SITE GETC CONFIGURATION MANUAL
FOR
TRUNKED SYSTEMS

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SCOPE

The GETC trunking card is used in many applications. This manual tells how to configure the GETC for use in a MASTR II station as a Working Channel, Control Channel, and as a Downlink. Figure 1 shows how Downlink, Working Channel, and Control Channel GETCs are used in a single-site system. A Backup Downlink is shown in the figure, however, this may not be used in all systems. Figure 2 shows how a Downlink GETC is used in a Multisite system. Communication between the Downlink and the TSIN is handled over a phone line or microwave link, depending on distance and customer requirements.

Supplemental information is provided in the GETC maintenance manual supplied with your system. When installing a replacement GETC into the system, be sure to note the software revision (group number) and revision number of the GETC.

NOTE

The jumper positions and DIP switch settings may change as the result of improved or enhanced software. Information presented in the accompaning Software Release Notes takes precedence over this manual.

Table 8 - Downlink GETC Indicators

INDICATOR	LED NUMBER	INDICATOR STATE	
		ON	OFF
L1	H7	Failsoft	Site Controller Link
L2	H6	Normal Operation	—
L3	H5	—	—
L4	H4	Switched to Backup Serial Port	Main Serial Port
L5	H3	—	—
L6	H2	—	—
L7	H1	—	—

Table 9 - Uplink GETC Indicators

INDICATOR	LED NUMBER	INDICATOR STATE	
		ON	OFF
L1	H7	—	—
L2	H6	Normal Operation	—
L3	H5	—	—
L4	H4	Switched to Backup Serial Port	Main Serial Port
L5	H3	—	—
L6	H2	—	—
L7	H1	active	backup

ERICSSON

Ericsson Inc.
Private Radio Systems
Mountain View Road
Lynchburg, Virginia 24502
1-800-528-7711 (Outside USA, 804-528-7711)

Printed in U.S.A.

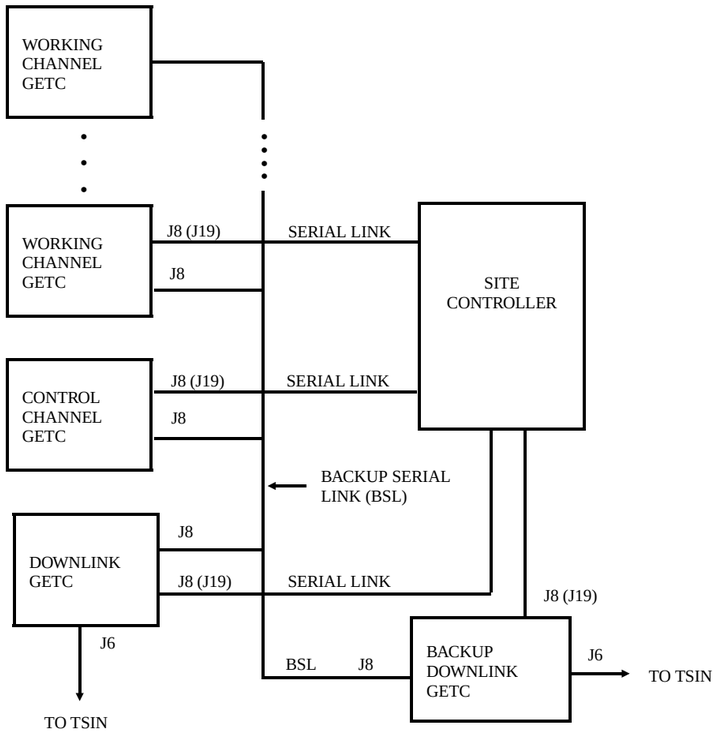

Figure 1 - Working Channel, Downlink, and Control Channel GETCs

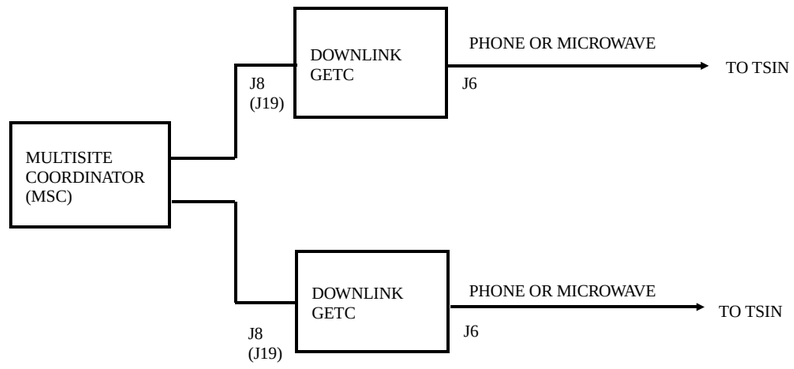

Figure 2 - Downlink GETC In Multisite Trunked System

JUMPER CONFIGURATION

Jumper configurations for MASTR II trunked station applications are listed in Table 1.

Table 1 - Jumper Configurations For MASTR II Trunked Stations

JUMPER	POSITION	FUNCTION
P11	J11-1 & 2	Enables receive data from 9600 baud modem board.
P12	J12- 1 & 2	Enables CTS from BSL.
P13	J13-1 & 2	Route backup serial link tx output to backup serial link rx input.
P14	J14-1 & 2	Master site controller path selection enable (11/73-1SEL).
P15	J15-1 & 2	Backup site controller path selection disabled.
P16	J16-1 & 2	Backup serial link selection enable.
P17	J17-1 & 2	Low-speed data encode path enabled.
P18	J18-1 & 2	Low-speed data decode path enabled.
P20	J20-1 & 2	Enables COMB PTT IN/POWER SENSE from station.
P21	J21-1 & 2	Enables high-speed, data-acquisition rate control (HSACQ).
P22	J22-1 & 2 J22-2 & 3	Use for 800 MHz applications. Use for 900 MHz applications.
P24	J24-1 & 2	Backup serial link selection (failsoft) enable.
P25	J25-1 & 2	Low-speed data encode path enable.
P26	J26-1 & 2	Use for 800 MHz applications. Omit for 400 MHz applications.
P28	J28-1 & 2	Sync line input path enabled.
P29	J29-1 & 2	Enables site controller RX data on J8-4.
P30*	J30-2 & 3	Enables clock drive to uP.
P44	J44-1 & 2	Selects 256K or 512K PROM size.
P45	J45-1 & 2 J45-2 & 3	Selects 2K x 8 bit RAM (not used). Selects 8K x 8 bit RAM (typical).
P46	J46-1 & 2 J46-2 & 3	Used for normal communication. Used in Digital Receiver Communications (collision detection) for voter.
P47	J47-1 & 2	Backup serial link select.
P48	J48-1 & 2	Backup serial link select.
P50	J50-1 & 2	Enables tone control for voted systems.
P51	J51-1 & 2	Morse code ID deviation control.
P52	J52-1 & 2 J52-2 & 3	TXD polarity select. TXD polarity select.
P53	J53-1 & 2 J53-2 & 3	Selects RXD data polarity. Selects RXD data polarity.
P54	J54-1 & 2 (jumper on)	Enables local control of (MODCNTL).
P55	OMIT	Disables WALSH bit 1.
P60	J60-1 & 2	Enables high-speed data path through data filter.
P61	J61-2 & 3	Selects 512K PROM size.
P62	J62-1 & 2	Selects 11 MHz modem chip (U4) clock frequency for 9600 baud data.
P63	OMIT	Sets TX data filter for 9600 baud.
P64	OMIT	Sets TX data filter for 9600 baud.
P65	OMIT	Sets TX data filter for 9600 baud.
P66	OMIT	Sets TX data filter for 9600 baud.
P67	J67-1 & 2	Enables receive telephone line termination (shunts with 600 ohms).
P68	J68-1 & 2	Selects Local (on)/Remote (off) control of station PTT.
P69	J69-1 & 2	Channel inhibit input from alarm system (simulcast systems only).
P70	J70-2 & 3	Enables monitoring of PA power level.
P71	J71-1 & 2	Enables control of telephone modem RTS.
P72**	J72-1 & 2 J72-2 & 3	Selects internal crystal oscillator. Allows use of external oscillator.
P73**	J73-1 & 2	Enables NOR gate U22B for PST applications.

NOTE

*Found only on 19D902104, Rev. C board.
**Found only on 19D902104, Rev. D board.

The locations of the jumpers on the 19D902104, Rev. C board are shown in Figure 3. The jumpers are <u>not</u> drawn in any particular configuration. Jumper locations on the 19D902104, Rev. D board are shown in Figure 4.

JUMPER	PST SIMULCAST CONTROL PST TSIN, PST DOWNLINK, PST CC/WC
P11	1 & 2
P12	1 & 2
P13	1 & 2
P14	1 & 2
P15	1 & 2
P16	1 & 2
P17	1 & 2
P18	1 & 2
P20	1 & 2
P21	1 & 2
P22	1 & 2
P24	1 & 2
P25	1 & 2
P26	1 & 2
P28	1 & 2
P29	1 & 2
P30	2 & 3
P31	4 & 5
P44	2 & 3
P45	1 & 2
P46	1 & 2
P47	1 & 2
P48	1 & 2
P50	2 & 3
P51	1 & 2
P52	1 & 2
P53	1 & 2
P54	1 & 2
P55	1 & 2
P60	1 & 2
P61	1 & 2
P62	OMIT
P63	OMIT
P64	OMIT
P65	OMIT
P66	1 & 2
P67	1 & 2
P68	1 & 2
P69	1 & 2
P70	1 & 2
P71	1 & 2

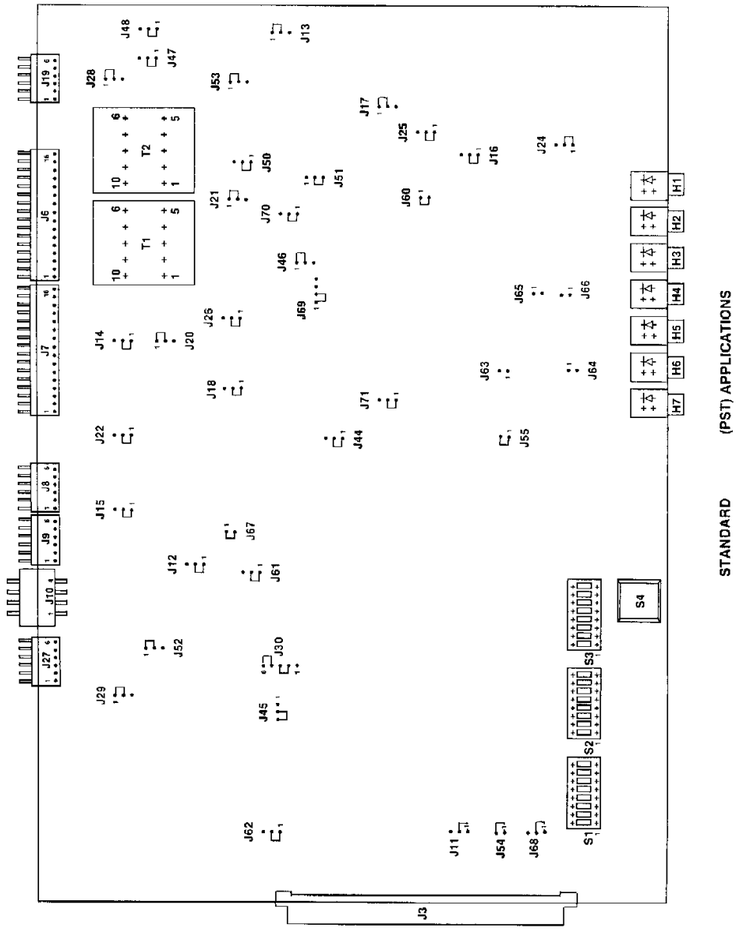

Figure 3 - Jumper For 19D902104, Rev. C

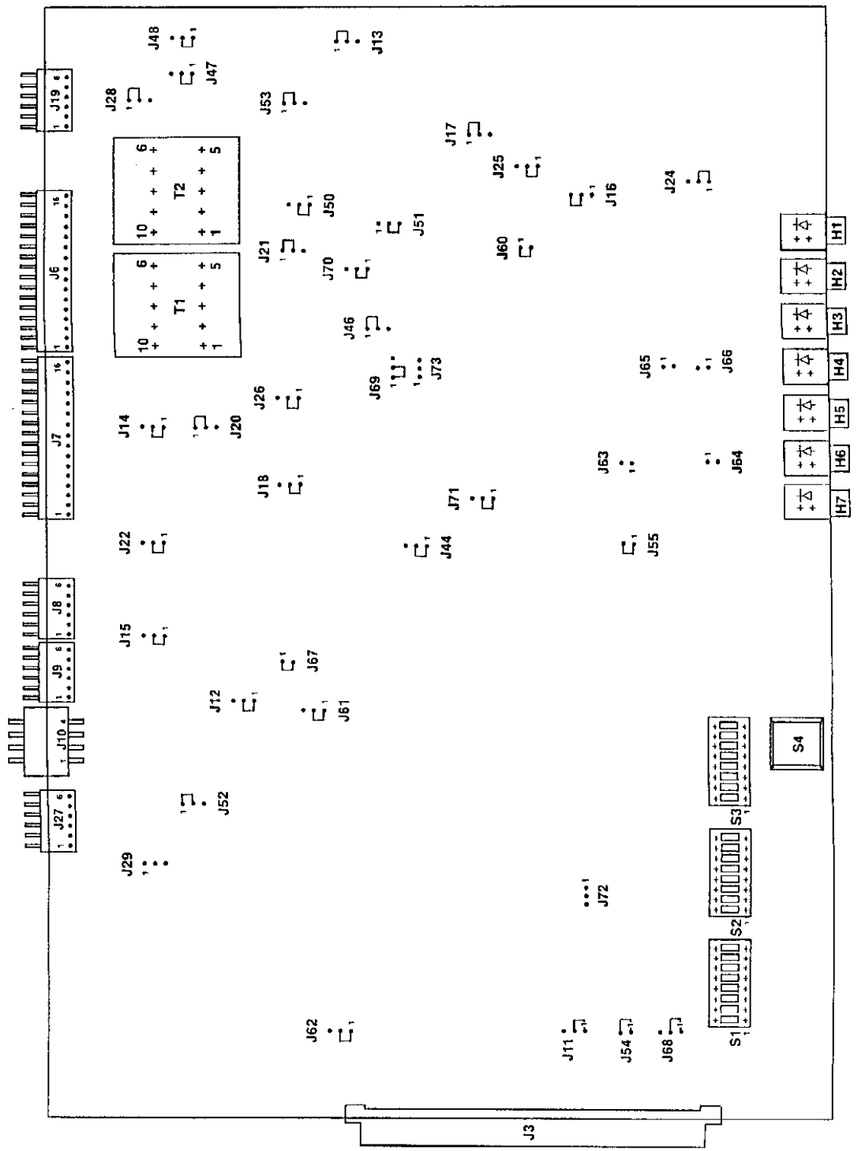

Figure 4 - Jumper Locations For 19D902104, Rev. D

MAIN SITE GETC SWITCH SETTINGS

The function for each of the main-site GETC switches is described in this section. Table 2 shows switch settings for Group 17 or later code. Switch settings for Group G16 or before are listed in Table 3.

Table 2 - Switch Settings For Group 17 or Later Code

	SWITCH 1								SWITCH 2								SWITCH 3							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
800 MHz Frequency	**Freq. Setting**								**Freq. Setting**															
Main Site								O								C	**Channel Address**						
Satellite Site Default Working Channel								C								C	**Channel Address**						O
Satellite Site Default Control Channel								C								C	**Channel Address**						C
Conventional Failsoft Disabled/SCAT Enabled													O											
Conventional Failsoft Enabled/SCAT Disabled													C											
Voice Guard Message Trunking (Failsoft)														O										
Voice Guard Transmission Trunking (Failsoft)														C										
Emergency Message Trunking (Failsoft)															O									
Emergency Transmission Trunking (Failsoft)															C									
C = Closed O = Open																								

Table 2 (Cont.)

	SWITCH 1								SWITCH 2								SWITCH 3							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
Test Mode																O	**Test Select**							
Multisite/ GE-Switch Uplink (Default Active)								O								C	C	C	C	C	C	C	C	O
Multisite/ GE-Switch Uplink (Default Backup)								O								C	C	C	C	C	C	C	O	O
Forced Failsoft (Sweet 16)																								O
*Multisite/ GE-Switch Downlink								O								C	O	O	C	O	O			
*Multisite/ GE-Switch Downlink Backup								O								C	C	C	O	O	O			
*CML-Switch Downlink								O								C	C	O	C	O	O			
*CML-Switch Backup Downlink								O								C	O	C	C	O	O			
Clear Voice Message Trunking																						O		
Clear Voice Transmission Trunking																						C		
Simulcast																							O	
Non-Simulcast																							C	
C = Closed O = Open																								

*These are default settings. The Downlink addresses can be configured via the GETC personality prom.

Table 3 - Switch Settings For Group 16 or Earlier Code

	SWITCH 1								SWITCH 2								SWITCH 3							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
800 MHz Frequency	**Freq. Setting**								**Freq. Setting**															
Main Site								O																
Satellite Site								C																
Conventional Failsoft Disabled/SCAT Mode Enabled													O											
Conventional Failsoft Enabled/SCAT Mode Disabled													C											
Voice Guard Message Trunking (Failsoft)														O										
Voice Guard Transmission Trunking (Failsoft)														C										
Emergency Message Trunking (Failsoft)															O									
Emergency Transmission Trunking (Failsoft)															C									
RF Transmit Data Inverted																C								
RF Transmit Data Not Inverted																O								
C = Closed O = Open																								

Table 3 (Cont.)

	SWITCH 1								SWITCH 2								SWITCH 3							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
Multisite Downlink								O									O	O	C	O	O	C	C	C
Multisite Uplink								O									O	O	C	O	O	O	C	C
Simulcast																							O	
Non-Simulcast																							C	
Forced Failsoft (Sweet 16)																								O
Simon Test																	O	O	O	O	O			
Downlink								O									C	O	C	O	O			
C = Closed O = Open																								

NOTE

Switch settings differ depending on software group number Check software group number marked on the PROM before setting switches. Refer to Software Release Notes before installing jumpers or setting switches.

SWITCH 1

Sections 1 thru 7 -- Sets transmitter frequency for 800 MHz applications.

Section 8 -- Used with input P1.6 to determine if shelf is operating as main or satellite site. Open switch for main site operation.

SWITCH 2

Sections 1 thru 4 -- Sets transmitter frequency for 800 MHz applications.

Section 5 -- Open disables conventional failsoft/Enables SCAT mode of operation.

A control channel will switch to conventional failsoft operation or become a SCAT channel if no response is detected from the working channels for six seconds.

Once a working channel is detected, the control channel will switch back to failsoft operation.

Section 6 -- When open, enables (failsoft only) Voice Guard message trunking (VoiceGuard applications only). When closed, enables Voice Guard transmission trunking (VoiceGuard applications only).

Section 7 -- When open, enables (failsoft only) emergency message trunking. When closed, enables emergency transmission trunking.

Section 8 -- RF transmit data invert.

For Group 17 software or later:

Open selects test mode. Closed selects normal mode. Two test mode types are available: DIP switch mode and interactive terminal mode. All station alignment and checks can be done using DIP switch test mode. Terminal mode (SIMON) is selected by setting S3-1 thru S3-6 all open and is used for testing the GETC board on the bench. The DIP switch test mode is selected by setting S3-1 thru S3-6 for the appropriate test and then resetting the GETC shelf. The tests are used to align the station data and audio levels. The available test settings are listed in Table 4.

NOTE

A manual reset or power-up is required to insure that the DIP switch settings have been read and activated after any switch change.

Table 4 - Test Settings

TEST	S3-1 THRU S3-6 POSITION	FUNCTIONS PERFORMED
A	000001	Keys transmitter and enables repeat audio path.
B	100001	Keys transmitter, enables repeat audio path, and sends continuous 400 Hz tone.
C	110001	Keys transmitter, enables high-speed data path, and sends continuous random high-speed data.
E	001001	Keys transmitter and enables repeat audio when carrier is present.
Z	111111	Interactive terminal test (SIMON) mode.

0 = closed switch
1 = open switch

Switch combinations not listed are undefined.

SWITCH 3

Sections 1 thru 5 -- Used to define channel address (Table 5). Each main site shelf at a site has a unique channel address.

Section 6 -- Used when channel 27 is selected (see SPECIAL FUNCTION).

For Group 17 software or later:

When switch 2-8 is closed, open to select clear voice message trunking and close to select clear voice transmission trunking.

When switch 2-8 is set for test mode, this switch sets the most-significant bit (MSB) of the test number. Open for 1 and close for 0.

Section 7 -- Open for simulcast, closed for non-simulcast operation.

For Group 17 software or later:

When Multisite Uplink operation is selected:

Close this switch for default active operation. Open this switch for default backup.
This is only significant when SW3-8 is open.

Section 8 -- Forced failsoft is enabled when open. Close for normal operation.

For Group 17 software or later:

In Multisite/GE-Switch Uplink mode, open enables backup operation and closed disables backup operation.

SELECTING 800 MHZ RF TRANSMIT FREQUENCY

The rf transmit frequency for 800 MHz applications is set by S1-1 thru S1-7 and S2-1 thru S2-4. These eleven bits encode the transmitter frequency, in the range from 850 to 870 MHz, at a 12.5 kHz channel spacing. At power-up, reset, or out-of-lock condition of the synthesizer, the GETC will attempt to load the transmit frequency code to the Synthesizer. The allowable transmit frequencies and their corresponding switch settings are listed in the table contained in the appendix.

INVERSION OF HIGH- AND LOW-SPEED DATA

The GETC is able to invert the high-speed and low-speed data to the Synthesizer-Exciter board (800 MHz). When switch S2-8 is closed, the high-speed and low-speed are not inverted. When S2-8 is open, the data are inverted. For normal operation, set S2-8 to the open (off) position. This function is only applicable for G16 and before.

SELECTING DEFAULT FAILSOFT OPERATION

Default failsoft operation is defined by S3-8. Setting S3-8 to open on a control channel will force failsoft operation at the next reset. This switch is set open only if the system is operating without a site controller.

GETC CHANNEL NUMBER SWITCH SETTINGS

Switch 3, sections 1 thru 5 are used to set the channel number for the station associated with the GETC shelf. These channel numbers are used by the Site Controller and System Manager when defining the system. Table 5 lists the available channel numbers and their associated switch settings.

Table 5 - Channel Number Switch Settings

CH #	GETC SWITCH 3 DIP SWITCH SELECTION (LSB) 1	2	3	4	(MSB) 5	CH #	GETC SWITCH 3 DIP SWITCH SELECTION (LSB) 1	2	3	4	(MSB) 5
0	C	C	C	C	C	16	C	C	C	C	O
1	O	C	C	C	C	17	O	C	C	C	O
2	C	O	C	C	C	18	C	O	C	C	O
3	O	O	C	C	C	19	O	O	C	C	O
4	C	C	O	C	C	20	C	C	O	C	O
5	O	C	O	C	C	21	O	C	O	C	O
6	C	O	O	C	C	22	C	O	O	C	O
7	O	O	O	C	C	23	O	O	O	C	O
8	C	C	C	O	C	24	C	C	C	O	O
9	O	C	C	O	C	25	O	C	C	O	O
10	C	O	C	O	C	26	C	O	C	O	O
11	O	O	C	O	C	27	O	O	C	O	O
12	C	C	O	O	C	28	C	C	O	O	O
13	O	C	O	O	C	29	O	C	O	O	O
14	C	O	O	O	C	30	C	O	O	O	O
15	O	O	O	O	C	31	O	O	O	O	O

O = open switch position (1)
C = closed switch position (0)

For Group 17 software or later:

Allowable working and control channels range from 1 to 24.
Allowable downlink channels range from 1 to 31. Typically downlinks are in the range 25-28. All uplinks use Channel 0 settings.

In channel assignments:

29 = call queued
30 = system busy
31 = call denied
28 = convert to callee

SPECIAL FUNCTION

When switch 3, sections 1-5 are set to channel number 27, sections 6 thru 8 form a mode-selection counter. The modes listed in Table 6 are currently defined.
This function is only applicable for G16 or earlier.

Table 6 - GETC Modes

GETC MODE	S6	S7	S8
MULTISITE DOWNLINK	C	C	C
MULTISITE UPLINK	O	C	C

O = open switch position (1)
C = closed switch position (0)

FRONT PANEL INDICATORS

The front panel LED indicators are used to display the state of operation of the GETC. Table 7 lists the indicators and their functions. If both L6 and L7 are on simultaneously, the GETC is in the control channel mode of operation.

Table 7 - Working Channel GETC Indicators

INDICATOR	LED NUMBER	INDICATOR STATE ON	OFF
L1	H7	Failsoft	Site Controller Link
L2	H6	Remote Audio path selected.	Normal Operation
L3	H5	Tx Load	—
L4	H4	Tx Data	—
L5	H3	Tx Clock	—
L6	H2	LSD/Voice	—
L7	H1	HSD	Voice Path

APPENDIX A

GETC FREQUENCY SELECTION

SWITCH SETTINGS

FOR

800 MHZ APPLICATIONS

TX FREQ MHZ	S2-1 THRU 4	S1-1 THRU 7	TX FREQ MHZ	S2-1 THRU 4	S1-1 THRU 7	TX FREQ MHZ	S2-1 THRU 4	S1-1 THRU 7
			0 = CLOSED or ON 1 = OPEN or OFF					
851.0125	0000	1000111	851.6625	1000	1010010	852.3125	1000	1001101
851.0250	0000	0100111	851.6750	1000	0110010	852.3250	1000	0101101
851.0375	0000	1100111	851.6875	1000	1110010	852.3375	1000	1101101
851.0500	0000	0010111	851.7000	1000	0001010	852.3500	1000	0011101
851.0625	0000	1010111	851.7125	1000	1001010	852.3625	1000	1011101
851.0750	0000	0110111	851.7250	1000	0101010	852.3750	1000	0111101
851.0875	0000	1110111	851.7375	1000	1101010	852.3875	1000	1111101
851.1000	0000	0001111	851.7500	1000	0011010	852.4000	1000	0000011
851.1125	0000	1001111	851.7625	1000	1011010	852.4125	1000	1000011
851.1250	0000	0101111	851.7750	1000	0111010	852.4250	1000	0100011
851.1375	0000	1101111	851.7875	1000	1111010	852.4375	1000	1100011
851.1500	0000	0011111	851.8000	1000	0000110	852.4500	1000	0010011
851.1625	0000	1011111	851.8125	1000	1000110	852.4625	1000	1010011
851.1750	0000	0111111	851.8250	1000	0100110	852.4750	1000	0110011
851.1875	0000	1111111	851.8375	1000	1100110	852.4875	1000	1110011
851.2000	1000	0000000	851.8500	1000	0010110	852.5000	1000	0001011
851.2125	1000	1000000	851.8625	1000	1010110	852.5125	1000	1001011
851.2250	1000	0100000	851.8750	1000	0110110	852.5250	1000	0101011
851.2375	1000	1100000	851.8875	1000	1110110	852.5375	1000	1101011
851.2500	1000	0010000	851.9000	1000	0001110	852.5500	1000	0011011
851.2625	1000	1010000	851.9125	1000	1001110	852.5625	1000	1011011
851.2750	1000	0110000	851.9250	1000	0101110	852.5750	1000	0111011
851.2875	1000	1110000	851.9375	1000	1101110	852.5875	1000	1111011
851.3000	1000	0001000	851.9500	1000	0011110	852.6000	1000	0000111
851.3125	1000	1001000	851.9625	1000	1011110	852.6125	1000	1000111
851.3250	1000	0101000	851.9750	1000	0111110	852.6250	1000	0100111
851.3375	1000	1101000	851.9875	1000	1111110	852.6375	1000	1100111
851.3500	1000	0011000	852.0000	1000	0000001	852.6500	1000	0010111
851.3625	1000	1011000	852.0125	1000	1000001	852.6625	1000	1010111
851.3750	1000	0111000	852.0250	1000	0100001	852.6750	1000	0110111
851.3875	1000	1111000	852.0375	1000	1100001	852.6875	1000	1110111
851.4000	1000	0000100	852.0500	1000	0010001	852.7000	1000	0001111
851.4125	1000	1000100	852.0625	1000	1010001	852.7125	1000	1001111
851.4250	1000	0100100	852.0750	1000	0110001	852.7250	1000	0101111
851.4375	1000	1100100	852.0875	1000	1110001	852.7375	1000	1101111
851.4500	1000	0010100	852.1000	1000	0001001	852.7500	1000	0011111
851.4625	1000	1010100	852.1125	1000	1001001	852.7625	1000	1011111
851.4750	1000	0110100	852.1250	1000	0101001	852.7750	1000	0111111
851.4875	1000	1110100	852.1375	1000	1101001	852.7875	1000	1111111
851.5000	1000	0001100	852.1500	1000	0011001	852.8000	0100	0000000
851.5125	1000	1001100	852.1625	1000	1011001	852.8125	0100	1000000
851.5250	1000	0101100	852.1750	1000	0111001	852.8250	0100	0100000
851.5375	1000	1101100	852.1875	1000	1111001	852.8375	0100	1100000
851.5500	1000	0011100	852.2000	1000	0000101	852.8500	0100	0010000
851.5625	1000	1011100	852.2125	1000	1000101	852.8625	0100	1010000
851.5750	1000	0111100	852.2250	1000	0100101	852.8750	0100	0110000
851.5875	1000	1111100	852.2375	1000	1100101	852.8875	0100	1110000
851.6000	1000	0000010	852.2500	1000	0010101	852.9000	0100	0001000
851.6125	1000	1000010	852.2625	1000	1010101	852.9125	0100	1001000
851.6250	1000	0100010	852.2750	1000	0110101	852.9250	0100	0101000
851.6375	1000	1100010	852.2875	1000	1110101	852.9375	0100	1101000
851.6500	1000	0010010	852.3000	1000	0001101	852.9500	0100	0011000

TX FREQ MHZ	S2-1 THRU 4	S1-1 THRU 7	TX FREQ MHZ	S2-1 THRU 4	S1-1 THRU 7	TX FREQ MHZ	S2-1 THRU 4	S1-1 THRU 7
			0 = CLOSED or ON 1 = OPEN or OFF					
852.9625	0100	1011000	853.6125	0100	1000001	854.2625	0100	1010111
852.9750	0100	0111000	853.6250	0100	0100001	854.2750	0100	0110111
852.9875	0100	1111000	853.6375	0100	1100001	854.2875	0100	1110111
853.0000	0100	0000100	853.6500	0100	0010001	854.3000	0100	0001111
853.0125	0100	1000100	853.6625	0100	1010001	854.3125	0100	1001111
853.0250	0100	0100100	853.6750	0100	0110001	854.3250	0100	0101111
853.0375	0100	1100100	853.6875	0100	1110001	854.3375	0100	1101111
853.0500	0100	0010100	853.7000	0100	0001001	854.3500	0100	0011111
853.0625	0100	1010100	853.7125	0100	1001001	854.3625	0100	1011111
853.0750	0100	0110100	853.7250	0100	0101001	854.3750	0100	0111111
853.0875	0100	1110100	853.7375	0100	1101001	854.3875	0100	1111111
853.1000	0100	0001100	853.7500	0100	0011001	854.4000	1100	0000000
853.1125	0100	1001100	853.7625	0100	1011001	854.4125	1100	1000000
853.1250	0100	0101100	853.7750	0100	0111001	854.4250	1100	0100000
853.1375	0100	1101100	853.7875	0100	1111001	854.4375	1100	1100000
853.1500	0100	0011100	853.8000	0100	0000101	854.4500	1100	0010000
853.1625	0100	1011100	853.8125	0100	1000101	854.4625	1100	1010000
853.1750	0100	0111100	853.8250	0100	0100101	854.4750	1100	0110000
853.1875	0100	1111100	853.8375	0100	1100101	854.4875	1100	1110000
853.2000	0100	0000010	853.8500	0100	0010101	854.5000	1100	0001000
853.2125	0100	1000010	853.8625	0100	1010101	854.5125	1100	1001000
853.2250	0100	0100010	853.8750	0100	0110101	854.5250	1100	0101000
853.2375	0100	1100010	853.8875	0100	1110101	854.5375	1100	1101000
853.2500	0100	0010010	853.9000	0100	0001101	854.5500	1100	0011000
853.2625	0100	1010010	853.9125	0100	1001101	854.5625	1100	1011000
853.2750	0100	0110010	853.9250	0100	0101101	854.5750	1100	0111000
853.2875	0100	1110010	853.9375	0100	1101101	854.5875	1100	1111000
853.3000	0100	0001010	853.9500	0100	0011101	854.6000	1100	0000100
853.3125	0100	1001010	853.9625	0100	1011101	854.6125	1100	1000100
853.3250	0100	0101010	853.9750	0100	0111101	854.6250	1100	0100100
853.3375	0100	1101010	853.9875	0100	1111101	854.6375	1100	1100100
853.3500	0100	0011010	854.0000	0100	0000011	854.6500	1100	0010100
853.3625	0100	1011010	854.0125	0100	1000011	854.6625	1100	1010100
853.3750	0100	0111010	854.0250	0100	0100011	854.6750	1100	0110100
853.3875	0100	1111010	854.0375	0100	1100011	854.6875	1100	1110100
853.4000	0100	0000110	854.0500	0100	0010011	854.7000	1100	0001100
853.4125	0100	1000110	854.0625	0100	1010011	854.7125	1100	1001100
853.4250	0100	0100110	854.0750	0100	0110011	854.7250	1100	0101100
853.4375	0100	1100110	854.0875	0100	1110011	854.7375	1100	1101100
853.4500	0100	0010110	854.1000	0100	0001011	854.7500	1100	0011100
853.4625	0100	1010110	854.1125	0100	1001011	854.7625	1100	1011100
853.4750	0100	0110110	854.1250	0100	0101011	854.7750	1100	0111100
853.4875	0100	1110110	854.1375	0100	1101011	854.7875	1100	1111100
853.5000	0100	0001110	854.1500	0100	0011011	854.8000	1100	0000010
853.5125	0100	1001110	854.1625	0100	1011011	854.8125	1100	1000010
853.5250	0100	0101110	854.1750	0100	0111011	854.8250	1100	0100010
853.5375	0100	1101110	854.1875	0100	1111011	854.8375	1100	1100010
853.5500	0100	0011110	854.2000	0100	0000111	854.8500	1100	0010010
853.5625	0100	1011110	854.2125	0100	1000111	854.8625	1100	1010010
853.5750	0100	0111110	854.2250	0100	0100111	854.8750	1100	0110010
853.5875	0100	1111110	854.2375	0100	1100111	854.8875	1100	1110010
853.6000	0100	0000001	854.2500	0100	0010111	854.9000	1100	0001010

TX FREQ MHZ	S2-1 THRU 4	S1-1 THRU 7	TX FREQ MHZ	S2-1 THRU 4	S1-1 THRU 7	TX FREQ MHZ	S2-1 THRU 4	S1-1 THRU 7
			0 = CLOSED or ON 1 = OPEN or OFF					
854.9125	1100	1001010	855.5625	1100	1011101	856.2125	0010	1000100
854.9250	1100	0101010	855.5750	1100	0111101	856.2250	0010	0100100
854.9375	1100	1101010	855.5875	1100	1111101	856.2375	0010	1100100
854.9500	1100	0011010	855.6000	1100	0000011	856.2500	0010	0010100
854.9625	1100	1011010	855.6125	1100	1000011	856.2625	0010	1010100
854.9750	1100	0111010	855.6250	1100	0100011	856.2750	0010	0110100
854.9875	1100	1111010	855.6375	1100	1100011	856.2875	0010	1110100
855.0000	1100	0000110	855.6500	1100	0010011	856.3000	0010	0001100
855.0125	1100	1000110	855.6625	1100	1010011	856.3125	0010	1001100
855.0250	1100	0100110	855.6750	1100	0110011	856.3250	0010	0101100
855.0375	1100	1100110	855.6875	1100	1110011	856.3375	0010	1101100
855.0500	1100	0010110	855.7000	1100	0001011	856.3500	0010	0011100
855.0625	1100	1010110	855.7125	1100	1001011	856.3625	0010	1011100
855.0750	1100	0110110	855.7250	1100	0101011	856.3750	0010	0111100
855.0875	1100	1110110	855.7375	1100	1101011	856.3875	0010	1111100
855.1000	1100	0001110	855.7500	1100	0011011	856.4000	0010	0000010
855.1125	1100	1001110	855.7625	1100	1011011	856.4125	0010	1000010
855.1250	1100	0101110	855.7750	1100	0111011	856.4250	0010	0100010
855.1375	1100	1101110	855.7875	1100	1111011	856.4375	0010	1100010
855.1500	1100	0011110	855.8000	1100	0000111	856.4500	0010	0010010
855.1625	1100	1011110	855.8125	1100	1000111	856.4625	0010	1010010
855.1750	1100	0111110	855.8250	1100	0100111	856.4750	0010	0110010
855.1875	1100	1111110	855.8375	1100	1100111	856.4875	0010	1110010
855.2000	1100	0000001	855.8500	1100	0010111	856.5000	0010	0001010
855.2125	1100	1000001	855.8625	1100	1010111	856.5125	0010	1001010
855.2250	1100	0100001	855.8750	1100	0110111	856.5250	0010	0101010
855.2375	1100	1100001	855.8875	1100	1110111	856.5375	0010	1101010
855.2500	1100	0010001	855.9000	1100	0001111	856.5500	0010	0011010
855.2625	1100	1010001	855.9125	1100	1001111	856.5625	0010	1011010
855.2750	1100	0110001	855.9250	1100	0101111	856.5750	0010	0111010
855.2875	1100	1110001	855.9375	1100	1101111	856.5875	0010	1111010
855.3000	1100	0001001	855.9500	1100	0011111	856.6000	0010	0000110
855.3125	1100	1001001	855.9625	1100	1011111	856.6125	0010	1000110
855.3250	1100	0101001	855.9750	1100	0111111	856.6250	0010	0100110
855.3375	1100	1101001	855.9875	1100	1111111	856.6375	0010	1100110
855.3500	1100	0011001	856.0000	0010	0000000	856.6500	0010	0010110
855.3625	1100	1011001	856.0125	0010	1000000	856.6625	0010	1010110
855.3750	1100	0111001	856.0250	0010	0100000	856.6750	0010	0110110
855.3875	1100	1111001	856.0375	0010	1100000	856.6875	0010	1110110
855.4000	1100	0000101	856.0500	0010	0010000	856.7000	0010	0001110
855.4125	1100	1000101	856.0625	0010	1010000	856.7125	0010	1001110
855.4250	1100	0100101	856.0750	0010	0110000	856.7250	0010	0101110
855.4375	1100	1100101	856.0875	0010	1110000	856.7375	0010	1101110
855.4500	1100	0010101	856.1000	0010	0001000	856.7500	0010	0011110
855.4625	1100	1010101	856.1125	0010	1001000	856.7625	0010	1011110
855.4750	1100	0110101	856.1250	0010	0101000	856.7750	0010	0111110
855.4875	1100	1110101	856.1375	0010	1101000	856.7875	0010	1111110
855.5000	1100	0001101	856.1500	0010	0011000	856.8000	0010	0000001
855.5125	1100	1001101	856.1625	0010	1011000	856.8125	0010	1000001
855.5250	1100	0101101	856.1750	0010	0111000	856.8250	0010	0100001
855.5375	1100	1101101	856.1875	0010	1111000	856.8375	0010	1100001
855.5500	1100	0011101	856.2000	0010	0000100	856.8500	0010	0010001

TX FREQ MHZ	S2-1 THRU 4	S1-1 THRU 7	TX FREQ MHZ	S2-1 THRU 4	S1-1 THRU 7	TX FREQ MHZ	S2-1 THRU 4	S1-1 THRU 7
			0 = CLOSED or ON 1 = OPEN or OFF					
856.8625	0010	1010001	857.5125	0010	1001111	858.1625	1010	1011010
856.8750	0010	0110001	857.5250	0010	0101111	858.1750	1010	0111010
856.8875	0010	1110001	857.5375	0010	1101111	858.1875	1010	1111010
856.9000	0010	0001001	857.5500	0010	0011111	858.2000	1010	0000110
856.9125	0010	1001001	857.5625	0010	1011111	858.2125	1010	1000110
856.9250	0010	0101001	857.5750	0010	0111111	858.2250	1010	0100110
856.9375	0010	1101001	857.5875	0010	1111111	858.2375	1010	1100110
856.9500	0010	0011001	857.6000	1010	0000000	858.2500	1010	0010110
856.9625	0010	1011001	857.6125	1010	1000000	858.2625	1010	1010110
856.9750	0010	0111001	857.6250	1010	0100000	858.2750	1010	0110110
856.9875	0010	1111001	857.6375	1010	1100000	858.2875	1010	1110110
857.0000	0010	0000101	857.6500	1010	0010000	858.3000	1010	0001110
857.0125	0010	1000101	857.6625	1010	1010000	858.3125	1010	1001110
857.0250	0010	0100101	857.6750	1010	0110000	858.3250	1010	0101110
857.0375	0010	1100101	857.6875	1010	1110000	858.3375	1010	1101110
857.0500	0010	0010101	857.7000	1010	0001000	858.3500	1010	0011110
857.0625	0010	1010101	857.7125	1010	1001000	858.3625	1010	1011110
857.0750	0010	0110101	857.7250	1010	0101000	858.3750	1010	0111110
857.0875	0010	1110101	857.7375	1010	1101000	858.3875	1010	1111110
857.1000	0010	0001101	857.7500	1010	0011000	858.4000	1010	0000001
857.1125	0010	1001101	857.7625	1010	1011000	858.4125	1010	1000001
857.1250	0010	0101101	857.7750	1010	0111000	858.4250	1010	0100001
857.1375	0010	1101101	857.7875	1010	1111000	858.4375	1010	1100001
857.1500	0010	0011101	857.8000	1010	0000100	858.4500	1010	0010001
857.1625	0010	1011101	857.8125	1010	1000100	858.4625	1010	1010001
857.1750	0010	0111101	857.8250	1010	0100100	858.4750	1010	0110001
857.1875	0010	1111101	857.8375	1010	1100100	858.4875	1010	1110001
857.2000	0010	0000011	857.8500	1010	0010100	858.5000	1010	0001001
857.2125	0010	1000011	857.8625	1010	1010100	858.5125	1010	1001001
857.2250	0010	0100011	857.8750	1010	0110100	858.5250	1010	0101001
857.2375	0010	1100011	857.8875	1010	1110100	858.5375	1010	1101001
857.2500	0010	0010011	857.9000	1010	0001100	858.5500	1010	0011001
857.2625	0010	1010011	857.9125	1010	1001100	858.5625	1010	1011001
857.2750	0010	0110011	857.9250	1010	0101100	858.5750	1010	0111001
857.2875	0010	1110011	857.9375	1010	1101100	858.5875	1010	1111001
857.3000	0010	0001011	857.9500	1010	0011100	858.6000	1010	0000101
857.3125	0010	1001011	857.9625	1010	1011100	858.6125	1010	1000101
857.3250	0010	0101011	857.9750	1010	0111100	858.6250	1010	0100101
857.3375	0010	1101011	857.9875	1010	1111100	858.6375	1010	1100101
857.3500	0010	0011011	858.0000	1010	0000010	858.6500	1010	0010101
857.3625	0010	1011011	858.0125	1010	1000010	858.6625	1010	1010101
857.3750	0010	0111011	858.0250	1010	0100010	858.6750	1010	0110101
857.3875	0010	1111011	858.0375	1010	1100010	858.6875	1010	1110101
857.4000	0010	0000111	858.0500	1010	0010010	858.7000	1010	0001101
857.4125	0010	1000111	858.0625	1010	1010010	858.7125	1010	1001101
857.4250	0010	0100111	858.0750	1010	0110010	858.7250	1010	0101101
857.4375	0010	1100111	858.0875	1010	1110010	858.7375	1010	1101101
857.4500	0010	0010111	858.1000	1010	0001010	858.7500	1010	0011101
857.4625	0010	1010111	858.1125	1010	1001010	858.7625	1010	1011101
857.4750	0010	0110111	858.1250	1010	0101010	858.7750	1010	0111101
857.4875	0010	1110111	858.1375	1010	1101010	858.7875	1010	1111101
857.5000	0010	0001111	858.1500	1010	0011010	858.8000	1010	0000011

TX FREQ MHZ	S2-1 THRU 4	S1-1 THRU 7	TX FREQ MHZ	S2-1 THRU 4	S1-1 THRU 7	TX FREQ MHZ	S2-1 THRU 4	S1-1 THRU 7
		0 = CLOSED or ON 1 = OPEN or OFF						
858.8125	1010	1000011	859.4625	0110	1010100	860.1125	0110	1001001
858.8250	1010	0100011	859.4750	0110	0110100	860.1250	0110	0101001
858.8375	1010	1100011	859.4875	0110	1110100	860.1375	0110	1101001
858.8500	1010	0010011	859.5000	0110	0001100	860.1500	0110	0011001
858.8625	1010	1010011	859.5125	0110	1001100	860.1625	0110	1011001
858.8750	1010	0110011	859.5250	0110	0101100	860.1750	0110	0111001
858.8875	1010	1110011	859.5375	0110	1101100	860.1875	0110	1111001
858.9000	1010	0001011	859.5500	0110	0011100	860.2000	0110	0000101
858.9125	1010	1001011	859.5625	0110	1011100	860.2125	0110	1000101
858.9250	1010	0101011	859.5750	0110	0111100	860.2250	0110	0100101
858.9375	1010	1101011	859.5875	0110	1111100	860.2375	0110	1100101
858.9500	1010	0011011	859.6000	0110	0000010	860.2500	0110	0010101
858.9625	1010	1011011	859.6125	0110	1000010	860.2625	0110	1010101
858.9750	1010	0111011	859.6250	0110	0100010	860.2750	0110	0110101
858.9875	1010	1111011	859.6375	0110	1100010	860.2875	0110	1110101
859.0000	1010	0000111	859.6500	0110	0010010	860.3000	0110	0001101
859.0125	1010	1000111	859.6625	0110	1010010	860.3125	0110	1001101
859.0250	1010	0100111	859.6750	0110	0110010	860.3250	0110	0101101
859.0375	1010	1100111	859.6875	0110	1110010	860.3375	0110	1101101
859.0500	1010	0010111	859.7000	0110	0001010	860.3500	0110	0011101
859.0625	1010	1010111	859.7125	0110	1001010	860.3625	0110	1011101
859.0750	1010	0110111	859.7250	0110	0101010	860.3750	0110	0111101
859.0875	1010	1110111	859.7375	0110	1101010	860.3875	0110	1111101
859.1000	1010	0001111	859.7500	0110	0011010	860.4000	0110	0000011
859.1125	1010	1001111	859.7625	0110	1011010	860.4125	0110	1000011
859.1250	1010	0101111	859.7750	0110	0111010	860.4250	0110	0100011
859.1375	1010	1101111	859.7875	0110	1111010	860.4375	0110	1100011
859.1500	1010	0011111	859.8000	0110	0000110	860.4500	0110	0010011
859.1625	1010	1011111	859.8125	0110	1000110	860.4625	0110	1010011
859.1750	1010	0111111	859.8250	0110	0100110	860.4750	0110	0110011
859.1875	1010	1111111	859.8375	0110	1100110	860.4875	0110	1110011
859.2000	0110	0000000	859.8500	0110	0010110	860.5000	0110	0001011
859.2125	0110	1000000	859.8625	0110	1010110	860.5125	0110	1001011
859.2250	0110	0100000	859.8750	0110	0110110	860.5250	0110	0101011
859.2375	0110	1100000	859.8875	0110	1110110	860.5375	0110	1101011
859.2500	0110	0010000	859.9000	0110	0001110	860.5500	0110	0011011
859.2625	0110	1010000	859.9125	0110	1001110	860.5625	0110	1011011
859.2750	0110	0110000	859.9250	0110	0101110	860.5750	0110	0111011
859.2875	0110	1110000	859.9375	0110	1101110	860.5875	0110	1111011
859.3000	0110	0001000	859.9500	0110	0011110	860.6000	0110	0000111
859.3125	0110	1001000	859.9625	0110	1011110	860.6125	0110	1000111
859.3250	0110	0101000	859.9750	0110	0111110	860.6250	0110	0100111
859.3375	0110	1101000	859.9875	0110	1111110	860.6375	0110	1100111
859.3500	0110	0011000	860.0000	0110	0000001	860.6500	0110	0010111
859.3625	0110	1011000	860.0125	0110	1000001	860.6625	0110	1010111
859.3750	0110	0111000	860.0250	0110	0100001	860.6750	0110	0110111
859.3875	0110	1111000	860.0375	0110	1100001	860.6875	0110	1110111
859.4000	0110	0000100	860.0500	0110	0010001	860.7000	0110	0001111
859.4125	0110	1000100	860.0625	0110	1010001	860.7125	0110	1001111
859.4250	0110	0100100	860.0750	0110	0110001	860.7250	0110	0101111
859.4375	0110	1100100	860.0875	0110	1110001	860.7375	0110	1101111
859.4500	0110	0010100	860.1000	0110	0001001	860.7500	0110	0011111

TX FREQ MHZ	S2-1 THRU 4	S1-1 THRU 7	TX FREQ MHZ	S2-1 THRU 4	S1-1 THRU 7	TX FREQ MHZ	S2-1 THRU 4	S1-1 THRU 7
		0 = CLOSED or ON 1 = OPEN or OFF						
860.7625	0110	1011111	861.4125	1110	1000110	862.0625	1110	1010011
860.7750	0110	0111111	861.4250	1110	0100110	862.0750	1110	0110011
860.7875	0110	1111111	861.4375	1110	1100110	862.0875	1110	1110011
860.8000	1110	0000000	861.4500	1110	0010110	862.1000	1110	0001011
860.8125	1110	1000000	861.4625	1110	1010110	862.1125	1110	1001011
860.8250	1110	0100000	861.4750	1110	0110110	862.1250	1110	0101011
860.8375	1110	1100000	861.4875	1110	1110110	862.1375	1110	1101011
860.8500	1110	0010000	861.5000	1110	0001110	862.1500	1110	0011011
860.8625	1110	1010000	861.5125	1110	1001110	862.1625	1110	1011011
860.8750	1110	0110000	861.5250	1110	0101110	862.1750	1110	0111011
860.8875	1110	1110000	861.5375	1110	1101110	862.1875	1110	1111011
860.9000	1110	0001000	861.5500	1110	0011110	862.2000	1110	0000111
860.9125	1110	1001000	861.5625	1110	1011110	862.2125	1110	1000111
860.9250	1110	0101000	861.5750	1110	0111110	862.2250	1110	0100111
860.9375	1110	1101000	861.5875	1110	1111110	862.2375	1110	1100111
860.9500	1110	0011000	861.6000	1110	0000001	862.2500	1110	0010111
860.9625	1110	1011000	861.6125	1110	1000001	862.2625	1110	1010111
860.9750	1110	0111000	861.6250	1110	0100001	862.2750	1110	0110111
860.9875	1110	1111000	861.6375	1110	1100001	862.2875	1110	1110111
861.0000	1110	0000100	861.6500	1110	0010001	862.3000	1110	0001111
861.0125	1110	1000100	861.6625	1110	1010001	862.3125	1110	1001111
861.0250	1110	0100100	861.6750	1110	0110001	862.3250	1110	0101111
861.0375	1110	1100100	861.6875	1110	1110001	862.3375	1110	1101111
861.0500	1110	0010100	861.7000	1110	0001001	862.3500	1110	0011111
861.0625	1110	1010100	861.7125	1110	1001001	862.3625	1110	1011111
861.0750	1110	0110100	861.7250	1110	0101001	862.3750	1110	0111111
861.0875	1110	1110100	861.7375	1110	1101001	862.3875	1110	1111111
861.1000	1110	0001100	861.7500	1110	0011001	862.4000	0001	0000000
861.1125	1110	1001100	861.7625	1110	1011001	862.4125	0001	1000000
861.1250	1110	0101100	861.7750	1110	0111001	862.4250	0001	0100000
861.1375	1110	1101100	861.7875	1110	1111001	862.4375	0001	1100000
861.1500	1110	0011100	861.8000	1110	0000101	862.4500	0001	0010000
861.1625	1110	1011100	861.8125	1110	1000101	862.4625	0001	1010000
861.1750	1110	0111100	861.8250	1110	0100101	862.4750	0001	0110000
861.1875	1110	1111100	861.8375	1110	1100101	862.4875	0001	1110000
861.2000	1110	0000010	861.8500	1110	0010101	862.5000	0001	0001000
861.2125	1110	1000010	861.8625	1110	1010101	862.5125	0001	1001000
861.2250	1110	0100010	861.8750	1110	0110101	862.5250	0001	0101000
861.2375	1110	1100010	861.8875	1110	1110101	862.5375	0001	1101000
861.2500	1110	0010010	861.9000	1110	0001101	862.5500	0001	0011000
861.2625	1110	1010010	861.9125	1110	1001101	862.5625	0001	1011000
861.2750	1110	0110010	861.9250	1110	0101101	862.5750	0001	0111000
861.2875	1110	1110010	861.9375	1110	1101101	862.5875	0001	1111000
861.3000	1110	0001010	861.9500	1110	0011101	862.6000	0001	0000100
861.3125	1110	1001010	861.9625	1110	1011101	862.6125	0001	1000100
861.3250	1110	0101010	861.9750	1110	0111101	862.6250	0001	0100100
861.3375	1110	1101010	861.9875	1110	1111101	862.6375	0001	1100100
861.3500	1110	0011010	862.0000	1110	0000011	862.6500	0001	0010100
861.3625	1110	1011010	862.0125	1110	1000011	862.6625	0001	1010100
861.3750	1110	0111010	862.0250	1110	0100011	862.6750	0001	0110100
861.3875	1110	1111010	862.0375	1110	1100011	862.6875	0001	1110100
861.4000	1110	0000110	862.0500	1110	0010011	862.7000	0001	0001100

TX FREQ MHZ	S2-1 THRU 4	S1-1 THRU 7	TX FREQ MHZ	S2-1 THRU 4	S1-1 THRU 7	TX FREQ MHZ	S2-1 THRU 4	S1-1 THRU 7
		0 = CLOSED or ON 1 = OPEN or OFF						
862.7125	0001	1001100	863.3625	0001	1011001	864.0125	1001	1000000
862.7250	0001	0101100	863.3750	0001	0111001	864.0250	1001	0100000
862.7375	0001	1101100	863.3875	0001	1111001	864.0375	1001	1100000
862.7500	0001	0011100	863.4000	0001	0000101	864.0500	1001	0010000
862.7625	0001	1011100	863.4125	0001	1000101	864.0625	1001	1010000
862.7750	0001	0111100	863.4250	0001	0100101	864.0750	1001	0110000
862.7875	0001	1111100	863.4375	0001	1100101	864.0875	1001	1110000
862.8000	0001	0000010	863.4500	0001	0010101	864.1000	1001	0001000
862.8125	0001	1000010	863.4625	0001	1010101	864.1125	1001	1001000
862.8250	0001	0100010	863.4750	0001	0110101	864.1250	1001	0101000
862.8375	0001	1100010	863.4875	0001	1110101	864.1375	1001	1101000
862.8500	0001	0010010	863.5000	0001	0001101	864.1500	1001	0011000
862.8625	0001	1010010	863.5125	0001	1001101	864.1625	1001	1011000
862.8750	0001	0110010	863.5250	0001	0101101	864.1750	1001	0111000
862.8875	0001	1110010	863.5375	0001	1101101	864.1875	1001	1111000
862.9000	0001	0001010	863.5500	0001	0011101	864.2000	1001	0000100
862.9125	0001	1001010	863.5625	0001	1011101	864.2125	1001	1000100
862.9250	0001	0101010	863.5750	0001	0111101	864.2250	1001	0100100
862.9375	0001	1101010	863.5875	0001	1111101	864.2375	1001	1100100
862.9500	0001	0011010	863.6000	0001	0000011	864.2500	1001	0010100
862.9625	0001	1011010	863.6125	0001	1000011	864.2625	1001	1010100
862.9750	0001	0111010	863.6250	0001	0100011	864.2750	1001	0110100
862.9875	0001	1111010	863.6375	0001	1100011	864.2875	1001	1110100
863.0000	0001	0000110	863.6500	0001	0010011	864.3000	1001	0001100
863.0125	0001	1000110	863.6625	0001	1010011	864.3125	1001	1001100
863.0250	0001	0100110	863.6750	0001	0110011	864.3250	1001	0101100
863.0375	0001	1100110	863.6875	0001	1110011	864.3375	1001	1101100
863.0500	0001	0010110	863.7000	0001	0001011	864.3500	1001	0011100
863.0625	0001	1010110	863.7125	0001	1001011	864.3625	1001	1011100
863.0750	0001	0110110	863.7250	0001	0101011	864.3750	1001	0111100
863.0875	0001	1110110	863.7375	0001	1101011	864.3875	1001	1111100
863.1000	0001	0001110	863.7500	0001	0011011	864.4000	1001	0000010
863.1125	0001	1001110	863.7625	0001	1011011	864.4125	1001	1000010
863.1250	0001	0101110	863.7750	0001	0111011	864.4250	1001	0100010
863.1375	0001	1101110	863.7875	0001	1111011	864.4375	1001	1100010
863.1500	0001	0011110	863.8000	0001	0000111	864.4500	1001	0010010
863.1625	0001	1011110	863.8125	0001	1000111	864.4625	1001	1010010
863.1750	0001	0111110	863.8250	0001	0100111	864.4750	1001	0110010
863.1875	0001	1111110	863.8375	0001	1100111	864.4875	1001	1110010
863.2000	0001	0000001	863.8500	0001	0010111	864.5000	1001	0001010
863.2125	0001	1000001	863.8625	0001	1010111	864.5125	1001	1001010
863.2250	0001	0100001	863.8750	0001	0110111	864.5250	1001	0101010
863.2375	0001	1100001	863.8875	0001	1110111	864.5375	1001	1101010
863.2500	0001	0010001	863.9000	0001	0001111	864.5500	1001	0011010
863.2625	0001	1010001	863.9125	0001	1001111	864.5625	1001	1011010
863.2750	0001	0110001	863.9250	0001	0101111	864.5750	1001	0111010
863.2875	0001	1110001	863.9375	0001	1101111	864.5875	1001	1111010
863.3000	0001	0001001	863.9500	0001	0011111	864.6000	1001	0000110
863.3125	0001	1001001	863.9625	0001	1011111	864.6125	1001	1000110
863.3250	0001	0101001	863.9750	0001	0111111	864.6250	1001	0100110
863.3375	0001	1101001	863.9875	0001	1111111	864.6375	1001	1100110
863.3500	0001	0011001	864.0000	1001	0000000	864.6500	1001	0010110

TX FREQ MHZ	S2-1 THRU 4	S1-1 THRU 7	TX FREQ MHZ	S2-1 THRU 4	S1-1 THRU 7	TX FREQ MHZ	S2-1 THRU 4	S1-1 THRU 7
		0 = CLOSED or ON 1 = OPEN or OFF						
864.6625	1001	1010110	865.3125	1001	1001011	865.9625	0101	1011100
864.6750	1001	0110110	865.3250	1001	0101011	865.9750	0101	0111100
864.6875	1001	1110110	865.3375	1001	1101011	865.9875	0101	1111100
864.7000	1001	0001110	865.3500	1001	0011011	866.0000	0101	0000010
864.7125	1001	1001110	865.3625	1001	1011011	866.0125	0101	1000010
864.7250	1001	0101110	865.3750	1001	0111011	866.0250	0101	0100010
864.7375	1001	1101110	865.3875	1001	1111011	866.0375	0101	1100010
864.7500	1001	0011110	865.4000	1001	0000111	866.0500	0101	0010010
864.7625	1001	1011110	865.4125	1001	1000111	866.0625	0101	1010010
864.7750	1001	0111110	865.4250	1001	0100111	866.0750	0101	0110010
864.7875	1001	1111110	865.4375	1001	1100111	866.0875	0101	1110010
864.8000	1001	0000001	865.4500	1001	0010111	866.1000	0101	0001010
864.8125	1001	1000001	865.4625	1001	1010111	866.1125	0101	1001010
864.8250	1001	0100001	865.4750	1001	0110111	866.1250	0101	0101010
864.8375	1001	1100001	865.4875	1001	1110111	866.1375	0101	1101010
864.8500	1001	0010001	865.5000	1001	0001111	866.1500	0101	0011010
864.8625	1001	1010001	865.5125	1001	1001111	866.1625	0101	1011010
864.8750	1001	0110001	865.5250	1001	0101111	866.1750	0101	0111010
864.8875	1001	1110001	865.5375	1001	1101111	866.1875	0101	1111010
864.9000	1001	0001001	865.5500	1001	0011111	866.2000	0101	0000110
864.9125	1001	1001001	865.5625	1001	1011111	866.2125	0101	1000110
864.9250	1001	0101001	865.5750	1001	0111111	866.2250	0101	0100110
864.9375	1001	1101001	865.5875	1001	1111111	866.2375	0101	1100110
864.9500	1001	0011001	865.6000	0101	0000000	866.2500	0101	0010110
864.9625	1001	1011001	865.6125	0101	1000000	866.2625	0101	1010110
864.9750	1001	0111001	865.6250	0101	0100000	866.2750	0101	0110110
864.9875	1001	1111001	865.6375	0101	1100000	866.2875	0101	1110110
865.0000	1001	0000101	865.6500	0101	0010000	866.3000	0101	0001110
865.0125	1001	1000101	865.6625	0101	1010000	866.3125	0101	1001110
865.0250	1001	0100101	865.6750	0101	0110000	866.3250	0101	0101110
865.0375	1001	1100101	865.6875	0101	1110000	866.3375	0101	1101110
865.0500	1001	0010101	865.7000	0101	0001000	866.3500	0101	0011110
865.0625	1001	1010101	865.7125	0101	1001000	866.3625	0101	1011110
865.0750	1001	0110101	865.7250	0101	0101000	866.3750	0101	0111110
865.0875	1001	1110101	865.7375	0101	1101000	866.3875	0101	1111110
865.1000	1001	0001101	865.7500	0101	0011000	866.4000	0101	0000001
865.1125	1001	1001101	865.7625	0101	1011000	866.4125	0101	1000001
865.1250	1001	0101101	865.7750	0101	0111000	866.4250	0101	0100001
865.1375	1001	1101101	865.7875	0101	1111000	866.4375	0101	1100001
865.1500	1001	0011101	865.8000	0101	0000100	866.4500	0101	0010001
865.1625	1001	1011101	865.8125	0101	1000100	866.4625	0101	1010001
865.1750	1001	0111101	865.8250	0101	0100100	866.4750	0101	0110001
865.1875	1001	1111101	865.8375	0101	1100100	866.4875	0101	1110001
865.2000	1001	0000011	865.8500	0101	0010100	866.5000	0101	0001001
865.2125	1001	1000011	865.8625	0101	1010100	866.5125	0101	1001001
865.2250	1001	0100011	865.8750	0101	0110100	866.5250	0101	0101001
865.2375	1001	1100011	865.8875	0101	1110100	866.5375	0101	1101001
865.2500	1001	0010011	865.9000	0101	0001100	866.5500	0101	0011001
865.2625	1001	1010011	865.9125	0101	1001100	866.5625	0101	1011001
865.2750	1001	0110011	865.9250	0101	0101100	866.5750	0101	0111001
865.2875	1001	1110011	865.9375	0101	1101100	866.5875	0101	1111001
865.3000	1001	0001011	865.9500	0101	0011100	866.6000	0101	0000101

TX FREQ MHZ	S2-1 THRU 4	S1-1 THRU 7	TX FREQ MHZ	S2-1 THRU 4	S1-1 THRU 7	TX FREQ MHZ	S2-1 THRU 4	S1-1 THRU 7
			0 = CLOSED or ON 1 = OPEN or OFF					
866.6125	0101	1000101	867.2625	1101	1010000	867.9125	1101	1001110
866.6250	0101	0100101	867.2750	1101	0110000	867.9250	1101	0101110
866.6375	0101	1100101	867.2875	1101	1110000	867.9375	1101	1101110
866.6500	0101	0010101	867.3000	1101	0001000	867.9500	1101	0011110
866.6625	0101	1010101	867.3125	1101	1001000	867.9625	1101	1011110
866.6750	0101	0110101	867.3250	1101	0101000	867.9750	1101	0111110
866.6875	0101	1110101	867.3375	1101	1101000	867.9875	1101	1111110
866.7000	0101	0001101	867.3500	1101	0011000	868.0000	1101	0000001
866.7125	0101	1001101	867.3625	1101	1011000	868.0125	1101	1000001
866.7250	0101	0101101	867.3750	1101	0111000	868.0250	1101	0100001
866.7375	0101	1101101	867.3875	1101	1111000	868.0375	1101	1100001
866.7500	0101	0011101	867.4000	1101	0000100	868.0500	1101	0010001
866.7625	0101	1011101	867.4125	1101	1000100	868.0625	1101	1010001
866.7750	0101	0111101	867.4250	1101	0100100	868.0750	1101	0110001
866.7875	0101	1111101	867.4375	1101	1100100	868.0875	1101	1110001
866.8000	0101	0000011	867.4500	1101	0010100	868.1000	1101	0001001
866.8125	0101	1000011	867.4625	1101	1010100	868.1125	1101	1001001
866.8250	0101	0100011	867.4750	1101	0110100	868.1250	1101	0101001
866.8375	0101	1100011	867.4875	1101	1110100	868.1375	1101	1101001
866.8500	0101	0010011	867.5000	1101	0001100	868.1500	1101	0011001
866.8625	0101	1010011	867.5125	1101	1001100	868.1625	1101	1011001
866.8750	0101	0110011	867.5250	1101	0101100	868.1750	1101	0111001
866.8875	0101	1110011	867.5375	1101	1101100	868.1875	1101	1111001
866.9000	0101	0001011	867.5500	1101	0011100	868.2000	1101	0000101
866.9125	0101	1001011	867.5625	1101	1011100	868.2125	1101	1000101
866.9250	0101	0101011	867.5750	1101	0111100	868.2250	1101	0100101
866.9375	0101	1101011	867.5875	1101	1111100	868.2375	1101	1100101
866.9500	0101	0011011	867.6000	1101	0000010	868.2500	1101	0010101
866.9625	0101	1011011	867.6125	1101	1000010	868.2625	1101	1010101
866.9750	0101	0111011	867.6250	1101	0100010	868.2750	1101	0110101
866.9875	0101	1111011	867.6375	1101	1100010	868.2875	1101	1110101
867.0000	0101	0000111	867.6500	1101	0010010	868.3000	1101	0001101
867.0125	0101	1000111	867.6625	1101	1010010	868.3125	1101	1001101
867.0250	0101	0100111	867.6750	1101	0110010	868.3250	1101	0101101
867.0375	0101	1100111	867.6875	1101	1110010	868.3375	1101	1101101
867.0500	0101	0010111	867.7000	1101	0001010	868.3500	1101	0011101
867.0625	0101	1010111	867.7125	1101	1001010	868.3625	1101	1011101
867.0750	0101	0110111	867.7250	1101	0101010	868.3750	1101	0111101
867.0875	0101	1110111	867.7375	1101	1101010	868.3875	1101	1111101
867.1000	0101	0001111	867.7500	1101	0011010	868.4000	1101	0000011
867.1125	0101	1001111	867.7625	1101	1011010	868.4125	1101	1000011
867.1250	0101	0101111	867.7750	1101	0111010	868.4250	1101	0100011
867.1375	0101	1101111	867.7875	1101	1111010	868.4375	1101	1100011
867.1500	0101	0011111	867.8000	1101	0000110	868.4500	1101	0010011
867.1625	0101	1011111	867.8125	1101	1000110	868.4625	1101	1010011
867.1750	0101	0111111	867.8250	1101	0100110	868.4750	1101	0110011
867.1875	0101	1111111	867.8375	1101	1100110	868.4875	1101	1110011
867.2000	1101	0000000	867.8500	1101	0010110	868.5000	1101	0001011
867.2125	1101	1000000	867.8625	1101	1010110	868.5125	1101	1001011
867.2250	1101	0100000	867.8750	1101	0110110	868.5250	1101	0101011
867.2375	1101	1100000	867.8875	1101	1110110	868.5375	1101	1101011
867.2500	1101	0010000	867.9000	1101	0001110	868.5500	1101	0011011

TX FREQ MHZ	S2-1 THRU 4	S1-1 THRU 7	TX FREQ MHZ	S2-1 THRU 4	S1-1 THRU 7	TX FREQ MHZ	S2-1 THRU 4	S1-1 THRU 7
			0 = CLOSED or ON 1 = OPEN or OFF					
868.5625	1101	1011011	869.0375	0011	1100100	869.5250	0011	0101110
868.5750	1101	0111011	869.0500	0011	0010100	869.5375	0011	1101110
868.5875	1101	1111011	869.0625	0011	1010100	869.5500	0011	0011110
868.6000	1101	0000111	869.0750	0011	0110100	869.5625	0011	1011110
868.6125	1101	1000111	869.0875	0011	1110100	869.5750	0011	0111110
868.6250	1101	0100111	869.1000	0011	0001100	869.5875	0011	1111110
868.6375	1101	1100111	869.1125	0011	1001100	869.6000	0011	0000001
868.6500	1101	0010111	869.1250	0011	0101100	869.6125	0011	1000001
868.6625	1101	1010111	869.1375	0011	1101100	869.6250	0011	0100001
868.6750	1101	0110111	869.1500	0011	0011100	869.6375	0011	1100001
868.6875	1101	1110111	869.1625	0011	1011100	869.6500	0011	0010001
868.7000	1101	0001111	869.1750	0011	0111100	869.6625	0011	1010001
868.7125	1101	1001111	869.1875	0011	1111100	869.6750	0011	0110001
868.7250	1101	0101111	869.2000	0011	0000010	869.6875	0011	1110001
868.7375	1101	1101111	869.2125	0011	1000010	869.7000	0011	0001001
868.7500	1101	0011111	869.2250	0011	0100010	869.7125	0011	1001001
868.7625	1101	1011111	869.2375	0011	1100010	869.7250	0011	0101001
868.7750	1101	0111111	869.2500	0011	0010010	869.7375	0011	1101001
868.7875	1101	1111111	869.2625	0011	1010010	869.7500	0011	0011001
868.8000	0011	0000000	869.2750	0011	0110010	869.7625	0011	1011001
868.8125	0011	1000000	869.2875	0011	1110010	869.7750	0011	0111001
868.8250	0011	0100000	869.3000	0011	0001010	869.7875	0011	1111001
868.8375	0011	1100000	869.3125	0011	1001010	869.8000	0011	0000101
868.8500	0011	0010000	869.3250	0011	0101010	869.8125	0011	1000101
868.8625	0011	1010000	869.3375	0011	1101010	869.8250	0011	0100101
868.8750	0011	0110000	869.3500	0011	0011010	869.8375	0011	1100101
868.8875	0011	1110000	869.3625	0011	1011010	869.8500	0011	0010101
868.9000	0011	0001000	869.3750	0011	0111010	869.8625	0011	1010101
868.9125	0011	1001000	869.3875	0011	1111010	869.8750	0011	0110101
868.9250	0011	0101000	869.4000	0011	0000110	869.8875	0011	1110101
868.9375	0011	1101000	869.4125	0011	1000110	869.9000	0011	0001101
868.9500	0011	0011000	869.4250	0011	0100110	869.9125	0011	1001101
868.9625	0011	1011000	869.4375	0011	1100110	869.9250	0011	0101101
868.9750	0011	0111000	869.4500	0011	0010110	869.9375	0011	1101101
868.9875	0011	1111000	869.4625	0011	1010110	869.9500	0011	0011101
869.0000	0011	0000100	869.4750	0011	0110110	869.9625	0011	1011101
869.0125	0011	1000100	869.4875	0011	1110110	869.9750	0011	0111101
869.0250	0011	0100100	869.5000	0011	0001110	869.9875	0011	1111101

APPPENDIX B

DRAWINGS

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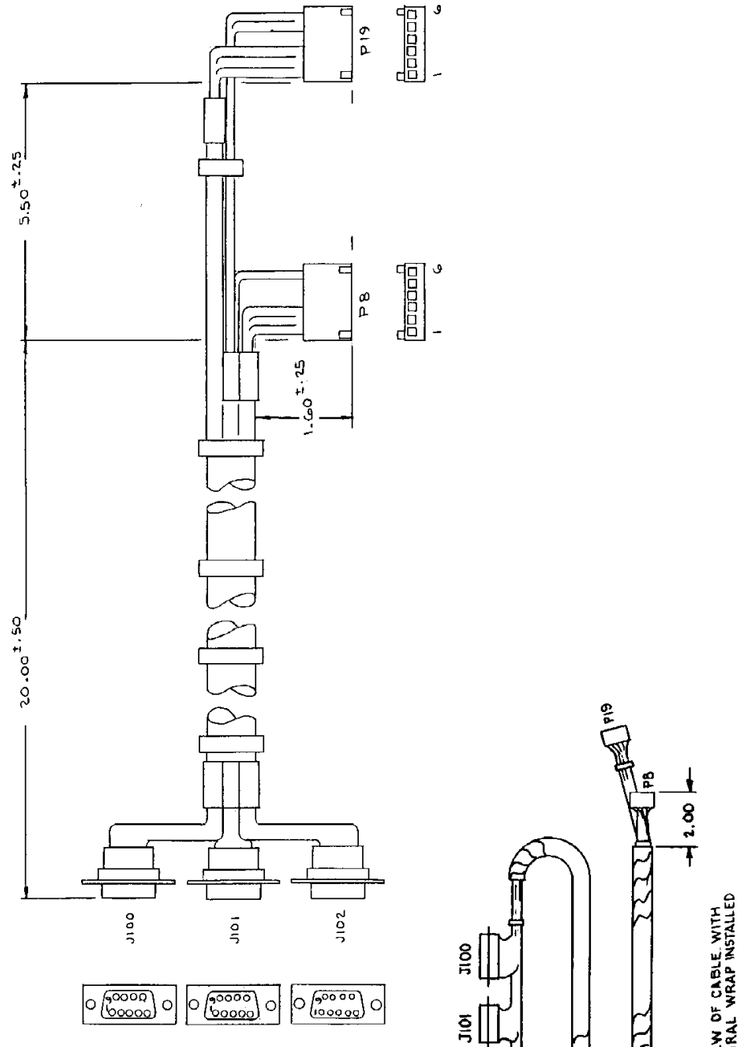
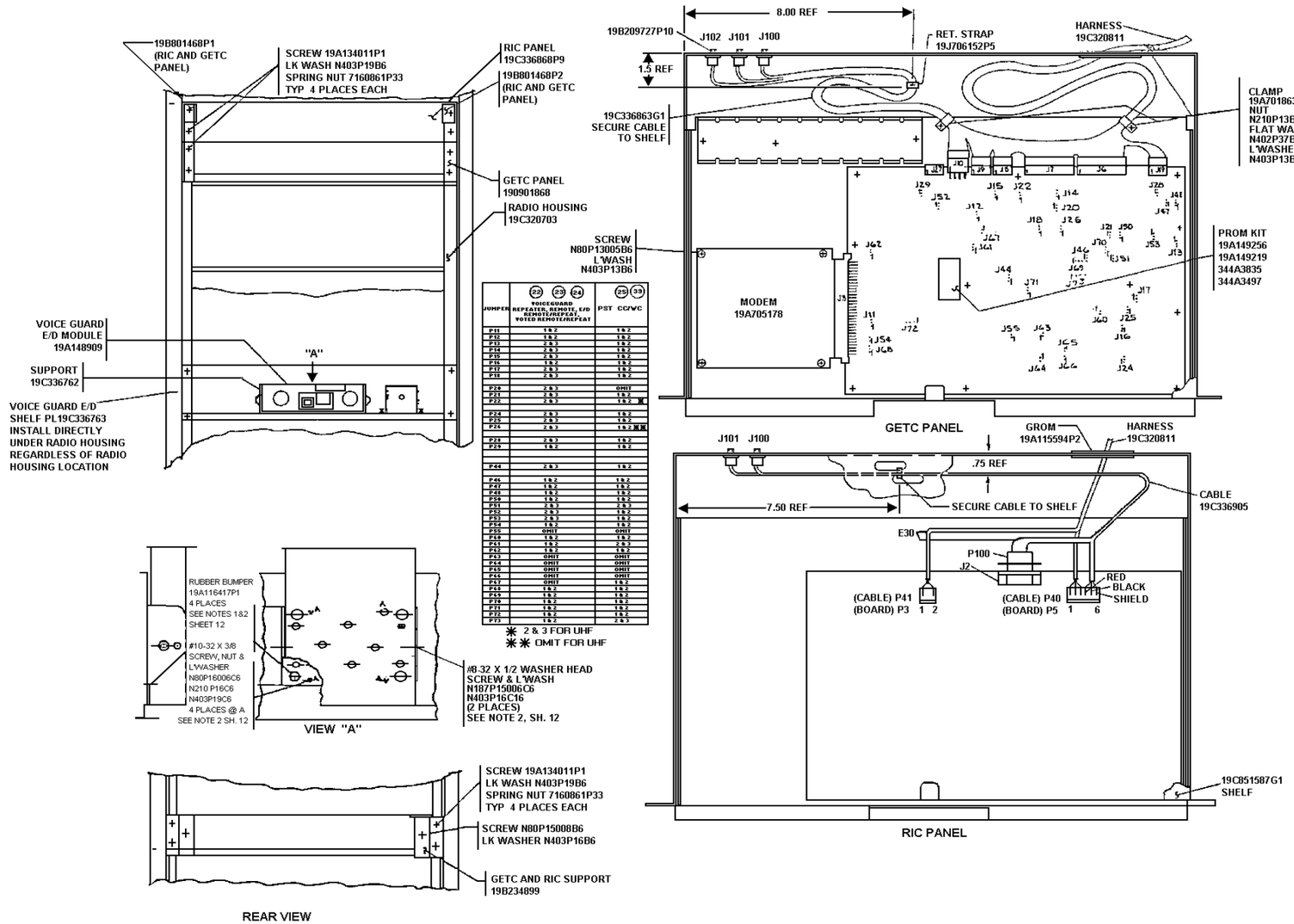
WIRING DIAGRAM





JUMPER	(22) (23) (24) VOICEGUARD REPEATER, REMOTE, E/D REMOTE/REPEAT, VOTED REMOTE/REPEAT	(25) (39) PST CC/VC
P11	1&2	1&2
P12	1&2	1&2
P13	2&3	1&2
P14	2&3	1&2
P15	2&3	1&2
P16	1&2	1&2
P17	2&3	1&2
P18	2&3	1&2
P20	2&3	OMIT
P21	2&3	1&2
P22	2&3	1&2 ✱
P24	2&3	1&2
P25	2&3	1&2
P26	2&3	1&2 ✱✱
P28	2&3	1&2
P29	1&2	1&2
P44	2&3	1&2
P46	1&2	1&2
P47	1&2	1&2
P48	1&2	1&2
P50	1&2	1&2
P51	2&3	2&3
P52	2&3	1&2
P53	2&3	1&2
P54	1&2	1&2
P55	OMIT	OMIT
P56	1&2	1&2
P61	1&2	2&3
P62	1&2	1&2
P63	OMIT	OMIT
P64	OMIT	OMIT
P65	OMIT	OMIT
P66	OMIT	OMIT
P67	OMIT	1&2
P68	1&2	1&2
P69	1&2	1&2
P70	1&2	1&2
P71	1&2	1&2
P72	1&2	1&2
P73	1&2	2&3

✱ 2 & 3 FOR UHF
✱✱ OMIT FOR UHF

(22) WHEN INSTALLING 19D901868 VOICE GUARD MODULE, MOVE RADIO HOUSING DOWN 1 RACK UNIT & MOUNT VOICE GUARD MODULE ABOVE RADIO HOUSING. INSTALL 19A702104P2 PER CHART. USE HARDWARE KIT 19A130031G30.

(23) INSTALLATION OF VOICE GUARD E/D SHELF (NON 1027 VERSION) INSTALL 19A702104P2 PER CHART. USE HARDWARE KIT 19A130031G30.

(25) WHEN INSTALLING GETC PANEL 19D901868, MOVE RADIO HOUSING DOWN 1 RACK UNIT AND MOUNT GETC PANEL ABOVE RADIO HOUSING. INSTALL JUMPERS 19A702104P2 PER CHART. IF NOT CNI APPLICATION CONNECT 19C336861P2 SENSOR TO TRANSMIT ANTENNA CONNECTOR. REMOVE WIRE FROM P19-5 ON 19C320811 AND INSTALL IN P19-5 ON 19C336863. USE HARDWARE KIT 19A130031G30. FOR CNI APPLICATION, REFER TO MOD. INSTRUCTION 344A3498P1, REPLACE PROM KIT 19A149256 WITH PROM KIT 344A3497 PROVIDED, AFTER TUNE AND TEST.

(26) INSTALLATION OF RIC PANEL 19C336868P9 REMOVE WIRE FROM P40-1 TO P40-2 ON 19C320811G15 CABLE. CONNECT LOOSE BLACK WIRES FROM P41-2 AND P40-6 TO E3. USING #6 HARDWARE.

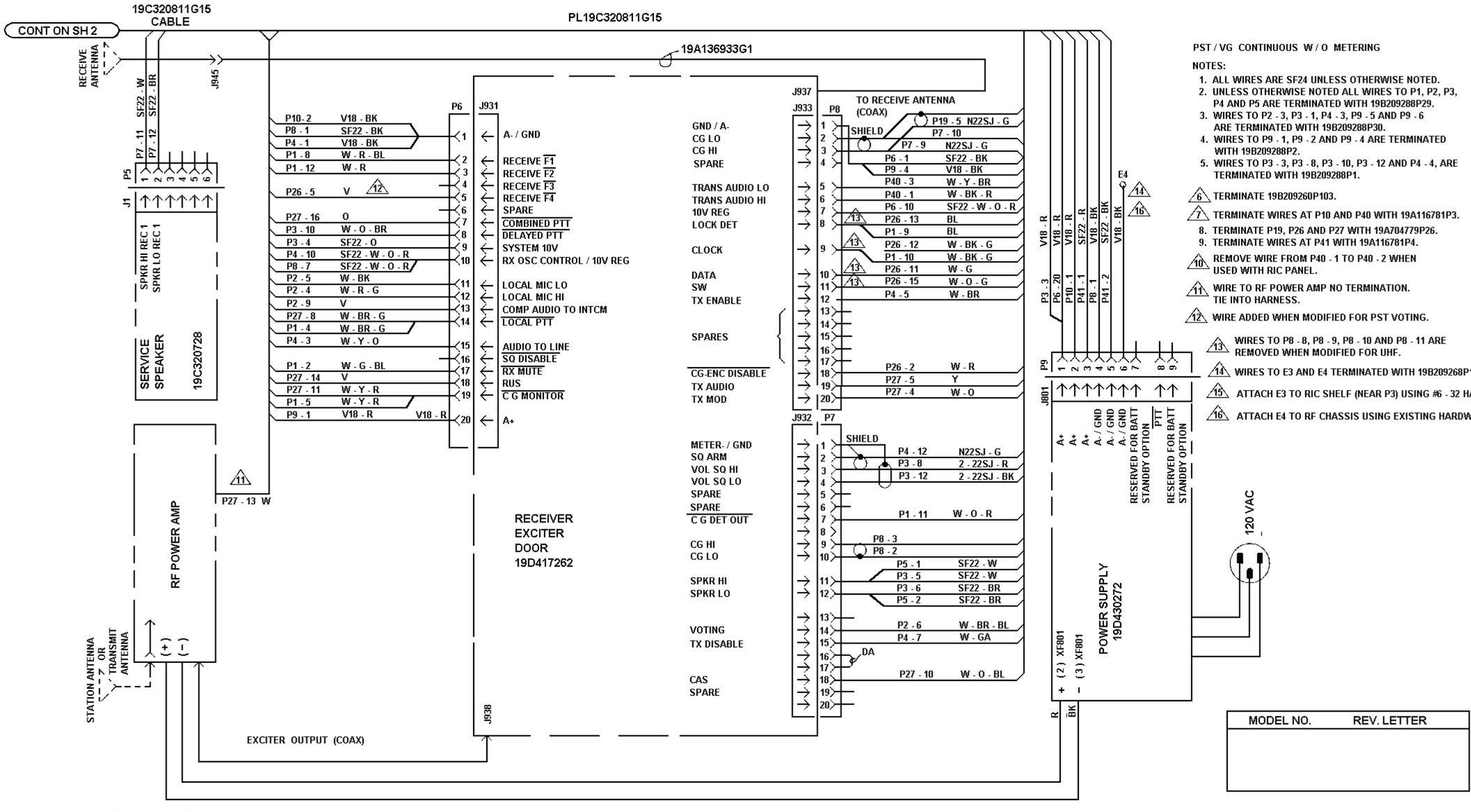
(27) INSTALLATION OF 19A705178P1 MODEM.

(39) INSTALLATION OF DOWNLINK GETC FOR SCAT. INSTALL DOWN LINK GETC PANEL 19D901868 ABOVE THE SCAT GETC PANEL, USING HARDWARE KIT 19A130031G30. REPLACE PROM KIT 19A149256 WITH PROM KIT 344A3835 PROVIDED, ON BOTH GETC BOARDS. INSTALL 19C337102P1 CABLE BETWEEN J102 CONNECTORS ON BOTH GETCS. SECURE CABLE TO CABINET. REPLACE CONTACT #3 AND #5 ON P9 (POWER SUPPLY CONNECTOR) OF 19C320811 HARNESS WITH RED AND BLACK WIRES RESPECTIVELY OF THE POWER CABLE PROVIDED. ATTACH POWER CABLE TO TERMINAL BLOCK #7 (RED) AND #6 (BLACK) AT THE BACK OF THE DOWNLINK GETC. SECURE CABLE TO THE STATION CABINET. RETURN EDACS PANEL (19D903880G1) TO STOCK.

NOTES:
1. RUBER PAD INSTALLS BETWEEN SUPPORT AND E/D MODULE. AFFIX RUBBER PADS TO SUPPORT IN APPROXIMATELY THE POSITIONS SHOWN.
2. PART OF HARDWARE KIT PL19A149098G2.

MASTR II STATION (PST)

(19D417483, Sh. 12, Rev. 30)



PST / VG CONTINUOUS W / O METERING

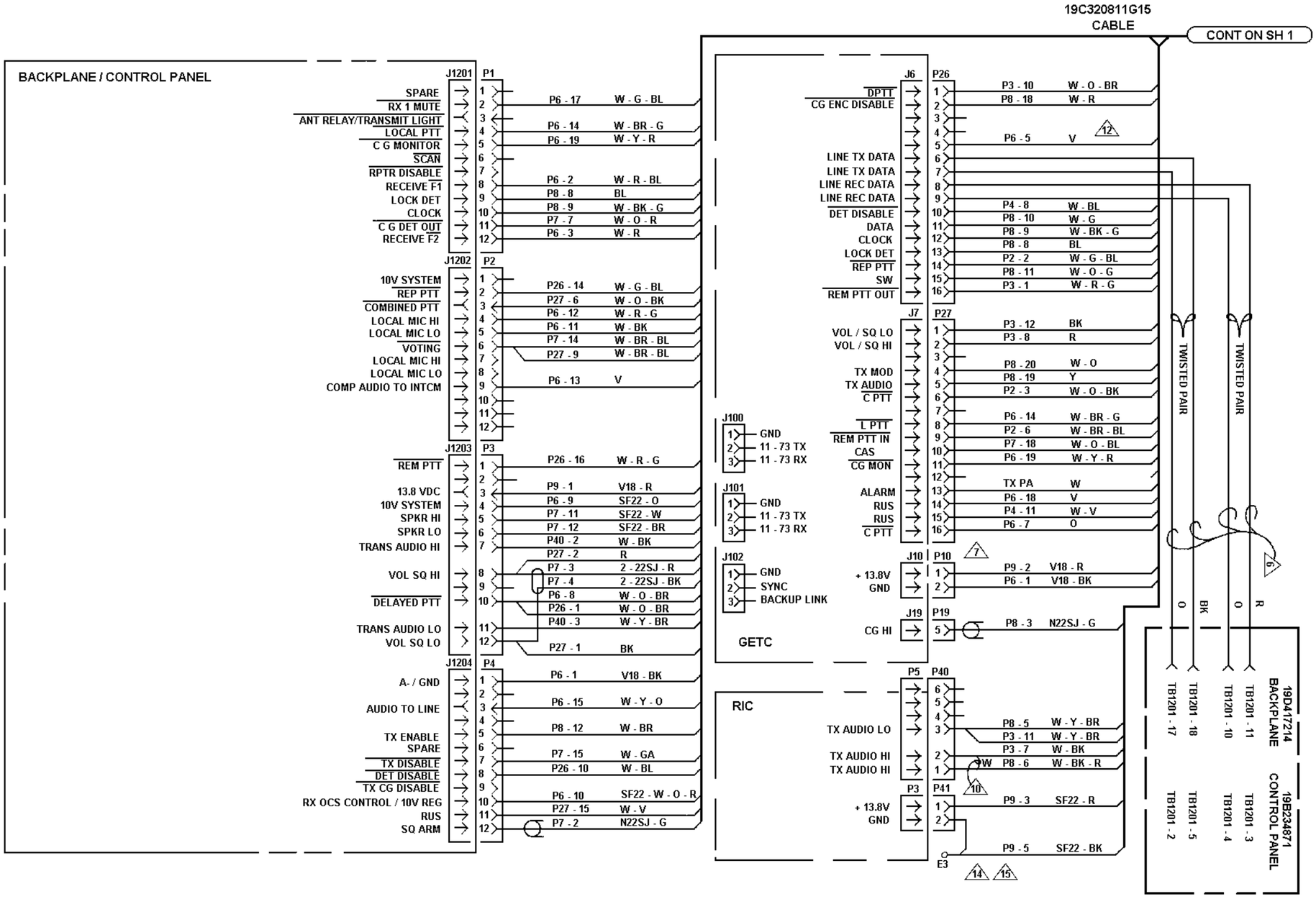
NOTES:

1. ALL WIRES ARE SF24 UNLESS OTHERWISE NOTED.
2. UNLESS OTHERWISE NOTED ALL WIRES TO P1, P2, P3, P4 AND P5 ARE TERMINATED WITH 19B209288P29.
3. WIRES TO P2 - 3, P3 - 1, P4 - 3, P9 - 5 AND P9 - 6 ARE TERMINATED WITH 19B209288P30.
4. WIRES TO P9 - 1, P9 - 2 AND P9 - 4 ARE TERMINATED WITH 19B209288P2.
5. WIRES TO P3 - 3, P3 - 8, P3 - 10, P3 - 12 AND P4 - 4, ARE TERMINATED WITH 19B209288P1.

6. TERMINATE 19B209260P103.
7. TERMINATE WIRES AT P10 AND P40 WITH 19A116781P3.
8. TERMINATE P19, P26 AND P27 WITH 19A704779P26.
9. TERMINATE WIRES AT P41 WITH 19A116781P4.
10. REMOVE WIRE FROM P40 - 1 TO P40 - 2 WHEN USED WITH RIC PANEL.
11. WIRE TO RF POWER AMP NO TERMINATION. TIE INTO HARNESS.
12. WIRE ADDED WHEN MODIFIED FOR PST VOTING.
13. WIRES TO P8 - 8, P8 - 9, P8 - 10 AND P8 - 11 ARE REMOVED WHEN MODIFIED FOR UHF.
14. WIRES TO E3 AND E4 TERMINATED WITH 19B209268P105.
15. ATTACH E3 TO RIC SHELF (NEAR P3) USING #6 - 32 HARDWARE.
16. ATTACH E4 TO RF CHASSIS USING EXISTING HARDWARE.

MASTR II STATION (PST)

(19D438278, Sh. 1, Rev. 8)



MASTR II STATION (PST)