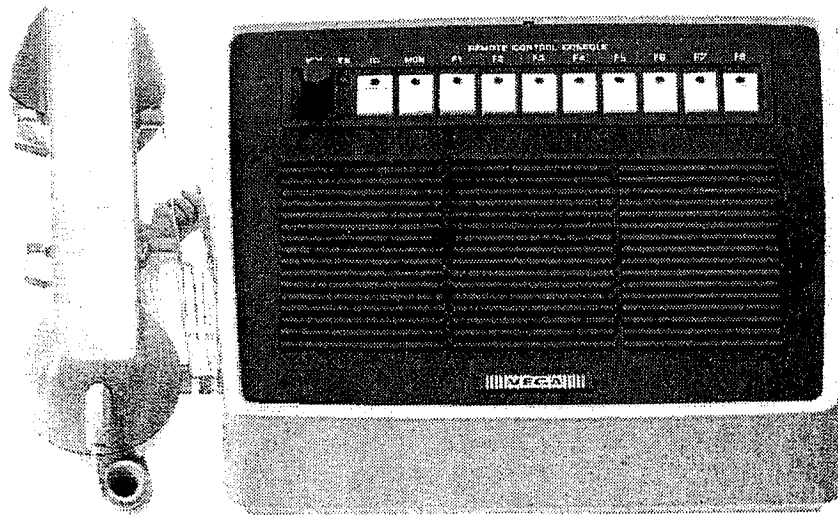




a MARK IV company

# Models C-582 and C-583 Eight-Frequency Tone-Remote Control Consoles Owner's Manual



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## Introduction

Vega's Model C-582 and C-583 tone-remote radio control consoles provide reliable remote control of a two-way-radio base station. The consoles provide F1-F8 select with electronic switches that are also configurable for 1-of-4 or 1-of-6 wildcards. Intercom and monitor functions are also provided. The C-582 is equipped with handset and cradle, and the Model C-583 includes a desk microphone.

The C-582/583 console is normally used in conjunction with a functionally matching Vega Model RP-223B-8 eight-frequency tone-remote control panel, located at the base-station site. The C-582/583 is compatible with GE, Motorola, and other radio tone-remote control systems which employ similar tone formats.

A Vega tone-remote console is connected to the remote base station by means of any voice-grade or better network, and is compatible with private or leased telephone circuits, including microwave links in the connecting network. Metallic or DC continuity is not required.

The basic console is supplied and ready to operate in the two-wire mode with handset and speaker (C-582) or desk microphone (C-583), and with push-to-talk, CTCSS monitor, notch filter, and F1 through F8 frequency-select functions installed and operational.

Jumpers are provided for simplex or duplex four-wire operation, for enabling the speaker when off-hook, for expanded frequency range, for proper line-terminating impedance with multiple consoles per line, and for sidetone enable or disable. A jumper has also been provided to change from 1-of-N eight-frequency operation to paired F1/F2 and F3-F8 operation or F1-F4 and F5-F8 operation (whereby the F3-F8 or F5-F8 control tones are generated only by F3-F8 or F5-F8 switch operation and not by PTT switch operation).

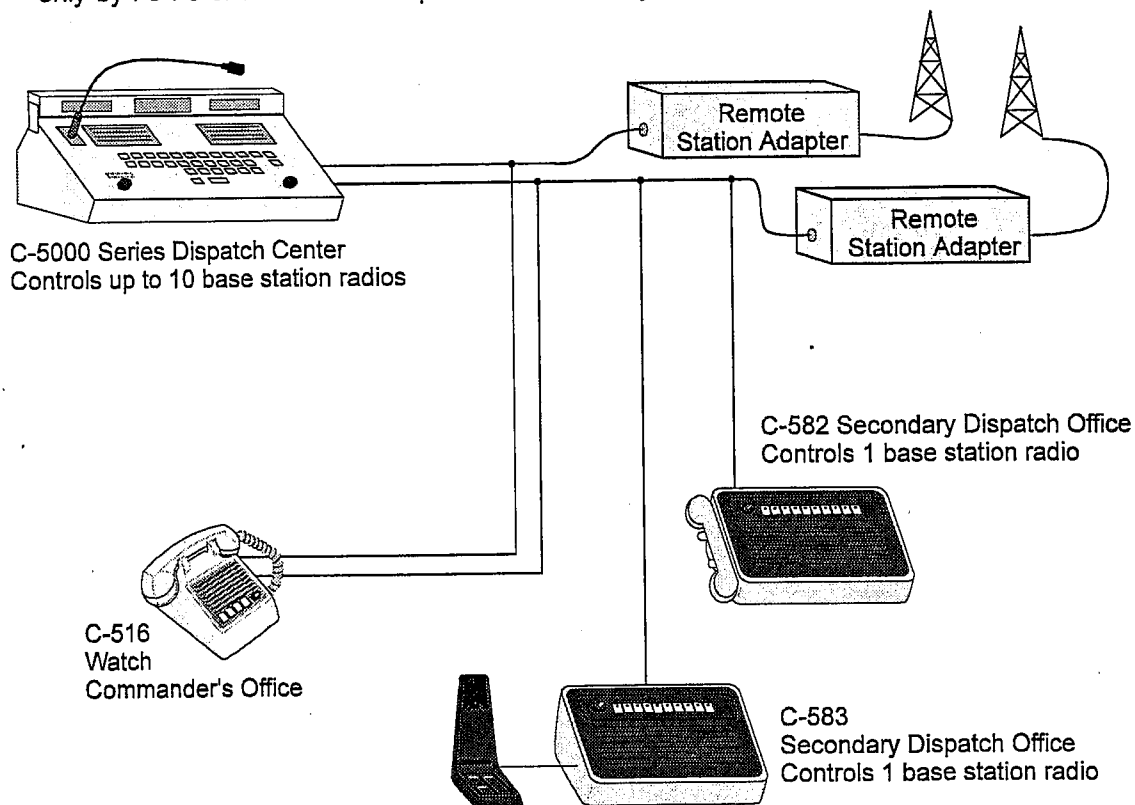


Figure 1.  
Overall system block diagram.

**Intercom:** When pushed, removes control tones and allows the operator to talk into the network (such as to a parallel console or to a technician at the remote base station) without keying the remote transmitter. Pushing the PTT switch on the handset is not required.

**Transmit Lamp:** When lighted, indicates console (or a parallel console) is transmitting (required by FCC rules).

**Volume Control:** Adjusts both speaker and earpiece audio level.

**CTCSS Monitor:** When pushed momentarily, causes the base-station receiver equipped with a subaudible-tone (CTCSS) decoder to monitor all activity on the radio channel, by disabling the CTCSS decoder. This function reduces the possibility of accidentally interfering with other cochannel users, and is required by FCC rules for stations equipped with subaudible signaling. The monitor function is also activated when the handset is lifted off hook (C-582 only).

**Frequency Selection:** As shipped (1-of-8 mode), when any F1 through F8 switch is pressed momentarily, it will latch on and release the previously selected frequency, and cause an eight-frequency station to switch to the desired channel. LED indicators show which channel is selected.

**Transmit PTT Switch:** Push to talk (generates PTT tone) and release to listen; located inside the handset handle (C-582) or on the desk microphone (C-583).

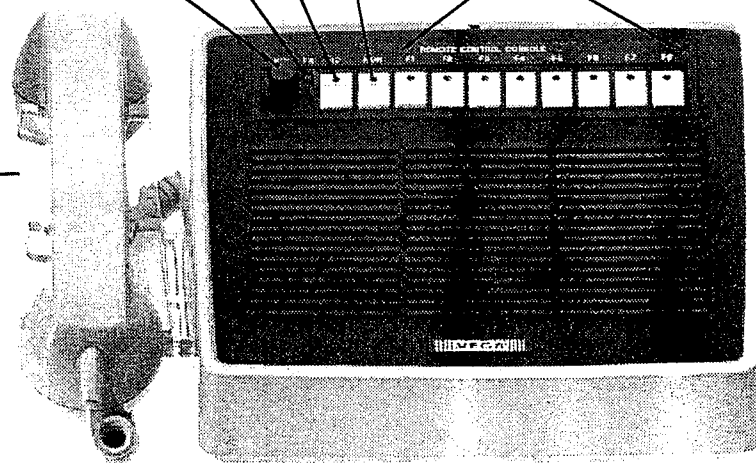


Figure 2.  
Operation and Controls.

## Operation and Controls

See Figure 2 for a description of controls.

### Parallel-Console Notch Filter

Removes the PTT tone from receive audio when a parallel console is transmitting. This circuit is required whenever two or more consoles are controlling the same base station, and is supplied as standard.

### Operation Notes

- When a console switches from one frequency to the other, that change is not indicated on parallel consoles. However, when a PTT or F1 through F8 switch is pushed on a parallel console, a new frequency command is generated, thereby placing the remote station on the channel indicated on that console. (The monitor switch does not generate a new frequency command.)
- Monitor and frequency-selection commands and voice signals are audible at parallel consoles (two-wire mode only), thereby providing an audible indication of activity or that commands are being generated elsewhere in the radio system. (The continuous PTT tone is notched out and cannot be heard on parallel consoles; however, a PTT tone detector ahead of the notch filter causes the transmit LED to glow, when in the two-wire mode.)
- Frequency Selection in Paired Mode: In this mode of operation, F1 and F2 (or F1 through F4) will operate the same as in the 1-of-8 mode, with F1 or F2 (or F3 or F4) frequency-select tone bursts from F1, F2, (or F3, or F4) or PTT switch operation. The F3 (or F5) through F8 switches, however, are now isolated from the F1/F2 (or F1 through F4) and PTT switches and will not be affected by their operation. When an F3 (or F5) through F8 switch is pressed momentarily, it will latch on, generate a function-tone burst, and release the other F3 (or F5) through F8 latch.

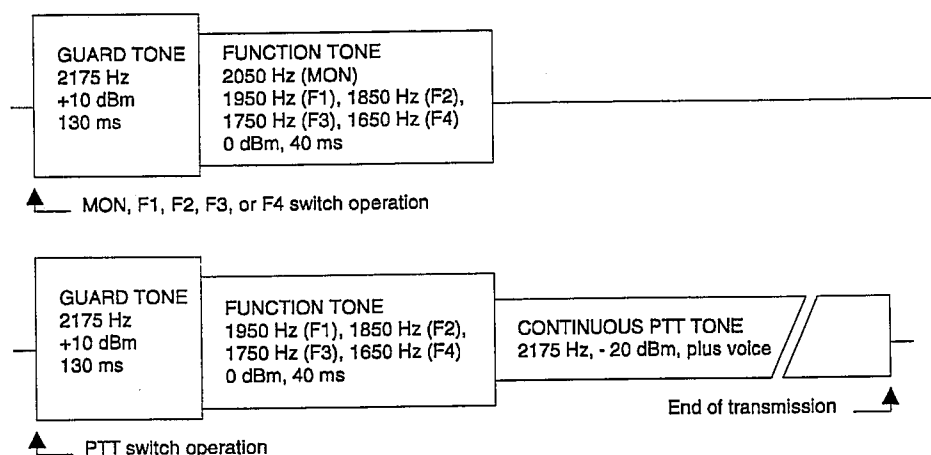


Figure 3.  
Tone sequence chart.

## Typical Applications

The C-582 or C-583 console can be used as a single unit or in parallel with other consoles on the same network, to control a remote base station (as shown in Figure 1). Referring to Figure 1, two consoles are tied to a single leased telephone line feeding a Vega tone-remote control panel at the base station.

Either console can exercise full control over the remote base station by use of the push buttons and the handset (or desk microphone). A sequence of tones is generated each time the PTT switch on the handset (or desk microphone) is pushed, insuring security and constant status updating of the remote base station.

All base-station activity, whether from a radio or from a parallel console, can be monitored over either the speaker or the handset. Thus, it is unlikely that one console operator would inadvertently interfere with any other console operator. One console operator can talk with another console operator, without keying the remote base transmitter, simply by pushing the INTERCOM switch on the front panel (2-wire mode only).

The interconnections shown in Figure 1 are typical. Additional consoles may be connected to the common leased telephone line to control the remote base station. (Custom Vega consoles are available for selecting lines to other remote base stations, selecting additional frequencies, controlling other functions, status monitoring, etc. Contact the Vega factory for assistance with your special system requirements.)

## Installation

### Location

The C-582 or C-583 tone-remote console may be installed in any location convenient to the operator. Exposure to extreme dampness, temperature, and radio-frequency energy should be avoided for maximum life and reliability.

### Default Settings

If the console is to be used in the factory-prepared, single-console, two-wire-line, line-terminating, "simplex" (actually, half-duplex), 1-of-8 mode of operation, the only installation required is to plug the wall power supply into a wall socket and connect the modular line plug to the modular jack of a leased line or audio pair.

**NOTE: The console units are not designed to operate on lines carrying direct current.** If direct current is on the line, isolate with external capacitors or with a 600-600-ohm transformer designed for the current involved.

## Disassembly and Adjustments

To access to internal connections, jumpers, and controls:

1. Remove the three retaining screws around the base metal; left side, right side, and front.
2. Lift off cover assembly.

This procedure provides access to all installation connections, adjustments, and programming. To access all components for maintenance, remove the three speaker/switch bracket screws.

### Two-Wire-Line Operation

JP3 and JP7 are closed ("A"), factory default.

### Four-Wire-Line Operation

Open JP3 ("B") and JP7 ("B").

### Line-Bridging Operation

When other equipment is loading the line, open JP2 ("A") and JP1 ("A"). Refer to Chart 1 for losses introduced. The loss shown in the RX column is also the loss introduced into the other equipment if the source and terminating impedance of the other equipment is 600 ohms.

### Multiple-Console Operation

Open JP2 ("A") and JP1 ("A") on all except one console. Refer to Chart 2 for programming that one console.

### Duplex Operation

Move the JP9 jumper to "A" for duplex operation on four-wire lines (not designed for two-wire duplex operation).

NUMBER OF CONSOLES	TWO-WIRE LINE JP1 OPEN TO A		FOUR-WIRE LINE JP2, JP1 OPEN TO A	
	RX LOSS	TX LOSS	RX LOSS	TX LOSS
1	1.2 dB	0.3 dB	0.3 dB	0.0 dB
2	2.3 dB	1.4 dB	0.6 dB	0.9 dB
3	3.3 dB	2.3 dB	0.9 dB	1.6 dB
4	4.2 dB	3.2 dB	1.2 dB	2.4 dB
5			1.5 dB	3.0 dB
6			1.8 dB	3.6 dB
7			2.0 dB	4.2 dB
8			2.3 dB	4.8 dB

Chart 1. Programming for line-bridging mode.

NUMBER OF CONSOLES	TWO-WIRE LINE				FOUR-WIRE LINE (CLOSE JP2 to B)				
	JP1	R1	RX LOSS	TX LOSS	JP1	R1	R16	RX LOSS	TX LOSS
1	CLOSED (B)	820 $\Omega$	0 dB	0 dB	CLOSED (B)	820 $\Omega$	680 $\Omega$	0 dB	0 dB
2	CLOSED (B)	1.5	0 dB	0 dB	CLOSED (B)	1.3	680 $\Omega$		
3	OPEN (A)	k $\Omega$	0 dB	0 dB	CLOSED (B)	k $\Omega$	750 $\Omega$		
4		X	1 dB	1 dB	OPEN (A)	2.7	820 $\Omega$		0 dB
5		X	2 dB	2 dB		k $\Omega$	1 k $\Omega$		1.0 dB
6	OPEN (A)	X	3 dB	3 dB		X	1.1		1.9 dB
7		X				X	k $\Omega$	0 dB	1.9 dB
8					OPEN (A)	X	1.2		2.7 dB
						X	k $\Omega$		2.7 dB
						X	1.5		3.4 dB
							k $\Omega$		3.4 dB

Chart 2. Programming for line-terminating mode. Jumpers in this chart are for the first console only. All parallel consoles should have JP1 open for a two-wire line and JP1 and JP2 open for a four-wire line.

## Level Adjustments

The C-582/583 console is factory-adjusted for +10 dBm guard tone, 0 dBm function tone, and -20 dBm PTT tone into a 600-ohm resistive load. Leased lines or audio-pair lines seldom present an exact 600-ohm load to the console, and the measured levels probably will be somewhat different. R5 allows adjustment of all output levels simultaneously if other levels are desired.

For continuous PTT tone output for measurement or adjustment purposes, press the PTT switch. For a continuous guard tone, jumper TP4 to TP6 (+10 V) and press the PTT switch. For a continuous function tone, jumper TP4 to TP6 and press the desired F1 through F8 or MON switch, depending upon which function tone is desired. (Note: Upon pressing the MON switch, when in the 1-of-8 mode, a lockup occurs until the jumper is removed.)

Voice level is factory-preset for a peak-to-peak output level typically equal to the function-tone peak-to-peak level. An oscilloscope and typical voice should be used to measure the voice level. The compressor limits the line output power, and a sine wave, if used for this check, would have much greater power for a given peak-to-peak voltage output.

Output from the auxiliary input is controlled only by the input level, and gives about a 15-dB gain from auxiliary input to line output.

## Input-Level Adjustment

Input-level sensitivity is factory-adjusted to just above the threshold of compression with typical line loss. If greater sensitivity is required, adjust the RX INPUT SENS control (R57) clockwise. If less sensitivity is required, adjust R57 counter-clockwise.

Compressor sensitivity should not be increased beyond that required by line loss, because increased sensitivity amplifies line and background noises during pauses in voice transmissions—without increasing the level of voice reception.

## Microphone-Sensitivity Adjustment

Microphone sensitivity has been factory-adjusted to cause about 10 dB of compression from a typical male voice directly into the microphone. If greater sensitivity is required, adjust the TX INPUT SEN control (R58) clockwise. An additional DESK MIC LVL control (R52) is provided for adjusting desk-microphone sensitivity. (This control is especially useful if the console is equipped with both a handset and a desk microphone.) Microphone sensitivity should not be advanced beyond that required for the operator's voice, because increased sensitivity increases transmitted room background noise during pauses in voice transmissions—without increasing the level of the transmitted voice.

## Timer Adjustments

The C-582/583 guard-tone and function-tone duration is factory-adjusted for 130 ms and 40 ms, respectively. If tones of other durations are desired, adjust the guard tone with R87 and the function tone with R86.

## Tone-Burst Frequencies

Console tone frequencies are factory-programmed by a diode matrix to 2175 Hz (PTT/guard), 2050 Hz (monitor), 1950 Hz (F1), 1850 Hz (F2), 1750 Hz (F3), 1650 Hz (F4), 1550 Hz (F5), 1450 Hz (F6), 1350 Hz (F7), and 1250 Hz (F8). Other PTT, monitor, and function-tone frequencies may be obtained on special order and at extra cost.



### To change Function-Tone Frequencies

Connect 1N4148 diodes to the console board according to the table below and board diagram on the next page. Other function-tone frequencies (other than those listed in the table) may be obtained by using the formulas below, where:

$f$  = function-tone frequency,

$N$  = binary value of diode positions 2 through 8 (i.e. value of divides 4, 6, and 8 is:  $16 + 4 + 1 + 21$ )

when diode position 1 is off  $f = 282,750 / (N + 128)$

when diode position 1 is on  $f = 141,375 / N + 128$

when diode position 1 is off  $N = (282,750/f) - 128$

Although the maximum frequency range is from 1100 Hz to 2209 Hz, the maximum frequency range used in any one system must not exceed 3 to 1 minus 100 Hz. This is due to the strong third harmonic generated by typical decoder limiters at the base station.

### Paired Operational Mode

To change mode of operation from the 1-of-8 mode to the paired 1-of-2 (PTT)/1-of-6 (wild-card) mode, move the PAIR SEL jumper to "2&6". For the paired 1-of-4 (PTT)/1-of-4 (wild-card) mode, move the PAIR SEL jumper to "4&4".

### Speaker Mute

The speaker is normally muted when the handset is lifted off-hook. If off-hook speaker operation is desired, move JP4 to "A".

FUNCTION TONE FREQUENCY	DIODE CONNECTION							PERCENT ERROR
	B3	B2	B	A4	A3	A2	A1	
1950 Hz	0	0	1	0	0	0	1	±0.000
1850 Hz	0	0	1	1	0	0	1	-0.106
1750 Hz	0	1	0	0	0	1	0	-0.265
1650 Hz	0	1	0	1	0	1	1	+0.213
1550 Hz	0	1	1	0	1	1	0	+0.230
1450 Hz	1	0	0	0	0	1	1	±0.000
1350 Hz	1	0	1	0	0	0	1	+0.213
1250 Hz	1	1	0	0	0	1	0	+0.088
1150 Hz	1	1	1	0	1	1	0	-0.053
	64	32	16	8	4	2	1	
	BINARY VALUE							
	0 = NO DIODE							
	1 = DIODE							

Chart 3. Function-Tone Frequency Diode Connection

## Theory of Operation

Crystal oscillator Y1 and U25-1,9 drives an 8-bit programmable divider U19. The most significant bit at U19-14 is normally programmed high, causing the programmable division range to be 255 to 128. This provides an output at U19-1 of from 11.088 kHz to 22.09 kHz. U15 is a divide-by-10 counter used to synthesize a sine wave. Because this stage also divides by 10, the output frequency range of U15 is 1.1088 kHz to 2.209 kHz. The synthesized sine wave has a strong tenth harmonic, which is greatly attenuated at the low-pass filter output U20-1.

At idle, the crystal oscillator is disabled by a high at U26-10. Going off-hook or operation of a MON or F1-F8 switch triggers guard-tone timer (U16-15,1), which then enables the crystal oscillator and the "+10 dB" gate at U22-5. The 2175-Hz programming diode (CR87) is enabled by the "off" state of the function-tone timer at U16-13. A "+10 dB" 2175-Hz output therefore is delivered to the line through R84, LINE LVL potentiometer R5, line driver U9, and transformer T1.

Timeout of the guard-tone timer after 130 ms triggers the function-tone timer at U16-3, which enables the 0-dB gate at U22-12, disables the 2175-Hz programming diode, and enables MON or F1-F8 programming, depending upon which switch has been pressed. Timeout of the function-tone timer after 40 ms of operation returns conditions to the idle state.

PTT switch operation causes the same sequence of operation as above, except that upon function-tone timer timeout, the crystal oscillator remains enabled and the "-20 dB" 2175-Hz PTT tone is delivered to the line through R72 for as long as the PTT switch is held.

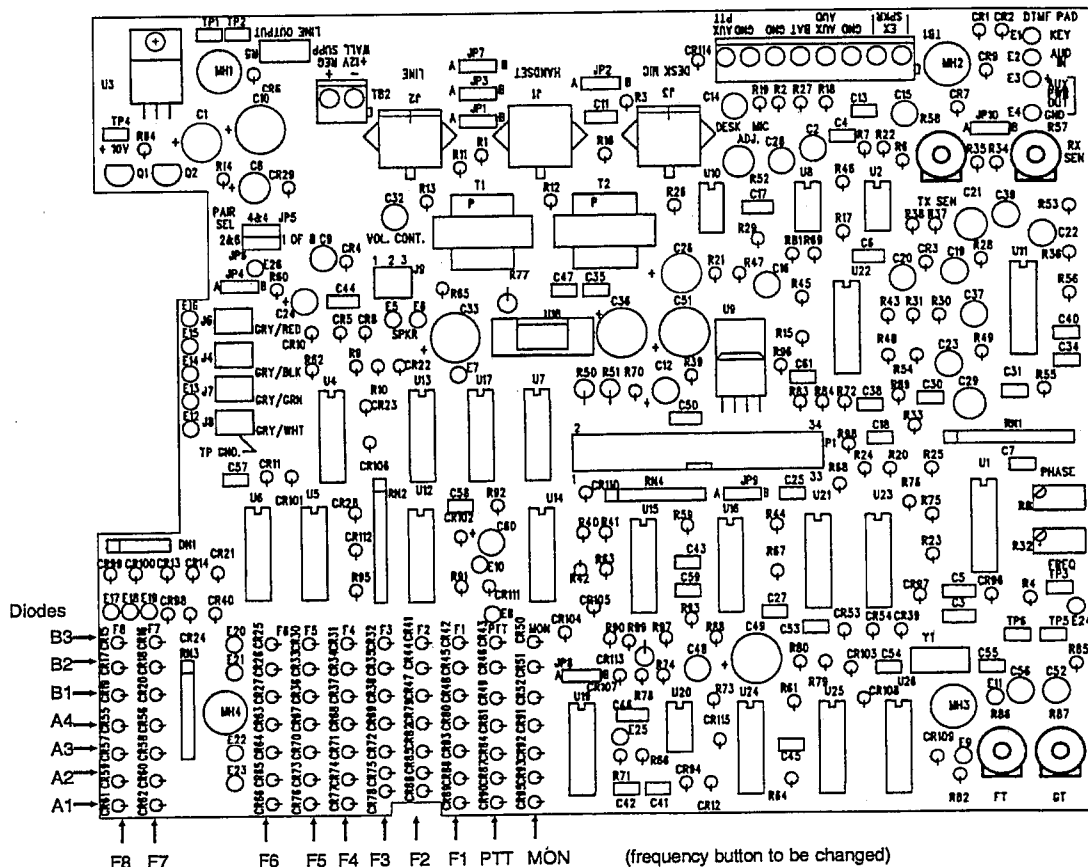


Figure 4.

C-582/383 Board Diagram and Diode connection points.

Going off-hook or monitor-switch operation triggers the guard-tone timer and sets the monitor latch at U14-2, which then lights the monitor LED through U17-7,10. The monitor latch, through U21-3,4, CR11, CR39, CR101, U5-5,8,13, U6-5,8,13, and U12-5,8 disables F1 through F8 programming. Monitor-frequency programming diodes CR91 and CR93 are enabled by the combination of a set monitor latch and function-tone timer operation. Timeout of the function-tone timer resets the monitor latch at U14-3, which then reconnects output from the U13 and U4 latches.

Operation of one of the frequency-select switches (F1-F8) sets one of the U13 or U4 latches and applies a reset logic to all eight of the latches through CR40 or CR24, CR23 or CR22 and CR99, or DN1 and CR100. When a U13 or U4 latch is simultaneously set and reset, set dominates and Q goes high.

A frequency-select LED is energized through U7 or U17-1,16 and one of the U5, U6, or U12 inputs is high from the set latch. When the function-tone timer is triggered, one of the U5, U6, or U12 outputs goes high, enabling F1-F8 programming.

When PAIR SEL is closed in the 1-of-8 position, gates U23A and U23C are closed. A pulse from any F1-F8 switch sets its associated U13 or U4 latch, and resets all other latches through CR98, CR99, CR100, U23-1,2, and U23-11,10. Simultaneously, the function-tone and guard-tone timers (U16) are triggered through CR14, CR21, or CR13, and U24-11,10. When the function-tone timer is triggered, one of the U5, U6, or U12 outputs goes high, enabling F1-F8 programming. When PAIR SEL is closed in the 4&4 position, gate U23A is closed. A pulse from any F1-F4 switch sets its associated U13 latch, and resets all other U13 latches through CR98, CR99, and U23-1,2. A pulse from any F5-F8 switch sets its associated U4 latch, and resets all other U4 latches through CR100. When PAIR SEL is closed in the 2&6 position, U23A is open (U23-13 is low). The low at U23-13 is inverted

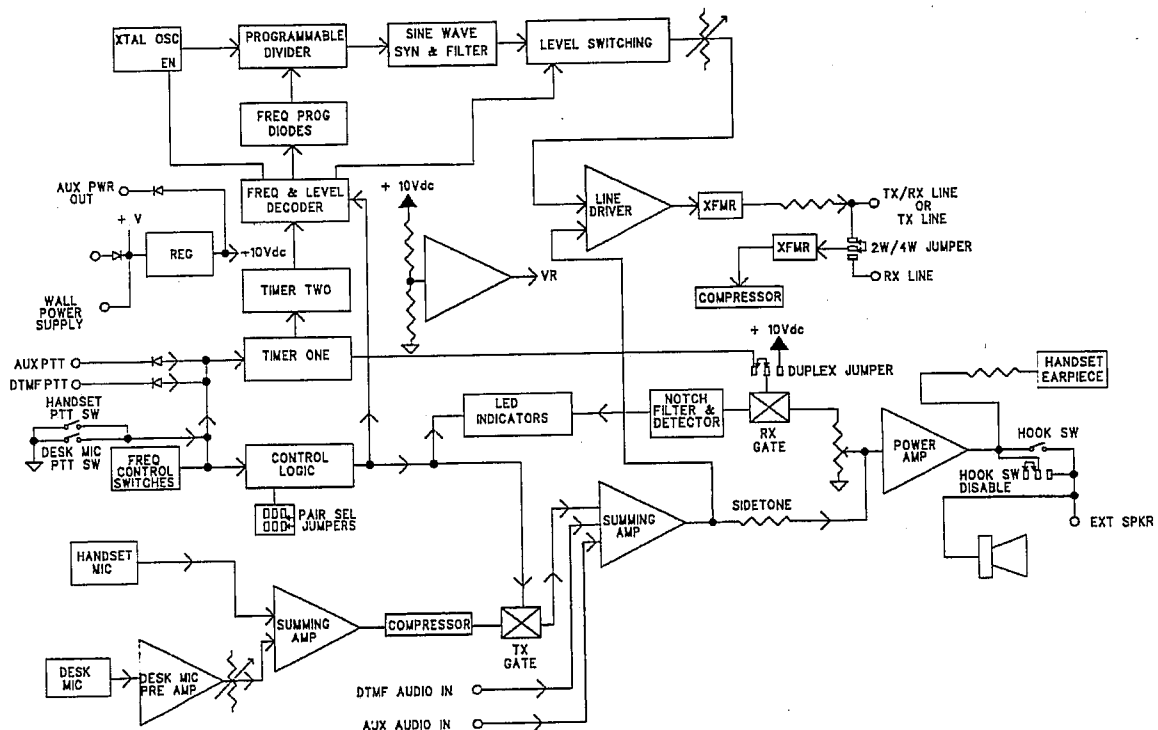


Figure 5.

C-582/C-583 block diagram.

high at U21-8 and U23-12, closing gate U23C. A pulse from an F1 or F2 switch sets its associated U13A or U13B latch, and resets through CR98. A pulse from any F3-F8 switch sets its associated U13C, U13D, or U4 latch., and resets that group of latches through CR99, CR100, and U23-11,10.

In the receive mode, signals present on the 600-ohm line are coupled through T2 to the input of compressor U11 at pins 2 and 6. Maximum gain of the compressor is determined by the bias voltage on capacitor C19. This bias voltage is determined by the resistance from U11-2 to ground, which is set by RX INPUT SEN control R57. Input signals are full-wave rectified within U11. When this rectified input signal exceeds the bias set by R57, it charges capacitor C19 to a higher voltage level, which lowers stage gain and thus maintains a near-constant average output signal at U11-7 for all inputs above the bias threshold.

Output signals from compressor U11-7 drives the 2175-Hz notch/bandpass filter U1. Bandpass output at U1-7 is amplified and rectified by U2 to light the TX LED. The TX LED is also energized by the PTT switch through U17-12. This causes TX LED activation from the PTT switch when the system is operated over a four-wire line.

Bandpass output is summed with an unfiltered signal at U1-13, causing a sharp notch at the U1-14 output when the two signals have been adjusted for equal amplitude by R32 and for 180° phase shift by R8.

Notched output signals from U1-14 are conducted through analog gate U22-1,2 and R65 to the high side of volume control R1, and then to the speaker and earpiece through power amplifier U18. Analog gate U22-1,2 is disabled during PTT, intercom, and tone burst, unless the unit has been jumpered for duplex operation.

In the transmit mode, audio from the handset microphone (C-582) or desk microphone (C-583) is passed to summing amplifier U10. This output signal is compressed by the other section of U11 in the same manner as receive signals. Compressor maximum gain set by MIC SENS control R58 has been factory-adjusted to be typically 10 dB into compression from a loud male voice directly into the microphone. For less sensitivity (to reduce room-noise pickup), adjust R58 counterclockwise. For soft-voiced individuals in a quiet environment, sensitivity may be increased by adjusting R58 clockwise. Compressor output at U11-10 is conducted through analog gate U22-8,9 and R43 to the transmit audio summing amplifier U8. Transmit voice audio from U8-7 through R69 to the wiper of the volume control R1 provides sidetone voice audio to the earpiece (C-582) and speaker. The mic-to-line audio path is disabled at U22-6 during guard tone and function tone, and also during receive.

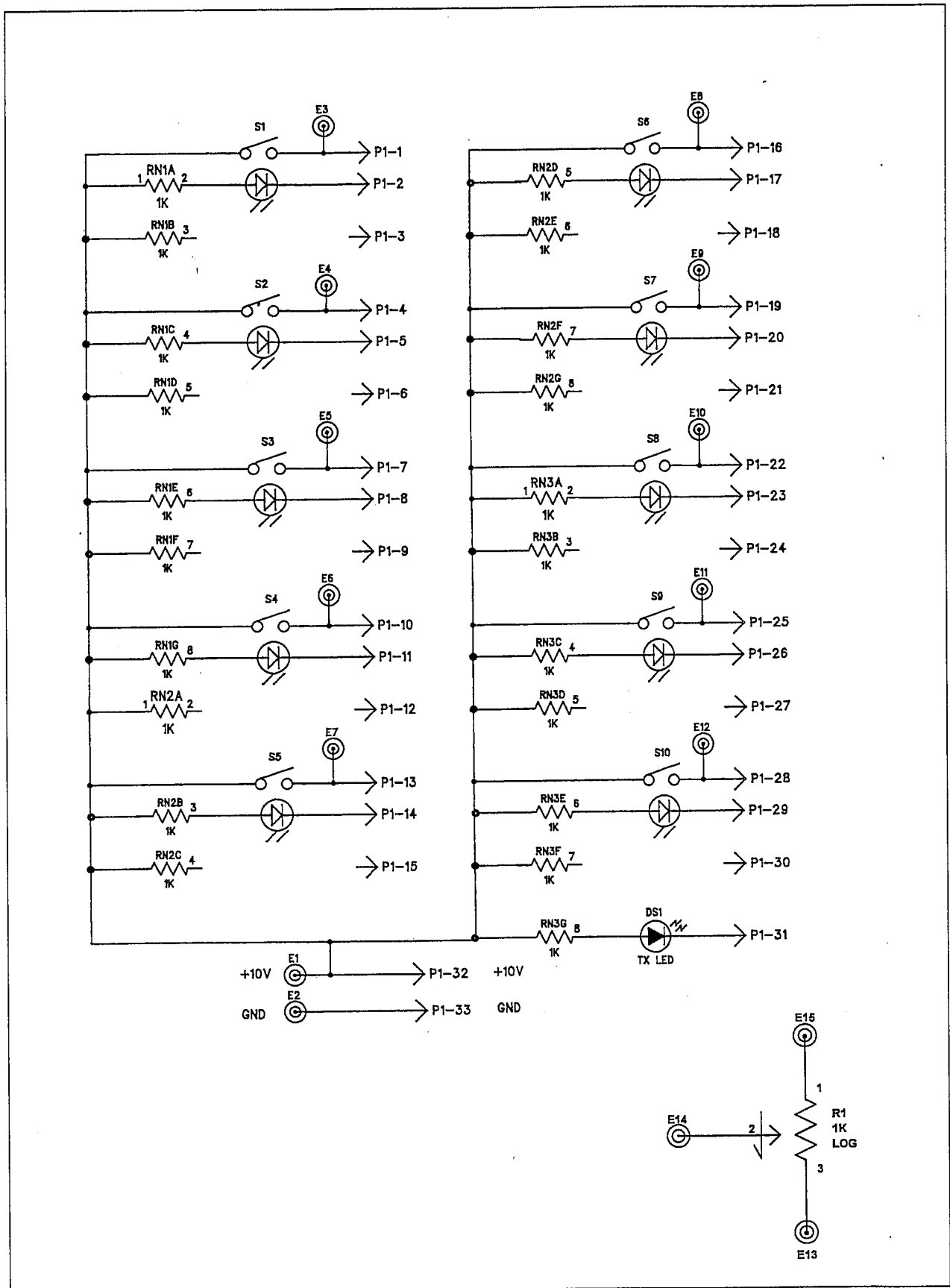


Figure 6.  
C-582/C-583 switch PCB.

## Technical Assistance

Vega products are engineered to meet your requirements of performance, reliability, and compatibility. Technical assistance is offered by correspondence or telephone, should it be required, to assure your satisfaction.

## Vega FaxBack

Information including more detailed procedures, schematics, and other Vega products is available 24 hours per day from Vega's FaxBack system. Simply call (818) 444-2017 or 800 274-2017, then follow the voice instructions.

## Warranty (Limited)

All Vega signaling products are guaranteed against malfunction due to defects in materials and workmanship for three years, beginning at the date of original purchase. If such a malfunction occurs, the product will be repaired or replaced (at our option) without charge during the three-year period, if delivered to the Vega factory. Warranty does not extend to damage due to improper repairs, finish or appearance items, or malfunction due to abuse or operation under other than the specified conditions, nor does it extend to incidental or consequential damages. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation may not apply to you. This warranty gives the customer specific legal rights, and there may be other rights which vary from state to state.

## Claims

No liability will be accepted for damages directly or indirectly arising from the use of our materials or from any other causes. Our liability shall be expressly limited to replacement or repair of defective materials.

## C-582/C-583 Parts List

Part No	Description	Ckt Sym				
012-0063	PWB ASSY C-582/3 MAIN		112-1678	CAP ELEC 1.0UF 50V NP	C2	
065-0445	PCB C582/3 MAIN			C12, C14, C15, C19, C20, C22, C23, C24, C28, C37, C39, C56		
071-0556	SCHEM C-582/3 MAIN		112-1685	CAP ELEC 10MF 16V NP	C8	
102-0160	CAP CER 30P S2L 5% 50V	C54		C9, C16, C21, C29, C32, C48		
	C55		112-1689	CAP ELEC 470MF 25V RAD	C10	
105-1001	CAP MYLAR .001MF 10% 100V	C17		C33, C36, C49, C51		
105-1002	CAP MYLAR .0015MF 10% 100	C46	112-1703	CAP ELEC 0.22UF 50V 20%	C60	
105-1009	CAP MYLAR .022MF 10% 100V	C11	130-0643	RES VAR 100K HOR MT	R86	
	C44			R87		
110-1319	CAP CER .01MF SM 50V	C42	130-0662	VAR POT 50K HOR MT	R52	
	C57		130-0673	RES VAR 10K 20T 3/8SQ	R 8	
110-1320	CAP CER .001MF 20% 50V	C7		R32		
	C31, C34, C43		130-0684	RES VAR 250K HOR MT	R57	
110-1339	CAP CER .33MF SMALL	C61		R58		
110-1340	CAP CER .1MF SMALL	C4	130-0725	RES VAR 10K LOG PC HADJ	R5	
	C13, C18, C25, C27, C30, C35, C38, C40, C41, C45, C47, C53, C58, C59		132-0004	RES RN55C 32.4K 1% 1/4W	R4	
				R23, R33		
110-1345	CAP CER .0022MF 5% NPO	C 3	133-0001	RES CRBN 1.0 OHM 5% 1/2W	R51	
	C 5, C 6, C50			R99		
112-1609	CAP ELEC 100MF 20% 25V	C1	133-0002	RES CRBN 2.2 OHM 5% 1/2W	R50	
	C26			R77		
112-1659	CAP ELEC 4.7MF NP 10V	C52	134-0212	RES RN55D 10.0K 1% 1/4W	R65	
			134-2859	RES RN55D 35.7K 1% 1/4W	R24	
			134-2867	RES RN55D 7.50K 1% 1/4W	R66	

134-2879	RES RN55D 39.2K 1% 1/4W	R25	161-0426	DIODE 1N4148	CR 1
134-2903	RES RN55D 1.00K 1% 1/4W R31	R20		CR 2, CR 3, CR 4, CR 5, CR 8, CR 10, CR 11, CR 12, CR 15, CR 16, CR 17, CR 20, CR 22, CR 23, CR 24, CR 25, CR 28, CR 29, CR 33, CR 34, CR 35, CR 36, CR 39, CR 40, CR 47, CR 48, CR 53, CR 54, CR 59, CR 62, CR 65, CR 66, CR 68, CR 70, CR 73, CR 74, CR 75, CR 77, CR 79, CR 87, CR 88, CR 89, CR 91, CR 93, CR 94, CR 96, CR 97, CR 98, CR 99, CR100, CR101, CR102, CR103, CR104, CR105, CR106, CR107, CR108, CR109, CR110, CR111, CR112, CR113, CR114, CR115	
134-2947	RES RN55D 249K 1% 1/4W R42	R41			
134-3017	RES RN55D 442K 1% 1/4W R63	R40			
134-3042	RES RN55D 31.6K 1% 1/4W	R71			
136-0003	RES COMP 8.2 5% 1/4W	R45	162-0002	DNET CMNC 4XCR	DN1
136-0024	RES COMP 220 5% 1/4W	R70	165-1216	XTAL 2.8275MHZ HC-18	Y1
136-0028	RES COMP 470 5% 1/4W	R73	286-1766	CONN JUMPER PLUG	
136-0029	RES COMP 560 5% 1/4W R13	R12	286-1768	PIN TEST POINT	TP1
136-0030	RES COMP 680 5% 1/4W	R16		TP2, TP3, TP4, TP5, TP6	
136-0031	RES COMP 820 5% 1/4W R11	R 1	286-1770	TERM STRIP 8 PIN MINI	TB1
136-0032	RES COMP 1K 5% 1/4W R19, R98	R 3	286-1772	CONNECTOR 36PIN STRIP TIN	
136-0036	RES COMP 2.2K 5% 1/4W R39	R22	286-1830	CONN PCB MODULAR HANDSET	J1
136-0040	RES COMP 4.7K 5% 1/4W R68	R44	286-1831	CONN PCB MODULAR LINE	J2
136-0042	RES COMP 6.8K 5% 1/4W R53	R28	286-1833	TERM QUICK CONNECT	
136-0044	RES COMP 10K 5% 1/4W R10, R15, R18, R56, R62, R75, R76, R79, R97	R 9 R75,	286-1850	CONN PCB MOD LINE 6-WIRE	J3
136-0045	RES COMP 12K 5% 1/4W	R35	286-1851	RECPT PCB SPADE LUG DUAL J6, J7, J8	J4
136-0047	RES COMP 18K 5% 1/4W R84	R26	286-1863	TERM STRIP 2 PIN MINI	TB2
136-0048	RES COMP 22K 5% 1/4W R14, R17, R21, R27, R29, R37, R38, R43, R46, R47, R49, R54, R55, R59, R61, R74, R78, R82, R85, R88, R90, R91, R92, R93, R94	R 2 R37, R54, R82, R93,	286-1870	CONN PCB 3PIN KEYED	J9
136-0049	RES COMP 27K 5% 1/4W	R96	286-1898	HEADER PWB 34PIN LO-PROF	P1
136-0050	RES COMP 33K 5% 1/4W R81	R34	318-0246	XFORMER 10K CT-10K CT	T2
136-0054	RES COMP 68K 5% 1/4W	R 6	318-0260	XFORMER 8-1200 OHM	T1
136-0055	RES COMP 82K 5% 1/4W	R83	425-0105	IC OPAMP 4558 DUAL U 8, U10, U20	U 2
136-0056	RES COMP 100K 5% 1/4W R60, R64, R67, R89	R30	425-0178	INT CKT NE570N	U11
136-0060	RES COMP 220K 5% 1/4W R95	R69	425-0181	IC OPAMP TL084 QUAD BFET	U1
136-0062	RES COMP 330K 5% 1/4W R48	R36	425-0186	IC CMOS 4018 PROG CNTR	U15
136-0066	RES COMP 680K 5% 1/4W	R72	425-0203	IC CMOS 4569 PROG CNTR	U19
136-0080	RES COMP 10M 5% 1/4W	R80	425-0204	IC CMOS 4025 TRIP 3NOR U26	U25
136-0281	RES COMP 43K 5% 1/4W	R7	425-0206	IC CMOS 4584 HEX TRIG U24	U21
138-0015	RNET CMN 9X22K SIP	RN2	425-0215	INT CKT ULN2004A U17	U7
138-0017	RNET CMN 7X100K SIP RN4	RN3	425-0224	IC REG-P 7810C 10V 1.5A	U3
138-0045	RNET ISO 5X33K SIP	RN1	425-0235	INT CKT UA759	U9
149-0642	XSTR NDMOS 2N7000 TO92 SW Q2	Q1	425-0262	IC CMOS 4044 QUAD LATCH	U16
161-0366	DIODE 1N4003	CR6	425-0273	INT CKT CD4073B U 6, U12	U5
161-0421	DIODE HP2800	CR13	425-0274	INT CKT CD4043B U13, U14	U4
	CR14, CR21		425-0285	IC CMOS 4066 QUAD SW U23	U22
			425-0454	IC PWRAMP TDA-2003V	
			528-0003	SCREW PH 4-40X1/4	
			538-0075	NUT KEP 4-40	
			561-0652	SWAGE STDF 4-40X1/4	
			674-0226	CORD PWR 2C 24 GA	

## C-582/C-583 Specifications

### Input Impedance

**Two-Wire:** 600  $\Omega$  or 2.6 k $\Omega$ , transformer-isolated

**Four-Wire:** 600  $\Omega$  or 8 k $\Omega$ , transformer-isolated

**Line Input Level:** -28 dBm to +12 dBm, adjustable

**Output Impedance:** 600  $\Omega$  or 2.6 k $\Omega$ , transformer-isolated

**Line Output Level:** -25 to +12 dBm into a 600- $\Omega$  line

**Audio Compression (Receive and Transmit):** Less than 3 dB change in output level for a 20-dB change in input above threshold

**Distortion:** 2% maximum at full compression

**Hum and Noise:** 50 dB below operating levels

**Speaker:** 4 in, 8  $\Omega$ , heavy-duty

**Amplifier Power:** 1.0 W at 10% THD into 8 ohms; 2.0 W at 10% THD into 4  $\Omega$  (8- $\Omega$  internal speaker plus external 8- $\Omega$  speaker)

**Handset Earpiece Level:** Volume-control adjustable

**Sidetone Level:** About 25 dB below receive level

**Audio Frequency Response:**  $\pm 1.5$  dB, 300 to 3000 Hz, except at the transmit tone notch frequency

**Notch Filter:** 2175 Hz; typically attenuates the parallel console PTT tone by 45 dB

**Tone Frequencies and Accuracies:** PTT, 2175 Hz, 0.01%; MON, 2050 Hz, 0.1%; F1, 1950 Hz, 0.01%; F2, 1850 Hz, 0.05%; F3, 1750 Hz, 0.29%; F4, 1650 Hz, 0.3%; F5, 1550 Hz, 0.32%; F6, 1450 Hz, 0.14%; F7, 1350 Hz, 0.33%; F8, 1250 Hz, 0.24%

**Operating Temperature Range:** 0 to +50°C

**Power Requirements:** 117 V<sub>ac</sub>, 60 Hz, 8 W, or 11.5 to 18 V<sub>dc</sub> at 110 mA idle to 550 mA at 2.0 W output and 600 mA at 5 W output

**Visual Indicators:** LEDs for MON, F1, F2, F3, F4, F5, F6, F7, F8, INTERCOM, and TX

**Line Interface:** Two-wire or four-wire, line-terminating or line-bridging, solder-bridge selectable

**Operating Modes:** Simplex with two-wire line, simplex or duplex with four-wire lines; 1-of-8 frequency select or 2 & 6 or 4 & 4 paired (frequency/wildcard)

**Miscellaneous:** Crystal-controlled tone frequencies; adjustable duration of tones; electret microphone element (C-582); dynamic desk microphone (C-583); modular-cord line connector; auxiliary audio input terminals; external-speaker terminals; battery-backup input terminals; speaker mute when off-hook (C-582; defeatable); DTMF-pad and clock/VU options



a MARK IV company

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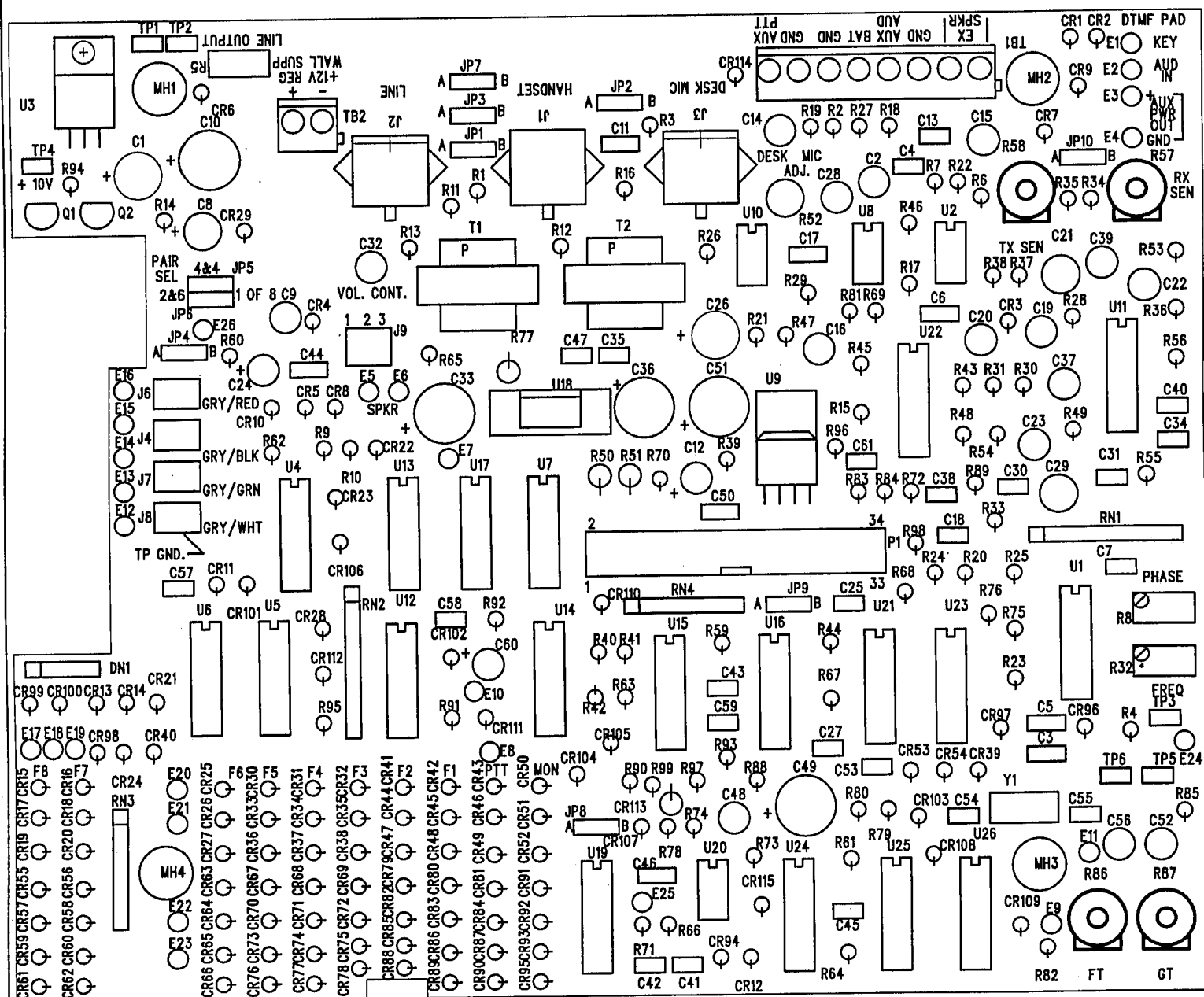
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# PRODUCTION PARTS LOCATOR

PCB NUMBER

MODEL NUMBER

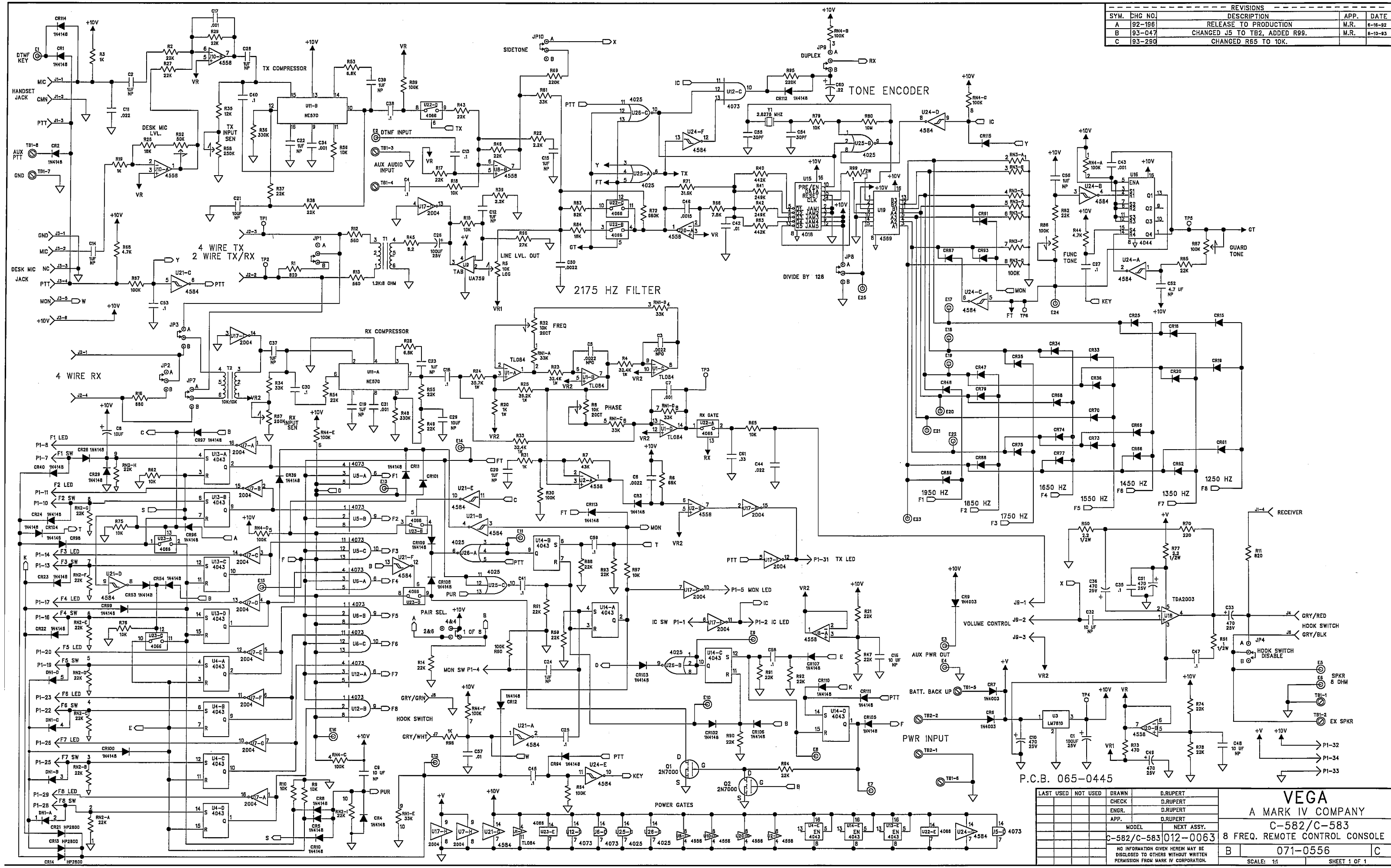
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065-0445 B

C-582/583

012-0063

REVISIONS			
SYM.	CHG NO.	DESCRIPTION	APP. DATE
A	92-196	RELEASE TO PRODUCTION	M.R. 6-16-92
B	93-047	CHANGED J5 TO TB2, ADDED R99.	M.R. 8-10-93
C	93-290	CHANGED R65 TO 10K.	



VEGA A MARK IV COMPANY			
C-582/C-583			
8 FREQ. REMOTE CONTROL CONSOLE			
C-582/C-583 012-0063			
B 071-0556 C			
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