

ARMY TM 11-5895-808-13-11
NAVY EE130-MD-MAN-110/USC28(V)
AIR FORCE TO 31R2-2USC28-1-11

OPERATOR'S, ORGANIZATIONAL, AND
DIRECT SUPPORT MAINTENANCE MANUAL
SATELLITE COMMUNICATIONS SET
AN/USC-28(V)
(NSN 5895-01-089-7518)

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DEPARTMENTS OF THE ARMY, NAVY, AND THE AIR FORCE

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15 AUGUST 1988

TECHNICAL MANUAL
No. 11-5895-808-13-11
TECHNICAL MANUAL
EE130-M)-MAN-110/USC28(V)
TECHNICAL ORDER
TO 31R2-2USC28-1-11

TM 11-5895-805-13-11
EE130-MD-MAN-110/USC28(V)
TO 31R-2USC28-1-11
DEPARTMENTS OF THE ARMY,
THE NAVY, AND
THE AIR FORCE

Washington, DC, 15 August 1988

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This technical manual consists of eleven volumes, each with a separate content. This volume contains appendixes S through X (mitigated wire lists). TM 11-5895-808-13-1 contains chapter 1, 2, and 3. TM 11-5895-808-13-2 contains chapter 4. TM 11-5895-808-13-3 contains chapter 5. TM 11-5895-808-13-4 contains classified information. TM 11-5895-808-13-5 contains appendixes A through F, the glossary, and the index. TM 11-5895-808-13-7 and TM 1-15895-808-13-R contain non-mitigated wire lists. TM 11-5895-808-13-9 contains chapters 6 through 10. TM 11-5895-808-13-10 contains chapters 11 through 15 and appendix R (maintenance allocation chart).

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in back of this manual direct to: Commander, US Army Communication-Electronics Command and Fort Monmouth, ATTN: AMSEL-LC-LM-PS, Fort Monmouth, NJ 07703-5000.

For Air Force, submit AFTO Form 22 (Technical Order System Publication Improvement Report and Reply) in accordance with paragraph 6-5, Section VI, T.O. 00-5-1. Forward directly to prime ALC/MST.

For Navy, mail comments to the Commander, Space and Naval Warfare Systems Command ATTN: SPAWAR 8122, Washington, DC 20363-5100.

In either case, a reply will be furnished direct to you.

INTRODUCTION

Appendixes G through Q contain non-mitigated wire lists and appendixes S through X contain mitigated wire lists for each unique unit and drawer of the AN/USC-28(V). The wire lists are a part of the maintenance test data to support and maintain the AN/USC-28(V) in a serviceable condition. The wire lists in each volume and appendix are:

Volume	Appendix	Name	Part Number
6	G	CSU Cabinet Wire List (Master and Slave)	WL466989-801
		CSU Cabinet Wire List (Airborne Slave)	WL466989-802
6	H	COMM R/T Unit Cabinet Wire List	WL466990
7	I	Tx IF Patch Drawer Wire List (Non-Mitigated)	WL466987
7	J	Receiver IF Patch Drawer Wire List (Non-Mitigated)	WL466986
7	K	Receiver/AFI Drawer Wire List (Non-Mitigated)	WL466904
8	L	CSU R/T Drawer Wire List (Non-Mitigated)	WL466985
8	M	Control IF Patch Drawer Wire List	WL466982
8	N	COM R/T Drawer Wire List (Non-Mitigated)	WL466988
		COMM R/T Drawer Wire List (Non-Mitigated, DECS 2A6)	WL466988-812
8	O	Receiver and Synthesizer Drawer Wire List (Non-Mitigated)	WL466983
8	P	Programmable Controller Drawer Wire List	56354
8	Q	Interface Unit Wire List	7051701
11	S	Tx IF Patch Drawer Wire List (Mitigated)	WL466907-002
11	T	Receiver IF Patch Drawer Wire List (Mitigated)	WL466986-802
11	U	Receiver/AFI Drawer Wire List (Mitigated)	WL466984-802
11	V	CSU R/T Drawer Wire List (Mitigated)	WL466905-802
11	W	COMM R/T Drawer Wire List (Mitigated)	WL466908-802
		COMM R/T Drawer Wire List (Mitigated, DECS 2A6)	W466988-813
11	X	Receiver and Synthesizer Drawer Wire List (Mitigated)	WL466983-802

HOW TO USE THESE WIRE LISTS

The wire lists in Appendixes G through Q (Volumes 6, 7, and 8) provide a complete inventory of the interconnections within the AN/USC-28(V). The lists specify the origin, destination, color, type of connection at each end, gage of the wire, and type of all wires and cables within the cabinets and drawers of the AN/USC-28(V). Signal names and a brief description of the signal conveyed are also included. The wire lists are arranged in alphanumeric order by connector and pin number in the FROM column.

All lists except Appendix P contain the following column headings: T, FROM PIN, TO PIN, T, COL, GA, ITEM, SIGNAL, MODULE, and DESCRIPTION. Column headings for appendix P are described in paragraph P-1. Some headings do not apply to every list. The information in the columns is as follows:

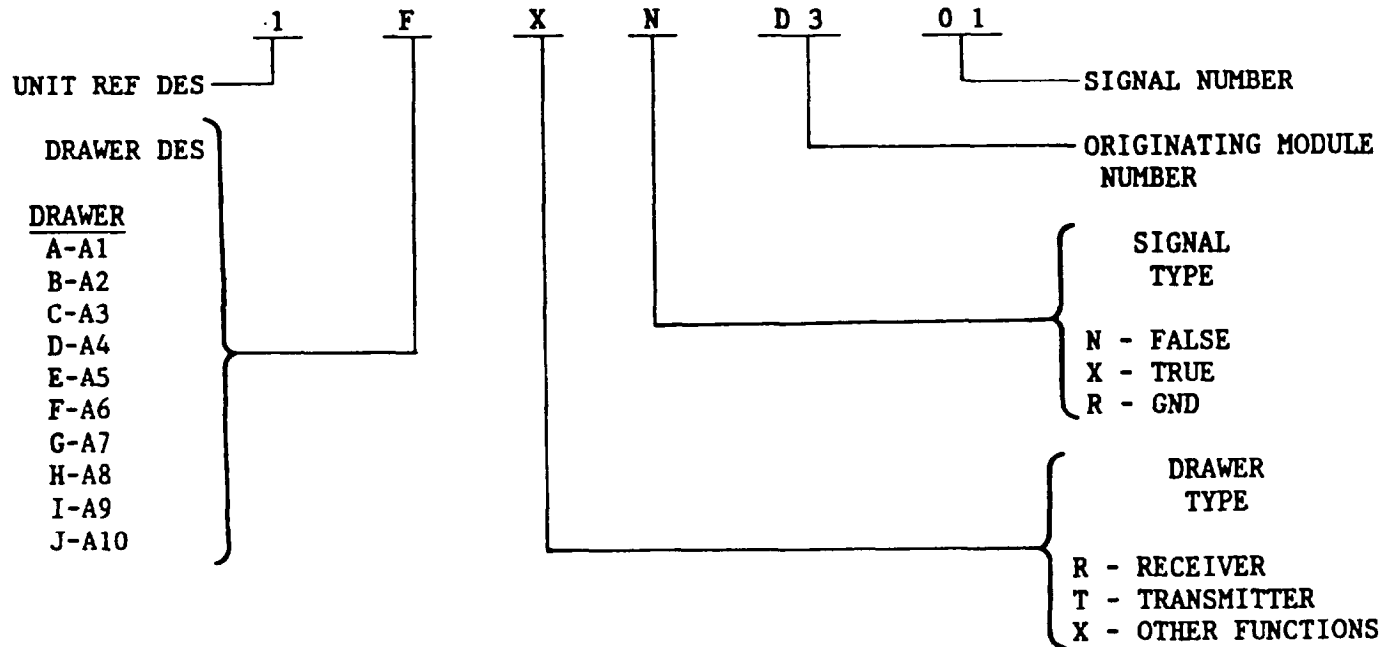
<u>T</u>	A single letter designates the type of connection at the FROM PIN: W = wire wrapped S = soldered C = crimped
<u>FROM PIN</u>	The connector and pin number of the wire origin.
<u>TO PIN</u>	The connector and pin number of the wire destination.
<u>T</u>	A single letter designates the type of connection at the TO PIN: W = wire wrapped S = soldered C = crimped
<u>COL</u>	Color of the wire. If the wire is coaxial, this column lists CTR for the center conductor and SHD for the shield. If the resistor is terminated, the resistor value (in $\kappa\Omega$) is specified.
<u>GA</u>	Gage of the wire in AWG.
<u>ITEM</u>	Type of wire. The abbreviations are: RES = resistor terminated RG188 = coaxial cable RG223 = coaxial cable SH PR = shielded pair SOLID = solid STRND = stranded TS PR = twisted shielded pair TWPR = twisted pair

SIGNAL A code up to eight digits describing the signal or voltage being conveyed by the wire.

A. Signals

Any or all of the first three digits may be deleted if the signal is contained completely within one unit, drawer or side.

Example:



B. Voltages

Lists the voltage or ground at that point.

Example:

-15VDC	-15 volts dc
+5VDC (A)	+5 volts dc
+GNDE10	+ and - voltage ground return at terminal E10

MODULE Two digit code (for modules) of the module in the MODULE column. See module code and component code lists. This column may also contain the reference designator of drawer or cabinet connectors.

MODULE CODES

AR	Receiver IF Amplifier	DE	User Data Interleaver
AT	Transmit IF Amplifier	DF	Data IPM
A1	Distribution Amplifier 1	D1	Data Director 1
A2	Distribution Amplifier 2	D2	Data Director 2
A3	Distribution Amplifier 3	D3	Data Director 3
A4	Distribution Amplifier 4	FC	Carrier IPM
BB	Baseband Interface	K9	KGV-9
BI	Beacon Interface	LR	Local Reference
BL	Beacon Logic	MA	Modulator Attenuator
BP	AFI INterface 2	OI	Orderwire Interleaver
BR	AFI Interface 1	OW	Orderwire Interface
BT	Beacon Timing	05	Order-wire Demodulator 5
B1	AFI 1	06	Orderwire Demodulator 6
B2	AFI 2	RB	Beacon Receiver
B3	AFI 3	U1	User Data Processor 1
B4	AFI 4	U2	User Data Processor 2
B5	AFI 5	U3	User Data Processor 3
B6	AFI 6	U4	User Data Processor 4
CB	Conference Interface	S1	Frequency Synthesizer 1
C1	Coder 1	S2	Frequency Synthesizer 2
C3	Coder 3	S3	Frequency Synthesizer 3
C4	Coder 4	TT	Antenna Tracking
C5	Coder 5	T1	Time Generator 1
		T2	Time Generator 2

COMPONENT CODES

(X stands for numeric character)

ATNXX	Attenuator	PS4	Power supply (full), A10 of CSU or Comm R/T Unit
BUSS	Power Supply bus	XXSWI	I/U Select Switch
DSX	Lamp holder	1CB1	CSU cabinet circuit breaker switch
PDXX	Power divuder (or combiner)	2CB1	Comm R/T Unit Cabines circuit breaker switch
PS1	Power supply (1/2), A7 of CSU or Comm R/T Unit	1M1	CSU elapsed time meter
PS2	Power supply (1/2), A8 of CSU or Comm R/T Unit	2M1	Comm R/T Unit elapsed 'time meter
PS3	Power supply (full), A9 of CSU or Comm R/T Unit	1TBX	CSU cabinet terminal board
		2TBX	Comm R/T Unit cabinet terminal board

DESCRIPTION A description of the signal. Due to space limitations a BAR signal may be indicated by adding BAR, BR or B at the end of the signal description; a shield may be indicated by SHD or S.

The first entries of each wire list show the history of the wire list by revision letter and date. Following the revision entries, reference designators for the external cables and their connectors are provided.

APPENDIX S

TX IF PATCH DRAWER WIRE LIST
(MITIGATED)

TX IF PATCH DRAWER WIRE LIST WL46698702 REV NONE

T	FROM	PIN	TO	PIN	T	COL	GA	ITEM	SIGNAL	MODULE	DESCRIPTION
S	DS1	A	E05	1	W	RED	22	STRND	+15VDC	REV DS1	NONE 05/03/88 +15VDC
S	DS1	B	XA01J01	47	W	WHT	22	STRND	XBR18	DS1	FLT LIGHT
W	E01	1	J09	55	W	BLU	26	TW PR	3BXROI05	BUSS	SEL 76.8KHZRTN
W	E01	1	J09	57	W	BLU	26	TW PR	3BXROI06	BUSS	SEL 300HZ RTN
W	E01	1							+-GNDE01	BUSS	GND
W	E02	1							-5.2VDC	BUSS	-5.2VDC
W	E03	1							+5VDC	BUSS	+5VDC
W	E04	1							-15VDC	BUSS	-15VDC
W	E05	1							+15VDC	BUSS	+15VDC
W	E06	1							+-GNDE06	BUSS	GND
W	E07	1							+-GNDE07	BUSS	GND
W	E08	1							+-GNDE08	BUSS	GND
W	E09	1							+-GNDE09	BUSS	GND
W	E10	1							+-GNDE10	BUSS	GND
W	E11	1							+-GNDE11	BUSS	GND
W	E12	1							+-GNDE12	BUSS	GND
W	E14	1							+-GNDE14	BUSS	GND
W	E15	1							+-GNDE15	BUSS	GND
W	E16	1							+-GNDE16	BUSS	GND
W	E17	1							+-GNDE17	BUSS	GND
W	E18	1							+-GNDE18	BUSS	GND
W	J01	1	XA02J01	100	W	WHT	26	TW PR	XD130	3A2J01	MOD ADR BIT 0
W	J01	2	XA02J01	40	W	BLU	26	TW PR	ND130	3A2J01	MOD ADR BIT 0B
W	J01	3	XA02J01	99	W	WHT	26	TW PR	XD131	3A2J01	MOD ADR BIT 1
W	J01	4	XA02J01	39	W	BLU	26	TW PR	ND131	3A2J01	MOD ADR BIT 1B
W	J01	5	XA02J01	119	W	WHT	26	TW PR	XD132	3A2J01	MOD ADR BIT 2
W	J01	6	XA02J01	59	W	BLU	26	TW PR	ND132	3A2J01	MOD ADR BIT 2B
W	J01	8	XA02J01	112	W	WHT	26	TW PR	XD133	3A2J01	MOD ADR BIT 3
W	J01	9	XA02J01	52	W	BLU	26	TW PR	ND133	3A2J01	MOD ADR BIT 3B
W	J01	10	XA02J01	107	W	WHT	26	TW PR	XD134	3A2J01	MOD ADR BIT 4
W	J01	11	XA02J01	47	W	BLU	26	TW PR	ND134	3A2J01	MOD ADR BIT 4B
W	J01	12	XA02J01	73	W	WHT	26	TW PR	XD135	3A2J01	MOD BYTE BIT0
W	J01	13	XA02J01	13	W	BLU	26	TW PR	ND135	3A2J01	MOD BYTE BIT0B
W	J01	14	XA02J01	72	W	WHT	26	TW PR	XD136	3A2J01	MOD BYTE BIT1
W	J01	15	XA02J01	12	W	BLU	26	TW PR	ND136	3A2J01	MOD BYTE BIT1B
W	J01	16	XA02J01	75	W	WHT	26	TW PR	XD137	3A2J01	MOD BYTE BIT2
W	J01	17	XA02J01	15	W	BLU	26	TW PR	ND137	3A2J01	MOD BYTE BIT2B
W	J01	18	XA02J01	102	W	WHT	26	TW PR	XD230	3A2J01	GTD CLK B2 Y

TX IF PATCH DRAWER WIRE LIST WL46698702 REV NONE

FROM	PIN	TO	PIN	T	COL	GA	ITEM	SIGNAL	MODULE	DESCRIPTION
J01	19	XA02J01	42	W	BLU	26	TW PR	ND230	3A2J01	GTD CLK B2 Z
J01	20	XA02J01	97	W	WHT	26	TW PR	XD231	3A2J01	SR DATA Y
J01	21	XA02J01	37	W	BLU	26	TW PR	ND231	3A2J01	SR DATA Z
J01	22	XA02J01	83	W	WHT	26	TW PR	XD232	3A2J01	TX Y
J01	23	XA02J01	23	W	BLU	26	TW PR	ND232	3A2J01	TX Z
J01	25	XA02J01	70	W	WHT	26	TW PR	XD233	3A2J01	BYTE EN Y
J01	26	XA02J01	10	W	BLU	26	TW PR	ND233	3A2J01	BYTE EN Z
J01	27	XA02J01	91	W	WHT	26	TW PR	XD234	3A2J01	XFR COMP Y
J01	28	XA02J01	31	W	BLU	26	TW PR	ND234	3A2J01	XFR COMP Z
J01	29	XA02J01	90	W	WHT	26	TW PR	XD241	3A2J01	15MHZ CLK Y
J01	30	XA02J01	30	W	BLU	26	TW PR	ND241	3A2J01	15MHZ CLK Z
J01	31	XA22J02	2	W	WHT	26	TW PR	3CXCB08	3A2J01	KEY LINE
J01	32	XA22J02	1	W	BLU	26	TW PR	3CXNCB08	3A2J01	KEY LINE BAR
J01	33	XA26J01	27	W	WHT	26	TW PR	3CXCB09	3A2J01	TX ADRS SW
J01	34	XA26J01	28	W	BLU	26	TW PR	3CXNCB09	3A2J01	TX ADRS SW BAR
J01	35	XA28J02	2	W	WHT	26	TW PR	3DXCB08	3A2J01	KEY LINE
J01	36	XA28J02	1	W	BLU	26	TW PR	3DXNCB08	3A2J01	KEY LINE BAR
J01	37	XA27J01	27	W	WHT	26	TW PR	3DXCB09	3A2J01	TX ADRS SW
J01	38	XA27J01	28	W	BLU	26	TW PR	3DXNCB09	3A2J01	TX ADRS SW BAR
J01	39	XA33J02	2	W	WHT	26	TW PR	3EXCB08	3A2J01	KEY LINE
J01	40	XA33J02	1	W	BLU	26	TW PR	3EXNCB08	3A2J01	KEY LINE BAR
J01	41	XA37J01	27	W	WHT	26	TW PR	3EXCB09	3A2J01	TX ADRS SW
J01	42	XA37J01	28	W	BLU	26	TW PR	3EXNCB09	3A2J01	TX ADRS SW BAR
J01	43	XA39J02	2	W	WHT	26	TW PR	3FXCB08	3A2J01	KEY LINE
J01	44	XA39J02	1	W	BLU	26	TW PR	3FXNCB08	3A2J01	KEY LINE BAR
J01	45	XA38J01	27	W	WHT	26	TW PR	3FXCB09	3A2J01	TX ADRS SW
J01	46	XA38J01	28	W	BLU	26	TW PR	3FXNCB09	3A2J01	TX ADRS SW BAR
J01	47	XA02J01	117	W	WHT	26	TW PR	3AXXD240	3A2J01	DWR SEL B Y
J01	48	XA02J01	57	W	BLU	26	TW PR	3AXND240	3A2J01	DWR SEL B Z
J02	LC	XA39J01	A4C	C	CTR		RG188	3B4XMA01	3A2J02	TEST PN TX4
J02	LS	XA39J01	A4S	C	SHD		RG188	3B4RMA01	3A2J02	TEST PN TX4 R
J02	MC	XA33J01	A4C	C	CTR		RG188	3B3XMA01	3A2J02	TEST PN TX3
J02	MS	XA33J01	A4S	C	SHD		RG188	3B3RMA01	3A2J02	TEST PN TX3 R
J02	NC	XA28J01	A4C	C	CTR		RG188	3B2XMA01	3A2J02	TEST PN TX2
J02	NS	XA28J01	A4S	C	SHD		RG188	3B2RMA01	3A2J02	TEST PN TX2 R
J02	PC	XA22J01	A4C	C	CTR		RG188	3B1XMA01	3A2J02	TEST PN TX1
J02	PS	XA22J01	A4S	C	SHD		RG188	3B1RMA01	3A2J02	TEST PN TX1 R
J02	RC	PD2	INC	C	CTR		RG188	3BTXIF01	3A2J02	TXCH1 COMM1
J02	RS	PD2	INS	C	SHD		RG188	3BTRIF01	3A2J02	TXCH1 COMM1RTN