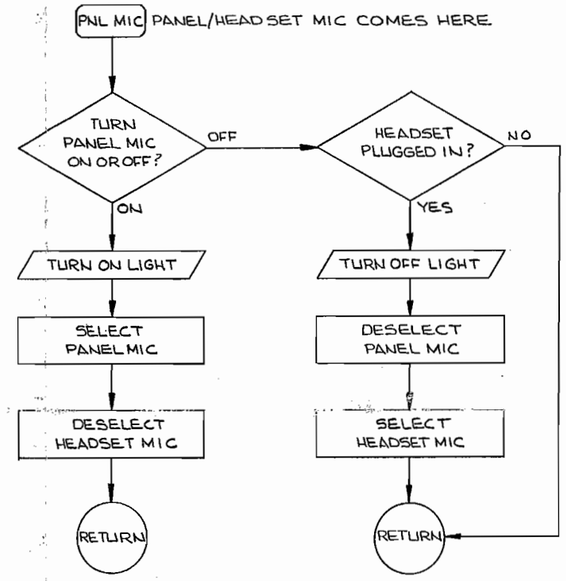
SIZE D | FSCM NO. | DWG. NO. FC3398 | REV.
SCALE — | SHEET 3 of 7

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED

BUTTON FUNCTIONS 2







7y 3-10-2-4

	802
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± DECIMALS .XX ± .XXX ± ANGLES ±
MATERIAL
FINISH
DO NOT SCALE DRAWING

CONTRACT NO. 800 SERIES

APPROVALS	DATE
DRAWN B.MAEZ	5-23-83
CHECKED	
ISSUED	

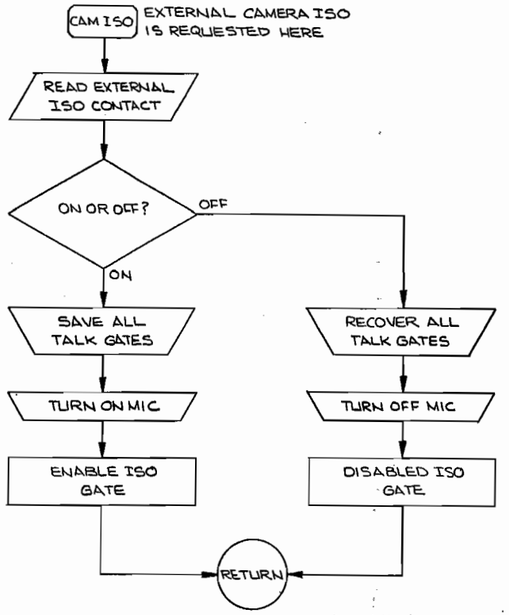
RTS SYSTEMS BURBANK, CALIFORNIA

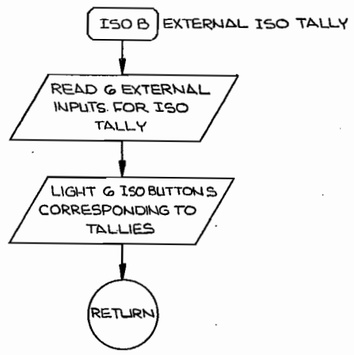
FLOW CHART, MODEL 802
BUTTON FUNCTIONS 2

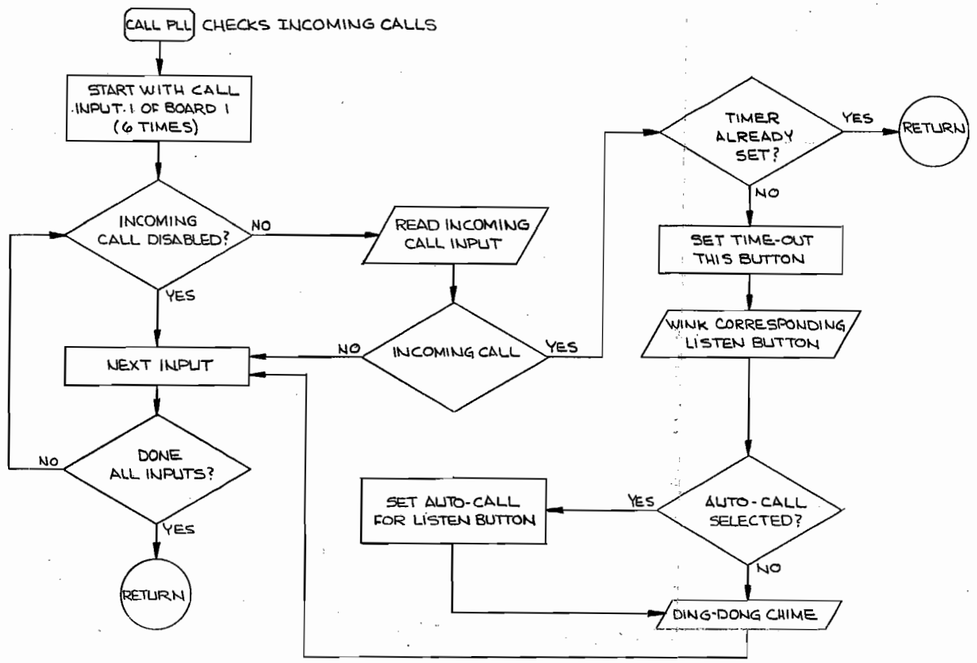
SIZE D | FSCM NO. 49512 | DWG. NO. FC3398 | REV.
SCALE — | SHEET 4 of 7

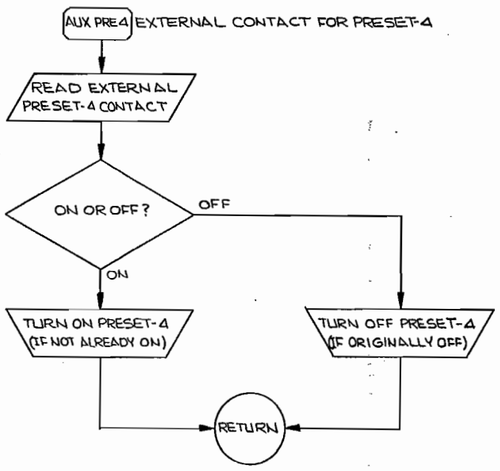
REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED

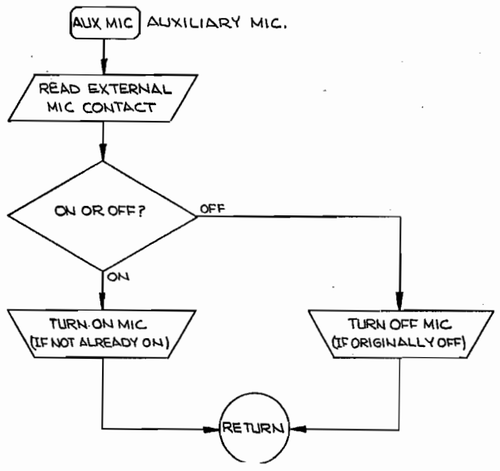
EXTERNALS

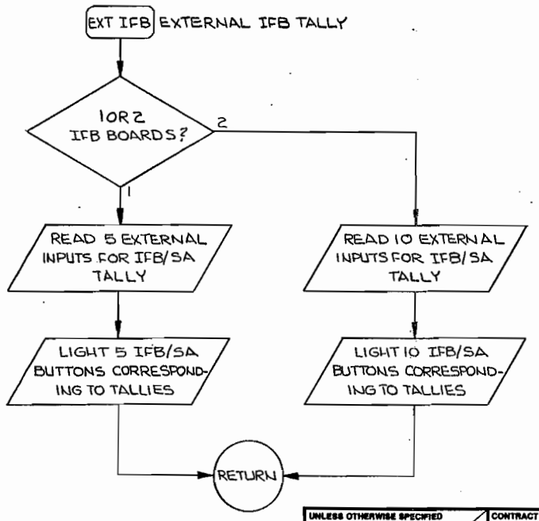


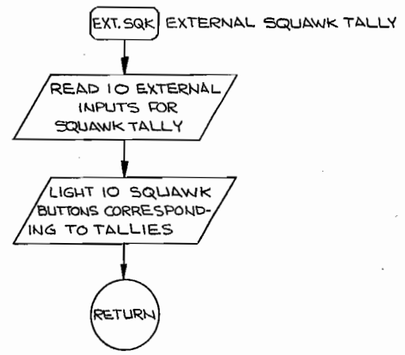












7ij 3-10-2-5

	802
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± DECIMALS .XX ± .XXX ± ANGLES ±
MATERIAL
FINISH
DO NOT SCALE DRAWING

CONTRACT NO. 800 SERIES

APPROVALS	DATE
DRAWN B.MAEZ	5-24-83
CHECKED	
ISSUED	

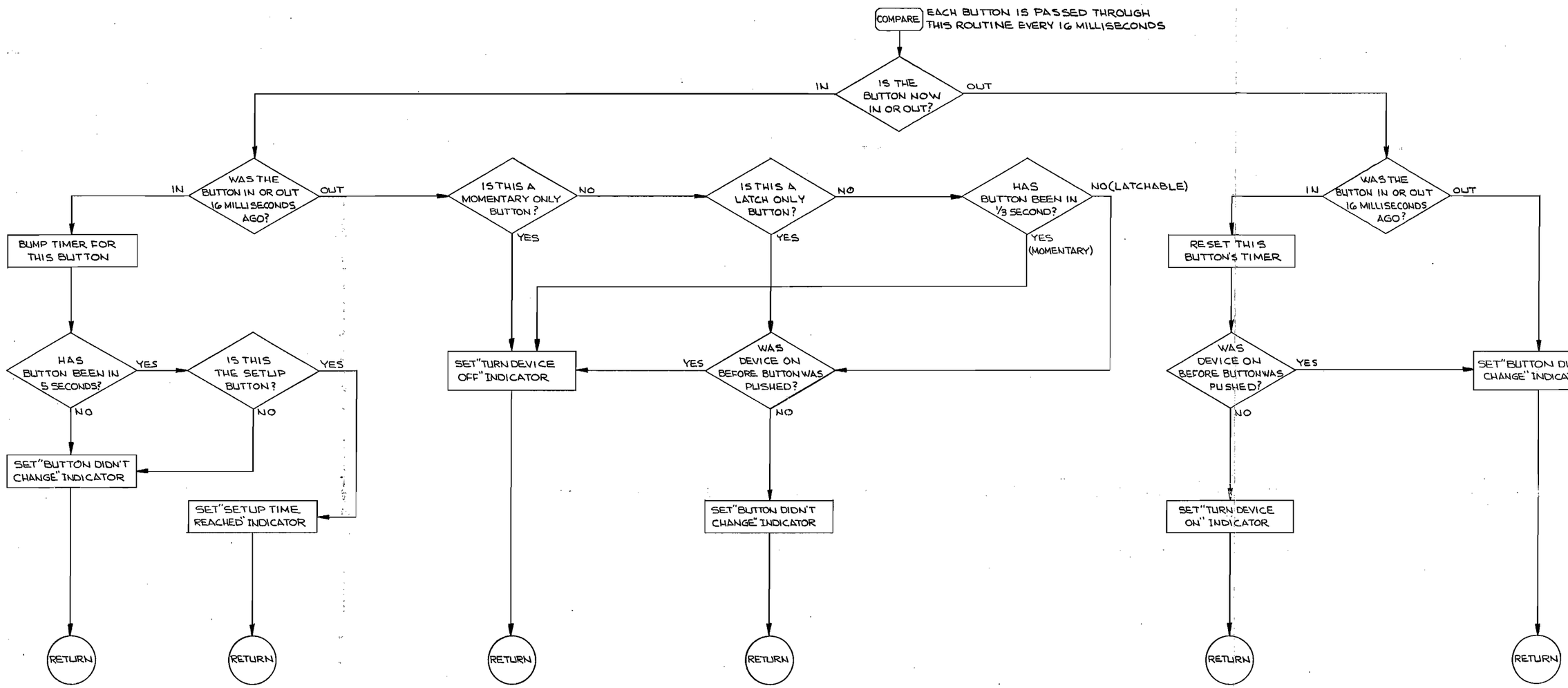
RTS SYSTEMS BURBANK, CALIFORNIA

FLOW CHART, MODEL 802
EXTERNALS

SIZE D | FSCM NO. 73591 | DWG. NO. FC3398 | REV.
SCALE — | SHEET 5 of 7

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED

ELECTRONIC SWITCH ACTION



7ij - 3-10-2-6

	802
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± DECIMALS .XX ± .XXX ± ANGLES ±
MATERIAL
FINISH
DO NOT SCALE DRAWING

CONTRACT NO. 800 SERIES

APPROVALS	DATE
DRAWN B.NAEZ	5-24-83
CHECKED	
ISSUED	

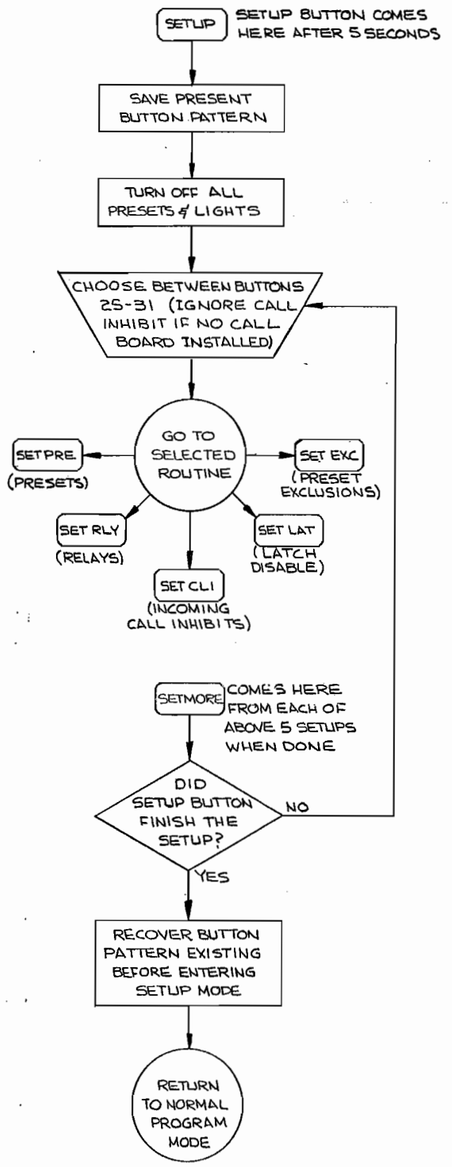
RTS SYSTEMS BURBANK, CALIFORNIA

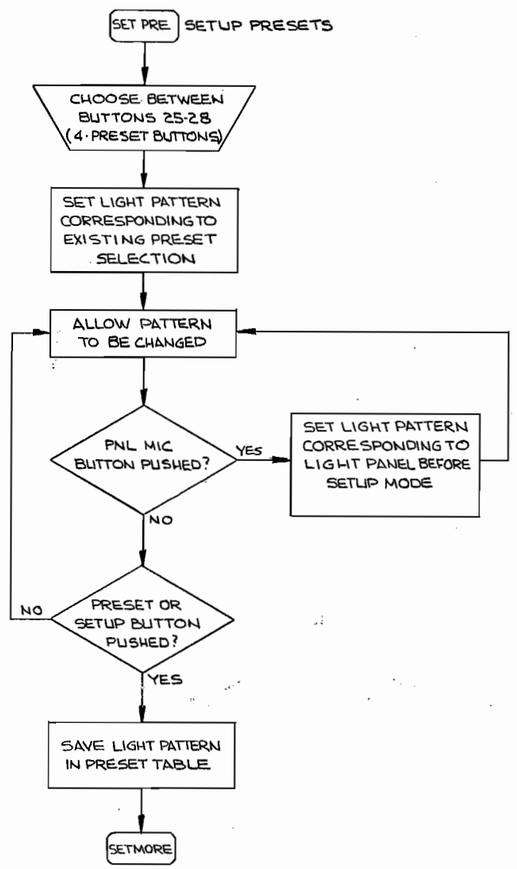
FLOW CHART, MODEL 802, ELECTRONIC SWITCH ACTION

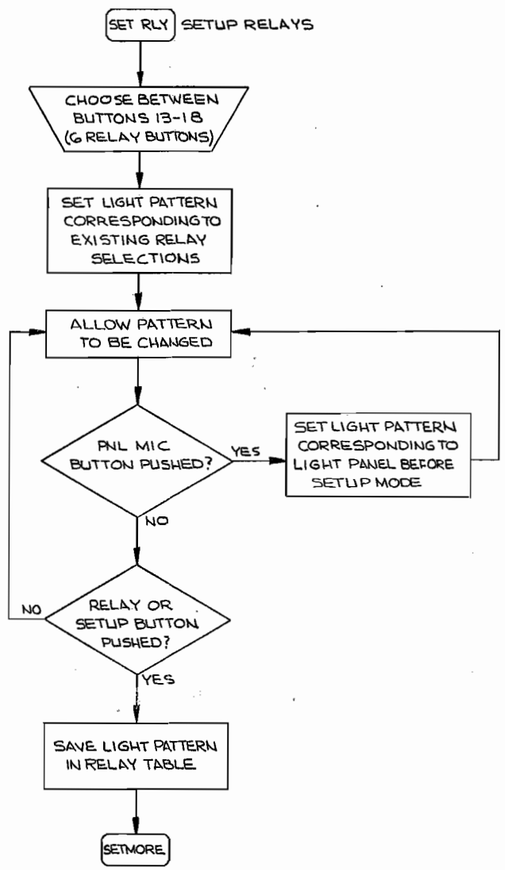
SIZE D | FSCM NO. 60512 | DWG. NO. FC3398 | REV.
SCALE — | SHEET 6 OF 7

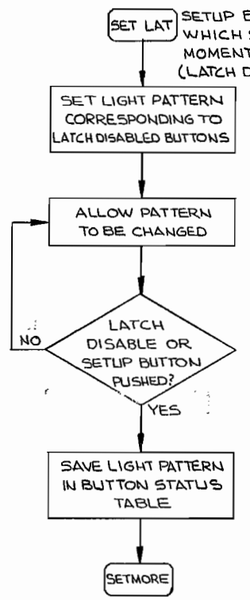
REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED

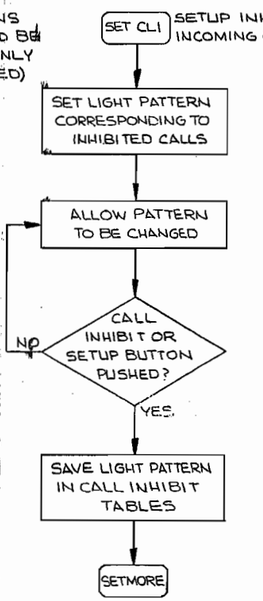
SETUP MODE











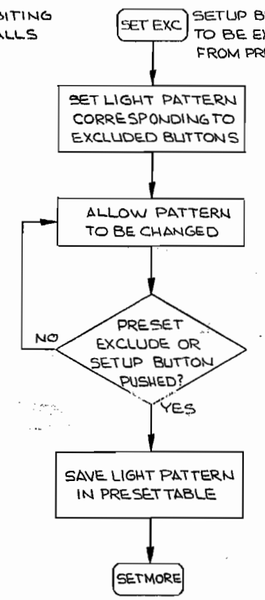


Fig. 3-10-2-7

	802
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± DECIMALS .XX ± .XXX ± ANGLES ±
MATERIAL
FINISH
DO NOT SCALE DRAWING

CONTRACT NO. 800 SERIES

APPROVALS	DATE
DRAWN B.MAEZ	5-25-83
CHECKED	
ISSUED	

RTS SYSTEMS BURBANK, CALIFORNIA

FLOW CHART, MODEL 802, SETUP MODES

SIZE D | FSCM NO. 20572 | DWG. NO. FC3398 | REV.

SCALE — | SHEET 7 of 7

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED

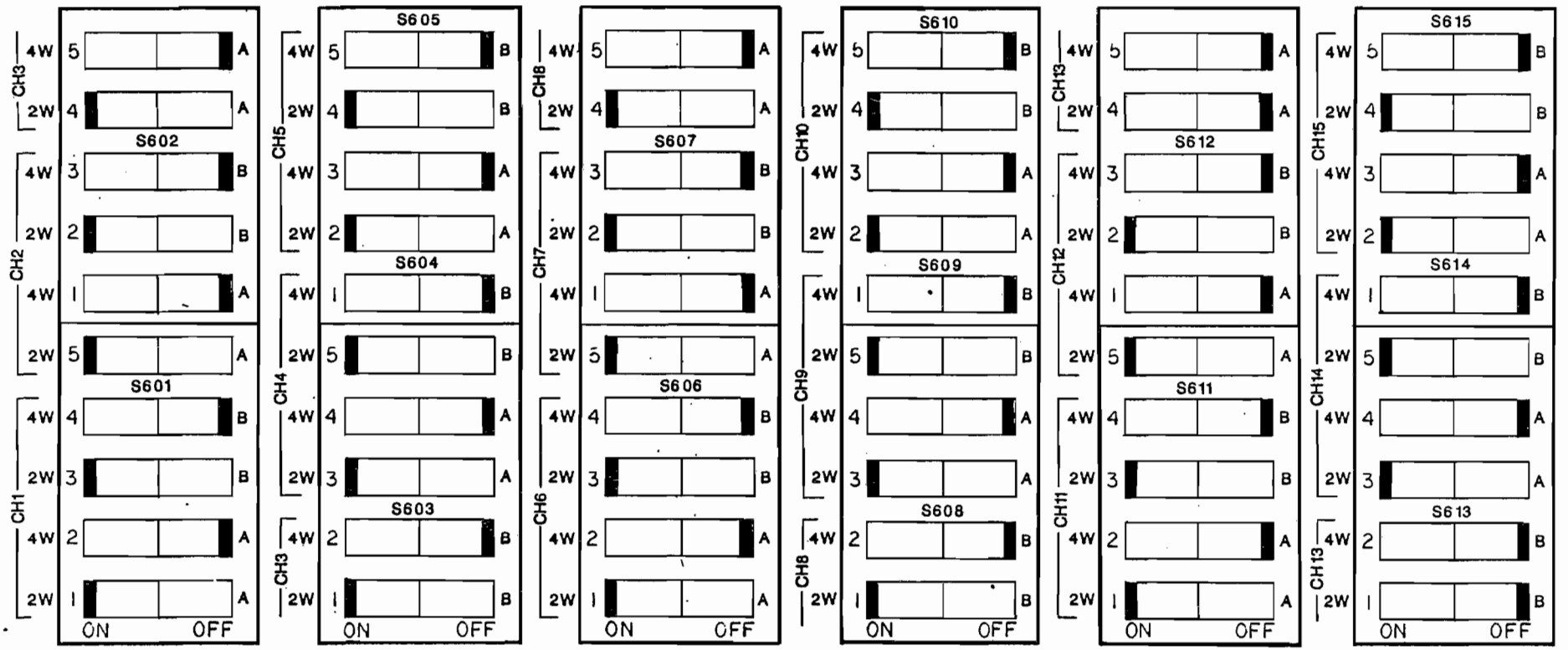
TOP ASSEMBLY - MSTR STA. - MODEL 802	AS3104
SCHEMATIC DIAGRAM - 802	SD3000
SCHEMATIC DIAGRAM - STD 802 MSTR STA INTERFACE	SD3002
OUTLINE DRAWING - 802	OD3012
FAB DETAIL, FRONT PANEL	3005
, RIGHT SIDE RAIL	3007
, LEFT SIDE RAIL	3008
, REAR PANEL	3009
, COVER, TOP & BOTTOM	3010
, FRONT PANEL, ADJ BD.	3011
, SUPPORT, CARD GUIDE	3021-½
FAB DETAIL, COVER/SMALL COVER	3163
ASSEMBLY, PCB - MOTHER BD	AS3000-1
SCHEMATIC DIAGRAM	SD3000
MOTHER BD J NUMBERS AND JUMPERS	3096
FAB DETAIL, PCB	3000-1
FAB DETAIL, SUPPORT, ADJ CARD GUIDE	3022
ASSEMBLY, PCB - TALK/SQUAWK/IFB BD	AS3000-3
SCHEMATIC DIAGRAM	SD3000-SHT
FAB DETAIL, PCB	3000-3
ASSEMBLY, PCB - PIO BD # 1, 2 & 3	AS3000-4
SCHEMATIC DIAGRAM	SD3000-SHT 12&13
FAB DETAIL, PCB	3000-4
ASSEMBLY, PCB - CPU BD	AS3000-5
SCHEMATIC DIAGRAM	SD3000-SHT 15
FAB DETAIL, PCB	3000-5
ASSEMBLY, PCB - 4 WIRE BD	AS3000-6
SCHEMATIC DIAGRAM	SD3000-SHT 22
FAB DETAIL, PCB	3000-6
ASSEMBLY, PCB - ADJUST BD	AS3000-7
SCHEMATIC DIAGRAM	SD3000-SHT 7
FAB DETAIL, PCB	3000-7
FAB DETAIL, SUPPORT, ADJ BD	3023
FAB DETAIL, BRACKET, ADJ CARD STOP	3024
ASSEMBLY, PCB - CALL LIGHT BD	AS3000-18
SCHEMATIC DIAGRAM	SD3000-SHT 18
FAB DETAIL, PCB	3000-18
ASSEMBLY - SUB CHASSIS	AS3006
ASSEMBLY, PCB - SWITCH BD	AS3000-9
SCHEMATIC DIAGRAM	SD3000-SHT 9
FAB DETAIL, PCB	3000-9
FAB DETAIL, SUB CHASSIS	3006
FAB DETAIL, SPEAKER GRILLE	3088

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMALS ANGLES .XX ± .XXX ±	CONTRACT NO.	RTS SYSTEMS BURBANK, CALIFORNIA	
MATERIAL	APPROVALS / DRAWN B.MAEZ	DATE 12-9-82	DRAWING NUMBER TREE MSTR STA. - MODEL 802
FINISH	CHECKED		
DO NOT SCALE DRAWING	ISSUED		SIZE C FSCM NO. 40512 DWG. NO. DT3176 REV.
			SCALE — SHEET 1 OF 1

2 WIRE CHANNELS 1-12 (B3 OPTION, CH 7-12, ADDED)

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED

REAR PANEL



FRONT PANEL

2. CHAN 13 ALWAYS OFF.

1. 2 WIRE CHANS 1-6. SWITCHES FOR CHANS 7-12, STILL SET FOR 2 WIRE OPTION, EVEN THOUGH NOT USED WITHOUT B3 OPTION.

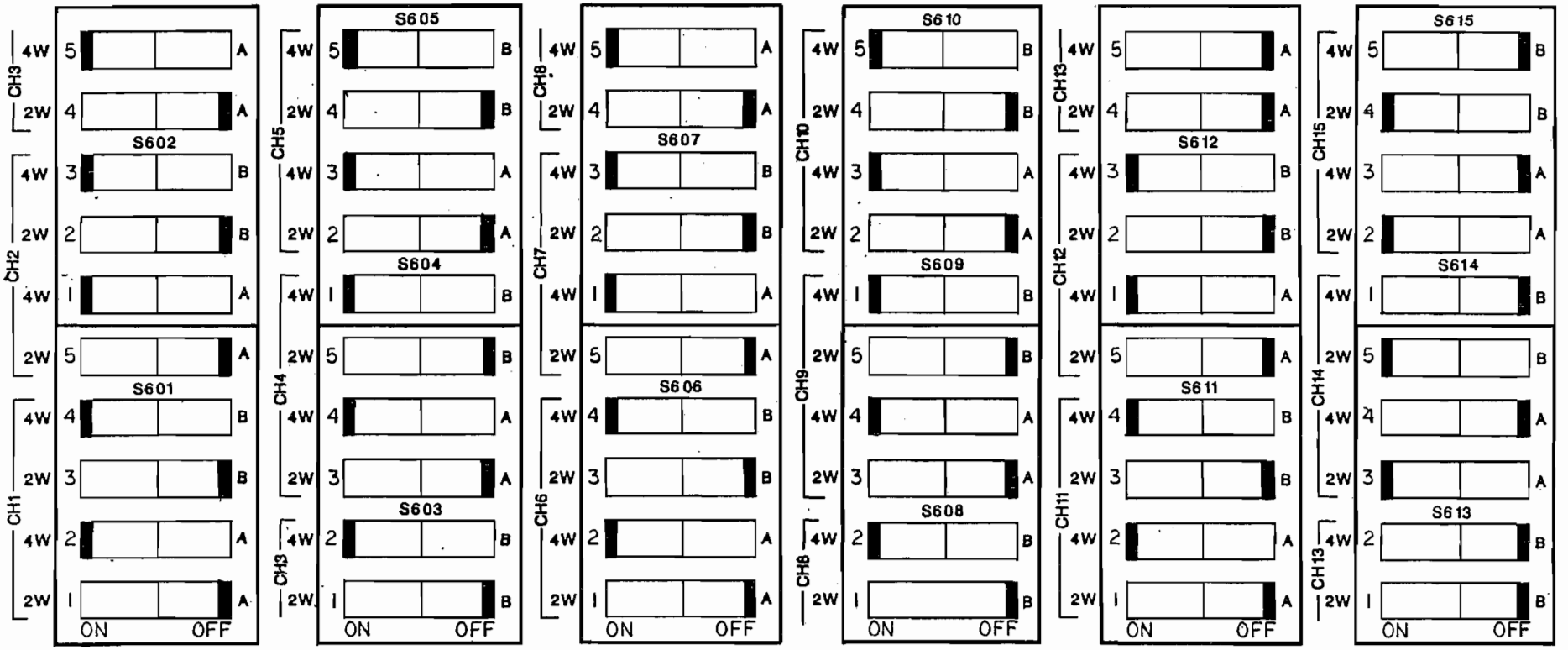
NOTES:

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 ±.06, XX ±.03, XXX ±.010, ANGLES ±30'	CONTRACT NO.	RTS SYSTEMS BURBANK, CALIFORNIA	
	APPROVALS / DATE	802 MOTHER BOARD SWITCHES	
MATERIAL	DRAWN NMH		
FINISH	CHECKED		
NEXT ASSY / USED ON	ISSUED	SIZE B / FSCM NO. 60572 / DWG. NO. TMI5334 / REV.	
APPLICATION	DO NOT SCALE DRAWING	SCALE ——	SHEET 1 OF 6

4 WIRE CHANNELS 1-12 (C2 & C3 WITH B3, TALK 7-12, ADDED)

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED

REAR PANEL



FRONT PANEL

1. CHAN 13 ALWAYS OFF.

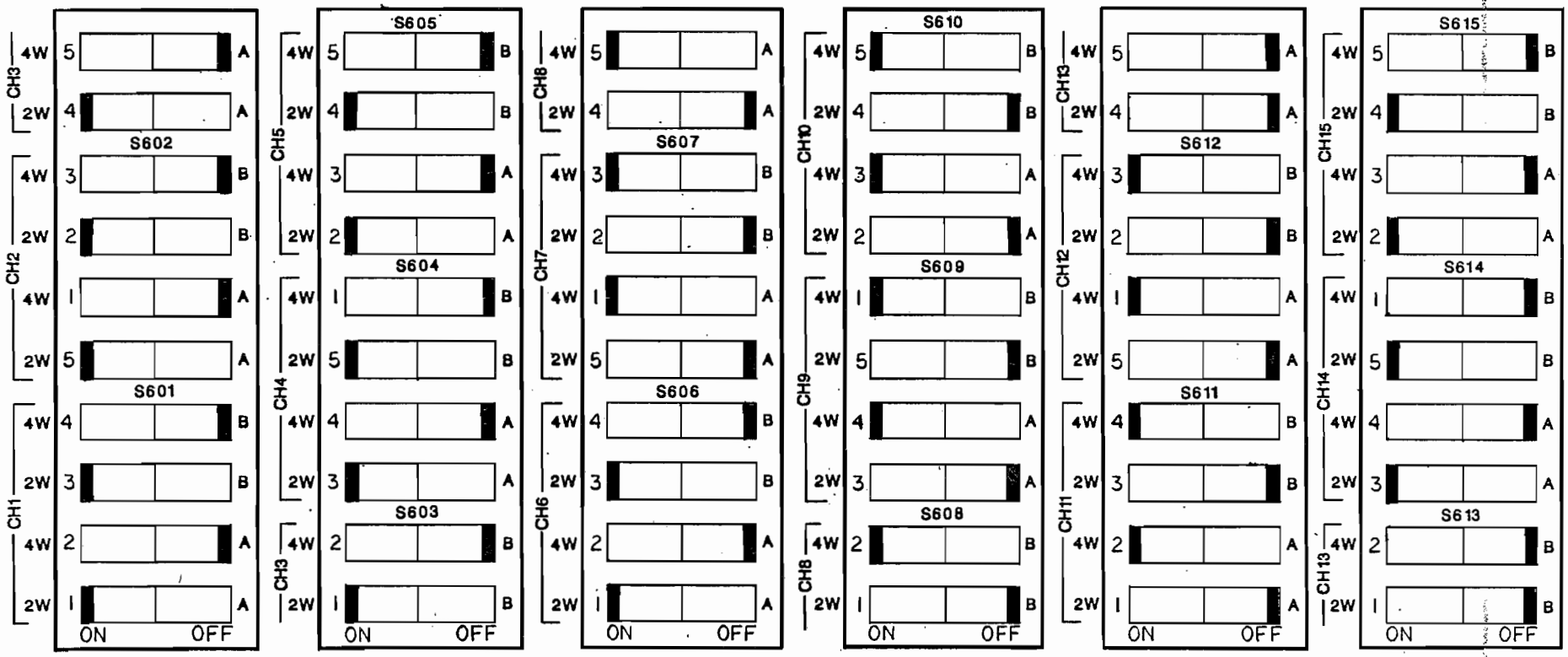
NOTES:

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 ±.06 XX ±.03 XXX ±.010 ANGLES ±30'	CONTRACT NO.	RTS SYSTEMS BURBANK, CALIFORNIA	
MATERIAL	APPROVALS	DATE	802 MOTHER BOARD SWITCHES
FINISH	DRAWN NMH		
NEXT ASSY / USED ON	CHECKED		
APPLICATION	ISSUED		
	DO NOT SCALE DRAWING	SIZE B / FSCM NO. 60572 / DWG. NO. TMI5334 / REV.	
		SCALE —	SHEET 2 OF 6

2 WIRE CHANNELS 1-6
4 WIRE CHANNELS 7-12 (C3 w/ B3, TALK 7-12, ADDED)

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED

REAR PANEL



FRONT PANEL

1. CHAN 13 ALWAYS OFF.

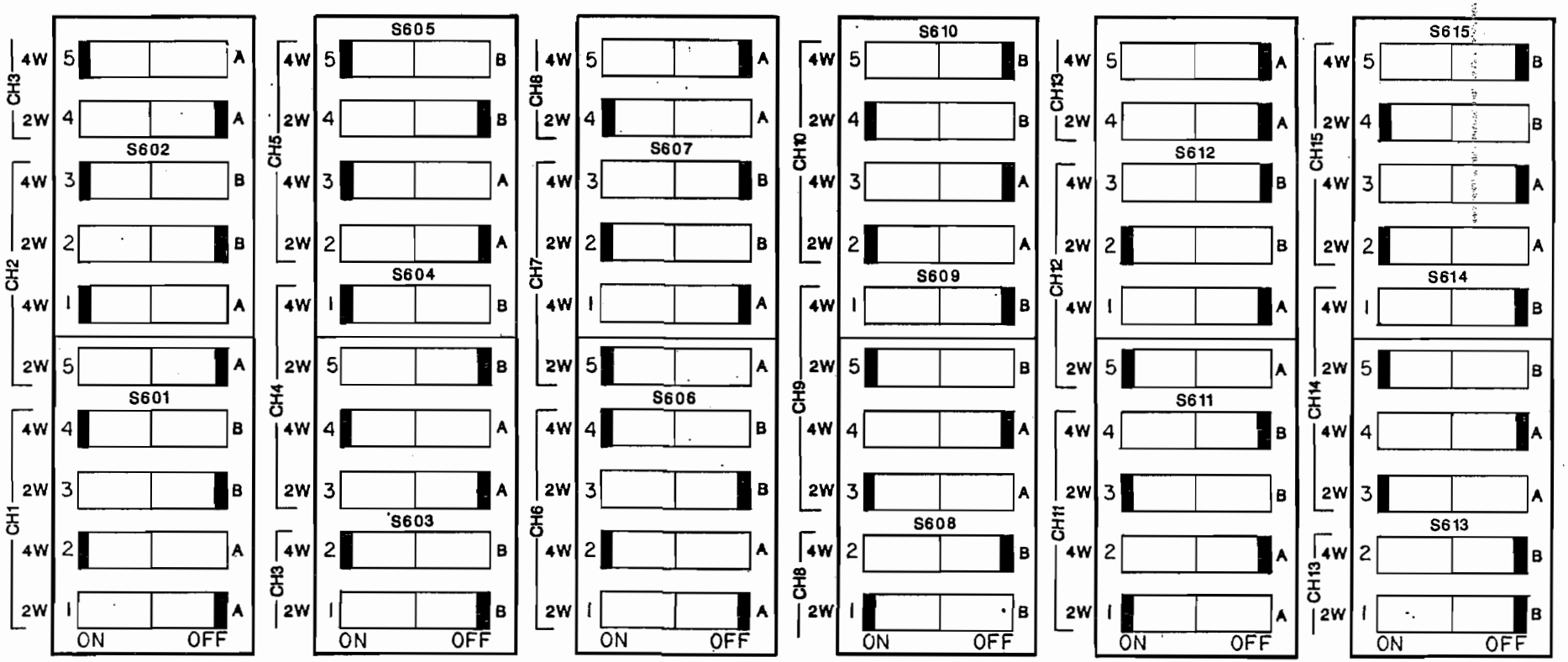
NOTES:

UNLESS OTHERWISE SPECIFIED	CONTRACT NO.	RTS SYSTEMS BURBANK, CALIFORNIA	
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 ±.06 XX ±.03 XXX ±.010 ANGLES ±30'	APPROVALS / DATE DRAWN CHECKED ISSUED	802 MOTHER BOARD SWITCHES	
MATERIAL FINISH	DO NOT SCALE DRAWING	SIZE B / FSCM NO. 60572 / DWG. NO. TMI5334 / REV.	
NEXT ASSY / USED ON APPLICATION		SCALE —	SHEET 3 OF 6

4 WIRE CHANNELS 1-6(C2)
2 WIRE CHANNELS 7-12(B3)

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED

REAR PANEL



FRONT PANEL

1. CHAN 13 ALWAYS OFF.

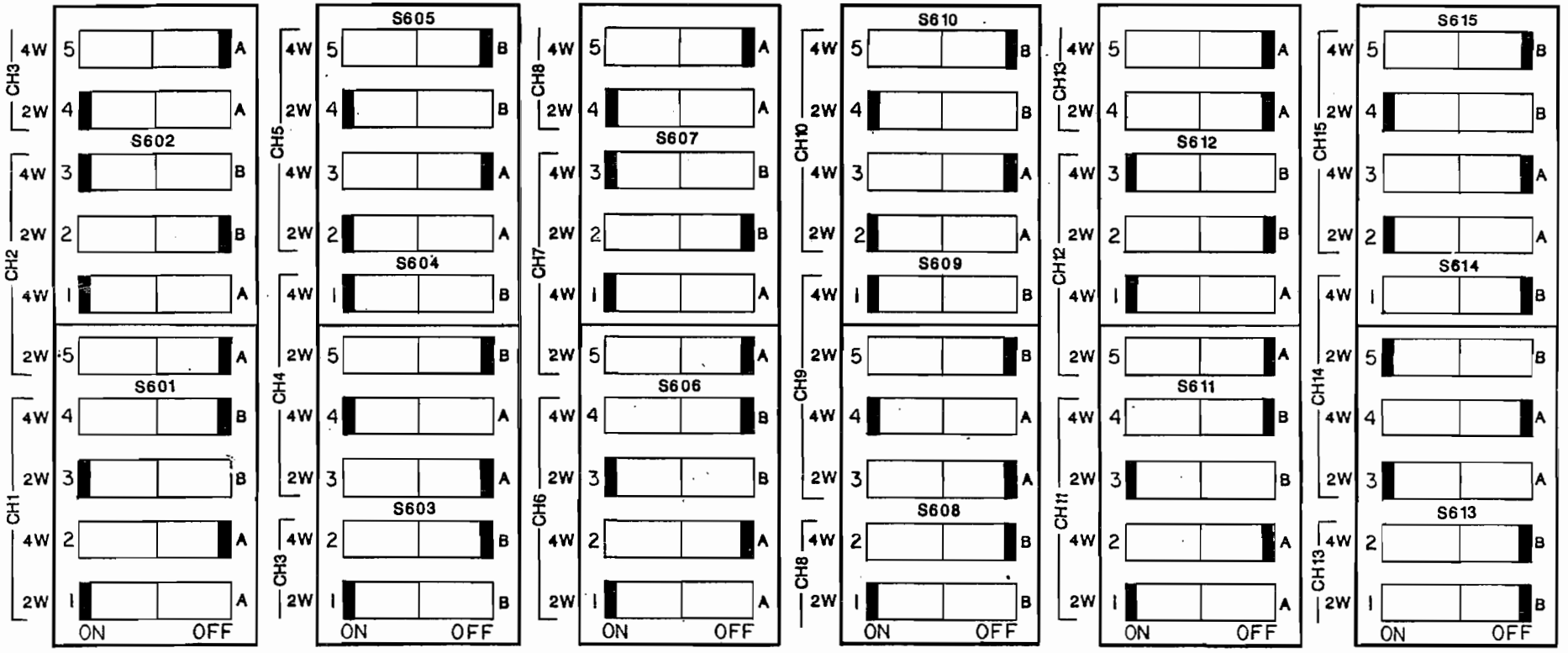
NOTES:

UNLESS OTHERWISE SPECIFIED	CONTRACT NO.	RTS SYSTEMS BURBANK, CALIFORNIA	
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 ±.06 .XX ±.03 .XXX ±.010 ANGLES ±30'	APPROVALS / DATE DRAWN CHECKED ISSUED	802 MOTHER BOARD SWITCHES	
MATERIAL FINISH	DO NOT SCALE DRAWING	SIZE B / FSCM NO. 60572 / DWG. NO. TMI5334 / REV.	
NEXT ASSY / USED ON APPLICATION	SCALE —	SHEET 4 OF 6	

MIXED 2 WIRE & 4 WIRE CHANNELS 1-12 (B3, CHANS 7-12, ADDED)

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED

REAR PANEL



FRONT PANEL

SHOWN:

2 WIRE	4 WIRE
CH1,3,5, 6,8,10,11 14,15	CH2,4 7,9,12

1. CHAN 13 ALWAYS OFF

NOTES:

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 ±.05 XX ±.03 XXX ±.010 ANGLES ±30'
MATERIAL
FINISH

CONTRACT NO.	
APPROVALS	DATE
DRAWN	
CHECKED	
ISSUED	
DO NOT SCALE DRAWING	

RTS SYSTEMS BURBANK, CALIFORNIA

802 MOTHER BOARD SWITCHES

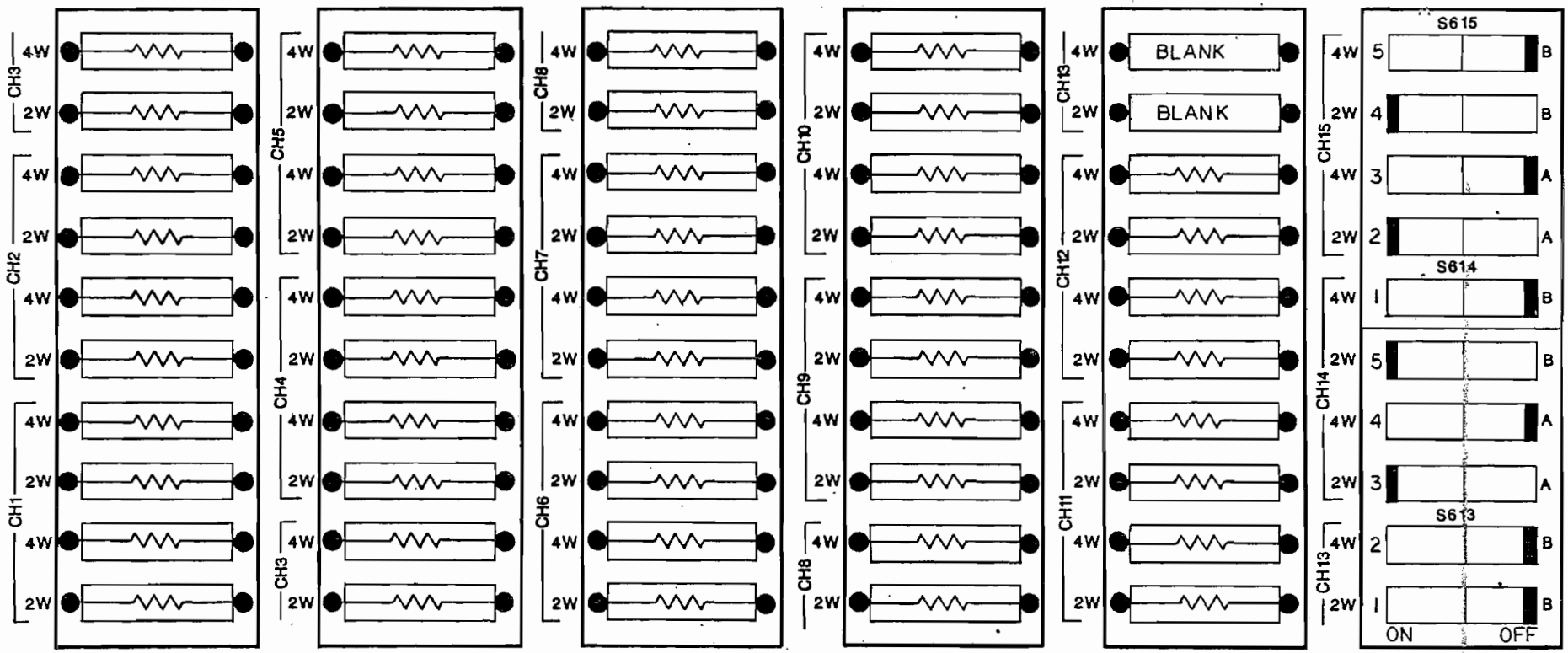
SIZE	FSCM NO.	DWG. NO.	REV.
B	60572	TMI5334	

SCALE —— SHEET 5 OF 6

2 WIRE/4 WIRE SIMULTANEOUS OPERATION CHANNELS
1-12(B3, CHANNELS 7-12, ADDED).

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED

REAR PANEL



FRONT PANEL

2. CHAN 13 ALWAYS OFF.
1. ALL RESISTORS ARE 10K, 1/8W.
NOTES:

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 ±.06 XX ±.03 XXX ±.010 ANGLES ±30'
MATERIAL
FINISH

CONTRACT NO.

APPROVALS	DATE
DRAWN NMH	
CHECKED	
ISSUED	

DO NOT SCALE DRAWING

RTS SYSTEMS BURBANK, CALIFORNIA

802 MOTHER BOARD SWITCHES

SIZE	FSCM NO.	DWG. NO.	REV.
B	60572	TM15334	

SCALE — SHEET 6 OF 6