
Global Wulfsberg *Install Bulletin*

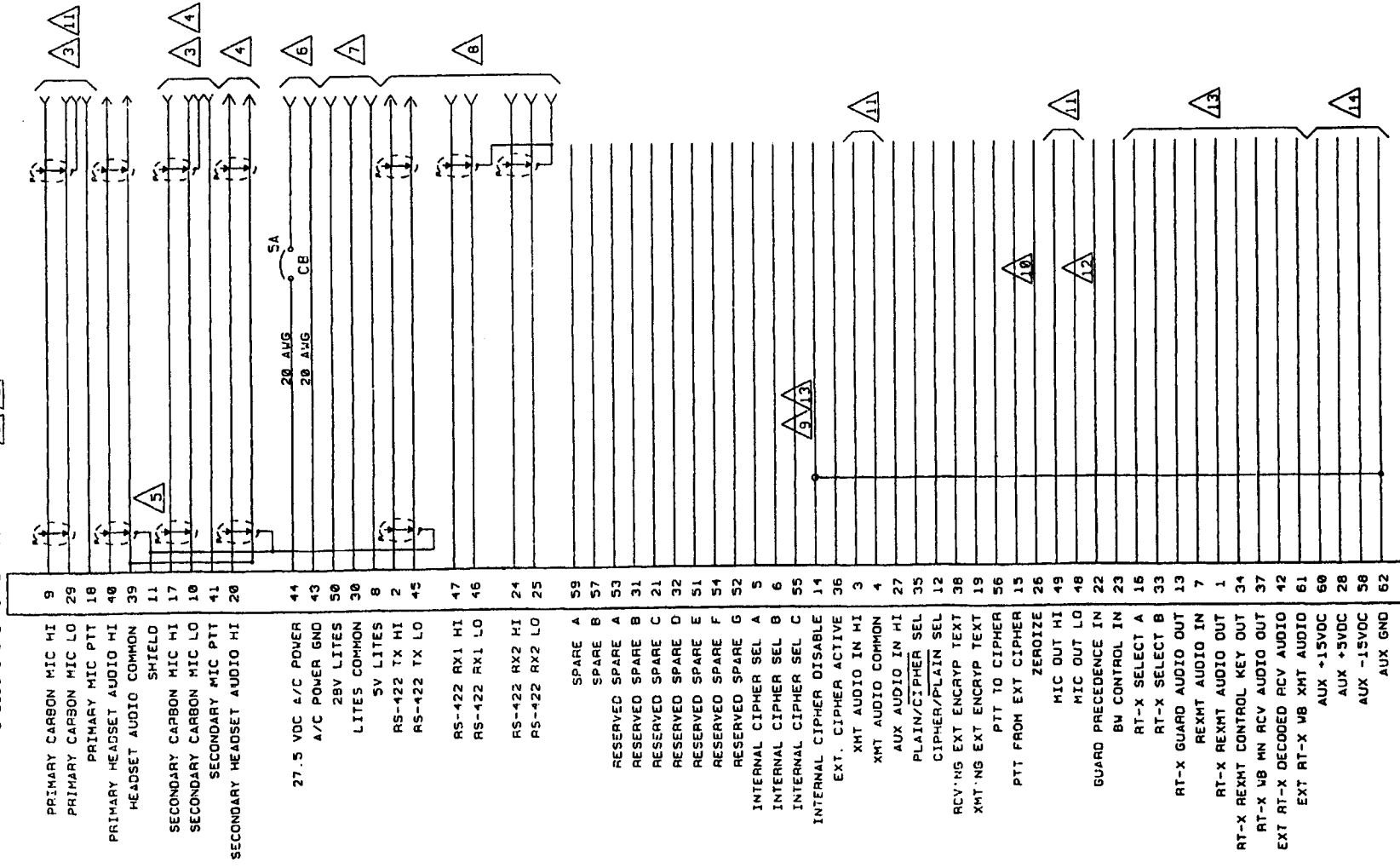
BULLETIN NO: IB #395

APPLICABLE TO: C-5000 Communication Management Controller

SUBJECT: Updated Aircraft Interface Drawings

The attached drawings are updated wiring diagrams showing the installation of the C-5000 in a general aircraft system, a system with KY-58 (or equivalent) Encryption System, and a system with Motorola DVP/DES[®] (or equivalent) Voice Encryption System. Note 18 on Sheet 1 was also supplemented with a reference to Tempest Testing to verify installation integrity. Sheet 4 of the drawings was deleted.

C-5000 SYSTEM INTERFACE CONNECTOR 1 2



NOTES:

1. SEE "INSTALLATION WIRING CONFIGURATIONS" SECTION OF INSTALLATION MANUAL FOR PERTINENT ADDITIONAL INFORMATION TO THIS DIAGRAM.
2. PS00 SYSTEM INTERFACE CONNECTOR
GWS P/N 129-215344-01
VENDOR: POSITRONICS P/N 0062F00Y0C-914.1 OR EQUIVALENT. (THIS CONNECTOR HAS 2 MALE JACK SCREWS).
3. MIC LO AND PTT SHOULD BE CONNECTED TOGETHER AT THE MIC INTERFACE (AUDIO PANEL OR MIC JACK). ALTERNATELY, MIC LO SHOULD BE GROUNDED AT THE MIC INTERFACE AS MIC BIAS IS NOT PROVIDED UNLESS MIC LO IS DC GROUNDED.
4. SECONDARY MIC AND HEADSET AUDIO INTERFACE USED ONLY AS AN OPTION WITH 2 (OR 3) RADIO SYSTEMS CONTROLLED BY C-5000. SECONDARY INTERFACE PROVIDES INDEPENDENT, SECOND CREW OPERATION OF ONE OF THE 2 OR 3 RADIO SYSTEMS. NOT ALL FUNCTIONS ARE SUPPORTED FOR THIS INTERFACE.
5. ONLY SHIELDS OF SIGNALS ORIGINATING FROM THE C-5000 SHOULD BE TERMINATED ON THIS PIN. SHIELDS OF SIGNALS ORIGINATING AT OTHER EQUIPMENT AND TERMINATING AT THE C-5000 SHOULD ONLY BE TERMINATED AT THE OTHER EQUIPMENT.
6. AIRCRAFT POWER SHOULD BE SUPPLIED THRU APPROPRIATE CIRCUIT BREAKER AND CONSIDERATION GIVEN TO THE SEPARATELY POWERED RADIO TRANSMITTER EQUIPMENT BEING CONTROLLED BY THE C-5000.
7. 5VDC, 5Vrms, 28VDC LIGHTING PROVIDED. CONNECT EITHER 5V OR 28V; NOT BOTH.
8. NO POWER IS DRAWN FROM THE BUSS.
9. THESE PINS PROVIDE FOR BI-DIRECTIONAL DIGITAL DATA BUSS TO OTHER EQUIPMENT ON BOARD THE AIRCRAFT.
10. THIS PIN IS NORMALLY GROUNDED UNLESS AN INTERNAL CIPHER MODULE (OR OTHER SPECIAL FUNCTION MODULE) IS INSTALLED IN WHICH CASE IT SHOULD BE SWITCHED.
11. THE ZEROIZE FUNCTION PROVIDES AN OUTPUT FROM THE C-5000 TO ENCRYPT-ION EQUIPMENT TO ERASE KEY VARIABLES. THE OUTPUT CAN BE CONFIGURED ONE OF TWO WAYS: NORMALLY OPEN CIRCUIT WITH ACTIVE GROUND TO ZEROIZE OR NORMALLY OPEN WITH ACTIVE 27.5VDC FOR ZEROIZE. STANDARD CONFIGURATION IS ACTIVE 27.5VDC TO ZEROIZE. JUMPER A2JP8 ON THE SYSTEM INTERFACE BOARD CAN BE CHANGED FROM "1 TO 2" TO "2 TO 3" TO YIELD ACTIVE GROUND FOR ZEROIZE.
12. IF THE SYSTEM IS CONFIGURED WITH EXTERNAL ENCRYPTION SYSTEMS CONNECTED TO THE SYSTEM INTERFACE, INTERNAL JUMPER CHANGES ON THE SYSTEM INTERFACE BOARD ROUTE THE PRIMARY MIC AUDIO THRU THE ENCRYPTION SYSTEM SUCH THAT WHEN THE ENCRYPTION EQUIPMENT IS REMOVED, MIC AUDIO IS LOST. JUMPERS IN THE AIRCRAFT HARNESS BETWEEN MIC OUT HI/LO AND XMT AUDIO IN HI/COMMON WILL RESTORE MIC AUDIO CONTINUITY WHEN THE ENCRYPTION EQUIPMENT IS REMOVED.
13. GROUNDING THIS PIN CAUSES ALL C-5000 MODES TO BE DISABLED AND THE SYSTEM IS CHANNLED TO THE PRECEDENCE PRESET MEMORY CHANNEL FOR BASIC CREW. SELECTION MAY BE FROM THE C-5000 KEYBOARD/KNOBS OR AN EXTERNAL SWITCH. RT-X CAN BE ONLY 1 OF THE 3 RADIO SYSTEMS. THE CORRESPONDING SIGNALS TO/FROM THE SELECTED RT RADIO SYSTEM ARE ROUTED TO THE INTERNAL CIPHER MODULE (OR SPECIAL FUNCTION MODULE) OR THE EXTERNAL SYSTEM INTERFACE TO BECOME THE RT-X SELECTED SIGNALS. INTERNAL/EXTERNAL SIGNAL ROUTING IS CONTROLLED BE EXTERNALLY APPLIED GROUND OR SWITCHED GROUND TO THE "INTERNAL CIPHER DISABLE".
14. AUXILIARY VOLTAGES FOR EXTERNAL LOADS (17 WATTS TOTAL MAX) INTERNAL JUMPERS REQUIRED TO ACTIVATE THE -15V AND +5V OUTPUTS.
15. MOTOROLA AND DVP/DES ARE REGISTERED TRADEMARKS OF MOTOROLA, INC.
16. GE AND VOICE GUARD ARE REGISTERED TRADEMARKS OF GENERAL ELECTRIC, INC.

17. THIS WIRING DIAGRAM IS FOR THE SYSTEM INTERFACE CONNECTOR (PS00) SEE INSTALLATION WIRING DIAGRAM 147-014991 FOR THE FLETCOMM TRANS-CEIVER INTERFACE CONNECTOR (PS0X) AND 147-014992 FOR THE RT-9600(F) INTERFACE CONNECTOR (PS0X). THE C-5000 CAN HAVE UP TO THREE TRANS-CEIVER INTERFACES: PS01, PS02, PS03 OF ANY COMBINATION OF THREE TRANS-CEIVERS.
18. ALL RT-138F, RT-1405F AND RT-9600F TRANSCIEVERS ARE INHERENTLY COMPATIBLE WITH DIGITAL VOICE ENCRYPTION SYSTEMS (12KBIT). TRANSCIEVERS WITH P/N'S ENDING IN -X5X, X6X, X7X ARE SPECIALLY WIRED INTERNALLY TO FACILITATE DIRECT CONNECTIONS TO MOTOROLA AND GE ENCRYPTION SYSTEMS. WHEN THE MOTOROLA, GE OR KY-58 ENCRYPTION SYSTEMS ARE WIRED TO THE C-5000 AS SHOWN, STANDARD F MODEL RADIOS MUST BE USED, I.e. NON-X5X, -X6X, X7X. WHEN CONNECTING ENCRYPTION TO A RADIO SYSTEM EACH INSTALLATION SHOULD PERFORM TEMPEST TESTING WHERE APPLICABLE TO VERIFY INSTALLATION INTEGRITY.

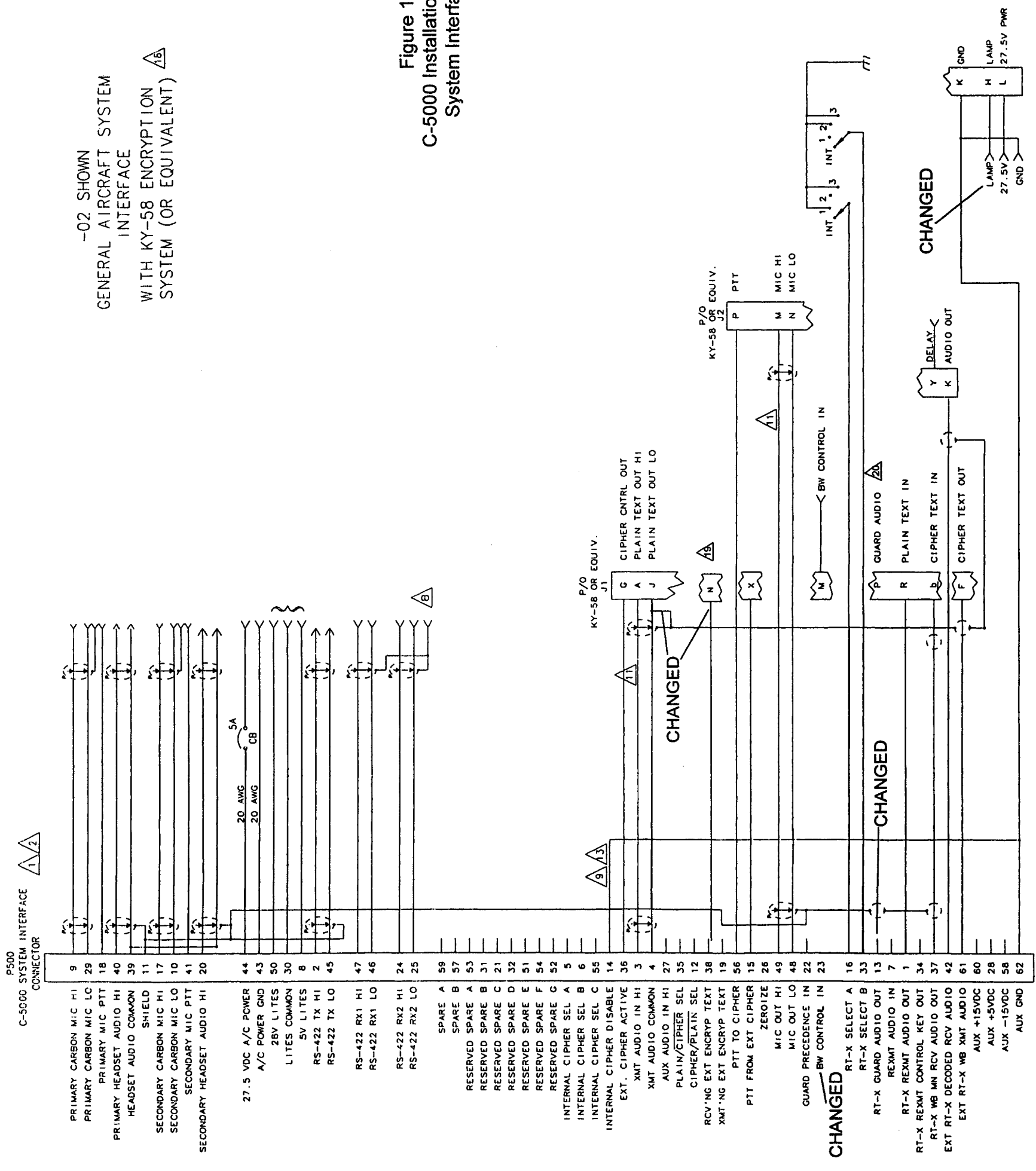
CHANGED

19. CONNECT FOR CIPHER RX INDICATION.
20. REMOVED TO ALLOW USE OF INTERNAL C-5000 GUARD PATH.

ADDED

-01 SHOWN
GENERAL AIRCRAFT SYSTEM
INTERFACE

Figure 1, Page 1 of 3
C-5000 Installation Wiring Diagram
System Interface Schematic

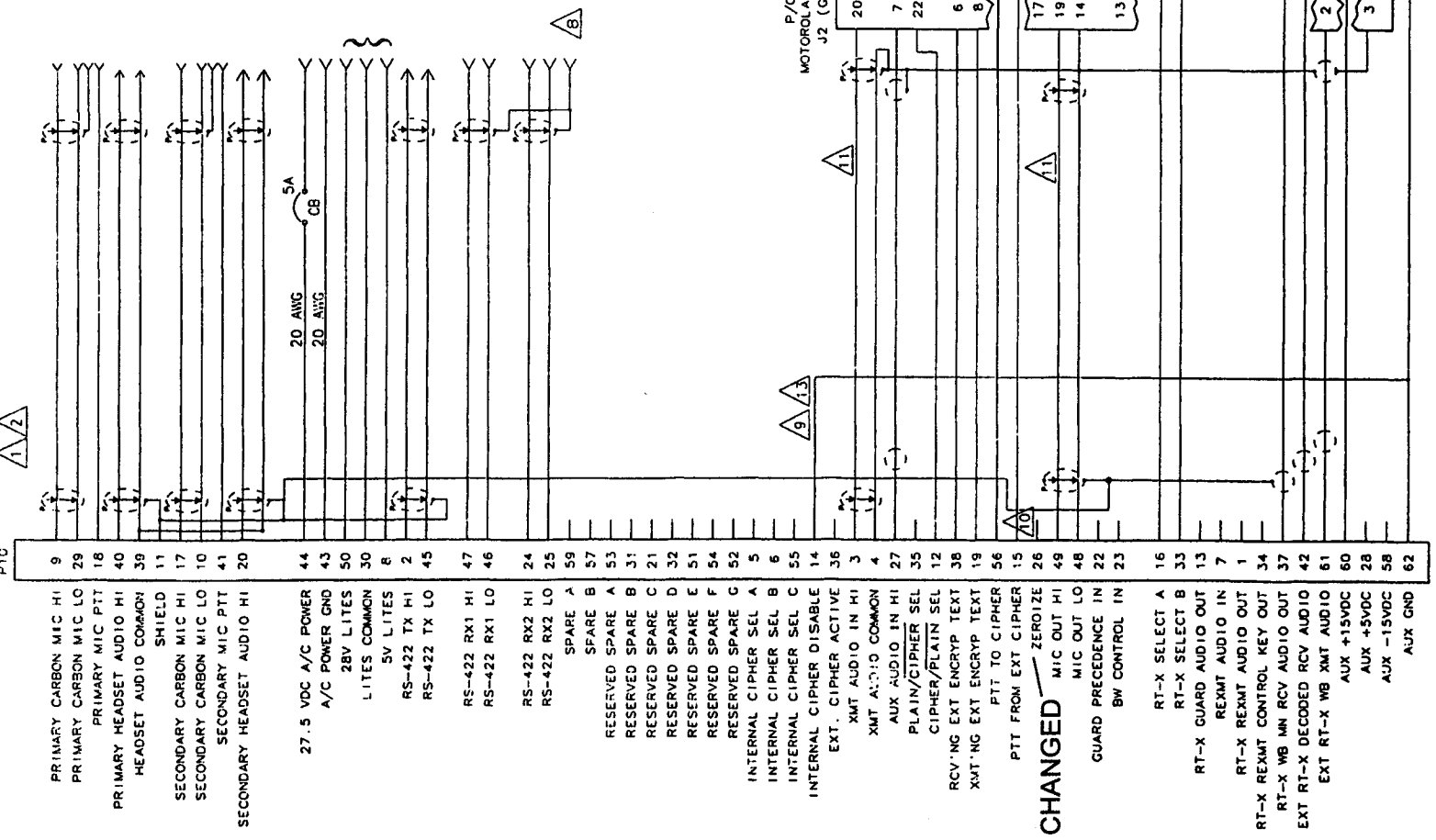


-02 SHOWN
 GENERAL AIRCRAFT SYSTEM
 INTERFACE
 WITH KY-58 ENCRYPTION
 SYSTEM (OR EQUIVALENT)

Figure 1, Page 2
 C-5000 Installation Wiring Diagram
 System Interface Schematic

P500
C-5000 SYSTEM INTERFACE CONNECTOR
P10

-03 SHOWN
GENERAL AIRCRAFT SYSTEM
INTERFACE
WITH MOTOROLA DVP/DES®
VOICE ENCRYPTION SYSTEM
(OR EQUIVALENT) ⚠



- 9 PRIMARY CARBON MIC HI
- 29 PRIMARY CARBON MIC LO
- 18 PRIMARY MIC PTT
- 40 PRIMARY HEADSET AUDIO HI
- 39 HEADSET AUDIO COMMON
- 11 SHIELD
- 17 SECONDARY CARBON MIC HI
- 10 SECONDARY CARBON MIC LO
- 41 SECONDARY MIC PTT
- 20 SECONDARY HEADSET AUDIO HI
- 44 27.5 VDC A/C POWER
- 43 A/C POWER GND
- 50 28V LITES
- 30 LITES COMMON
- 8 5V LITES
- 2 RS-422 TX HI
- 45 RS-422 TX LO
- 47 RS-422 RX1 HI
- 46 RS-422 RX1 LO
- 24 RS-422 RX2 HI
- 25 RS-422 RX2 LO
- 59 SPARE A
- 57 SPARE B
- 53 RESERVED SPARE A
- 31 RESERVED SPARE B
- 21 RESERVED SPARE C
- 32 RESERVED SPARE D
- 51 RESERVED SPARE E
- 54 RESERVED SPARE F
- 52 RESERVED SPARE G
- 5 INTERNAL CIPHER SEL A
- 5 INTERNAL CIPHER SEL B
- 6 INTERNAL CIPHER SEL C
- 55 INTERNAL CIPHER SEL C
- 14 INTERNAL CIPHER DISABLE
- 36 EXT. CIPHER ACTIVE
- 3 XMT AUDIO IN HI
- 4 XMT AUDIO IN HI
- 27 XMT AUDIO IN HI
- 35 PLAIN/CIPHER SEL
- 12 CIPHER/PLAIN SEL
- 38 RCV'NG EXT ENCRYP TEXT
- 19 XMT'NG EXT ENCRYP TEXT
- 56 PTT TO CIPHER
- 15 PTT FROM EXT CIPHER
- 26 ZEROIZE
- 49 MIC OUT HI
- 48 MIC OUT LO
- 22 GUARD PRECEDENCE IN
- 23 BW CONTROL IN
- 16 RT-X SELECT A
- 33 RT-X SELECT B
- 13 RT-X GUARD AUDIO OUT
- 7 RXMT AUDIO IN
- 1 RXMT AUDIO OUT
- 34 RT-X RXMT CONTROL KEY OUT
- 37 RT-X WB MN RCV AUDIO OUT
- 42 EXT RT-X DECODED RCV AUDIO
- 61 EXT RT-X WB XMT AUDIO
- 60 AUX +15VDC
- 28 AUX +5VDC
- 58 AUX -15VDC
- 62 AUX GND

Figure 1, Page 3
C-5000 Installation Wiring Diagram
System Interface Schematic