RADIO TRANSMITTER ALARM MATRIX

The radio transmitter alarm matrix, Table D, can be used to quickly determine the most probable cause of a transmitter alarm and the corrective action necessary to clear the alarm. The block diagram of the radio transmitter, Fig. 2, supplements the alarm matrix by identifying the major radio transmitter units and the nominal power levels.

The transmitter requirements are provided in Table E. These requirements should be met after replacing a defective unit and/or when performing a test identified in the alarm matrix or the replacement matrix.

TABLE D

RADIO TRANSMITTER ALARM MATRIX (NOTES 1 THROUGH 6)

REMOTE SCAN POINT – ALARM(A) OR STATUS(S)	ALARM UNIT STATUS		UNIT STATUS			POSSIBLE CONDITION(S) CAUSING ALARM	SUGGESTED CORRECTIVE ACTION
	INDICATOR	ALARM CONDITION	UNIT	INDICATOR	ALARM CONDITION		
RADIO TRMTG FAIL (A)	None	None	TRMTR PWR	TRMTR ON	Off	(1) Faulty power unit (2) Abnormal current demand caused by associated transmitter unit.	(1) Replace power unit (2) Replace transmitter unit causing abnormal current demand.
RADIO TRMTG FAIL (A)	None	None	POWER UNIT	ALM OFF	Lighted		
RADIO TRMTG FAIL (A)	TRMTR: GEN OVEN	Lighted	UP CONV & MWV GEN	None	None	Faulty microwave generator unit	(1) Replace UP CONV & MWV GEN unit
RADIO TRMTG FAIL (A)	TRMTR: RF PWR	Lighted	PWR AMPL	ALC OFF	Lighted	(1) ALC switch in the OFF position (2) Faulty POWER AMPLIFIER unit	(1) Operate ALC switch to the ON position (2) Replace POWER AMPLIFIER unit
RADIO TRMTG FAIL (A)	TRMTR: RF PWR	Lighted	PWR AMPL	PWR OUT OF RANGE	Lighted	(1) Low IF input to transmitter unit (2) Failed transmitter unit	(1) Check IF input (2) Check and if necessary replace UP CONV & MWV GEN unit (3) Check and if necessary replace POWER AMPLIFIER unit (4) Suspect waveguide components. Consult transmission engineer

Notes:

1. Knowledge of admonishments,. equipment, and procedures is required to use this matrix.
2. Indications are listed in order of priority.
3. DC voltages and cable connections should always be checked before attempting corrective action.
4. Detailed instructions to clear alarms are provided in "Radio Frame Trouble Isolation" tab in the Operations and Maintenance manual for the Terminal Station (421-300-103) or Regenerator Station (421-300-104).
5. Detailed instructions to replace units are provided in "Radio Transmitter Replacement Procedures" tab in Operation and Maintenance manual for the Terminal Station (421-300-103) or Regenerator Station (421-300-104).
6. Radio transmitter requirements for the tests referenced in this matrix are provided in Table E.

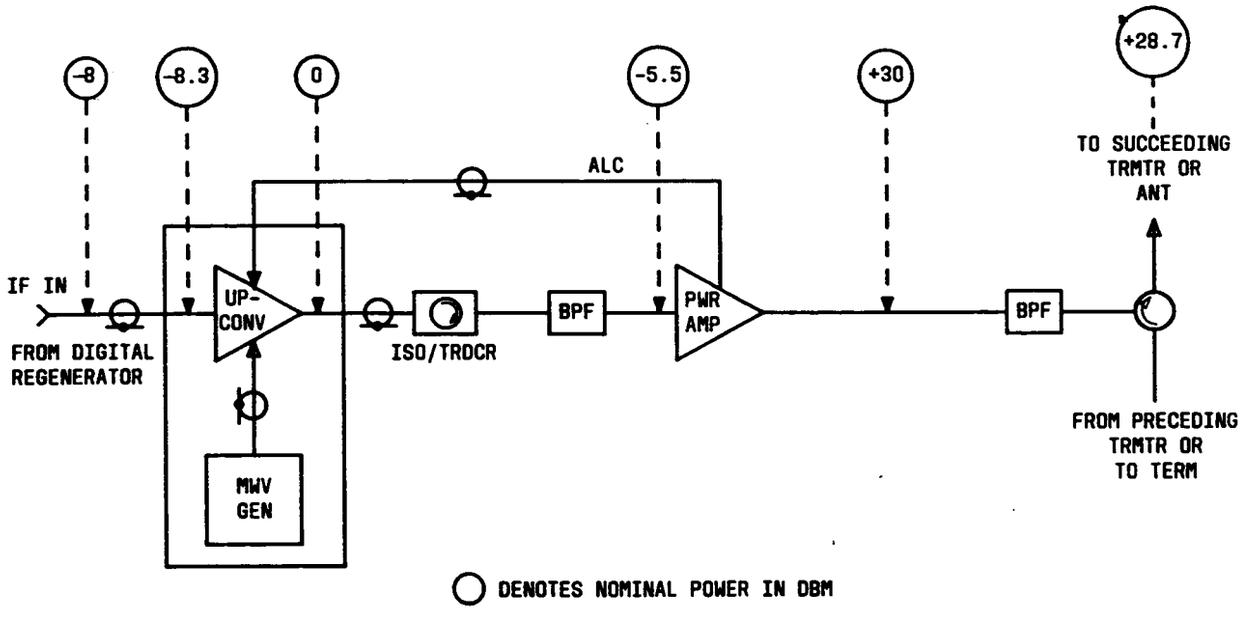

Fig. 2—DR 6-40-140 Radio Transmitter Block Diagram

TABLE E
RADIO TRANSMITTER REQUIREMENTS

UNIT	TEST POINT (NOTE 1)	NOMINAL VALUE	RECOMMENDED ADJUSTMENT OR OPTIMUM TOLERANCE	MAINTENANCE OPERATING WINDOW
ALARM AND METER (-24 V and -48 V)	DISPL	-8888	No Adjustment	N/A
	ALC V	Previous Recorded Value (Nominal = 0)	±.02	±0.14
	+5 V	+5 V	No Adjustment	±0.3 V
	+15 V	+15 V	No Adjustment	±0.4 V
	-15 V	-15 V	No Adjustment	±0.4 V
TRMTR PWR (-24 V and -48 V)	+5 V	+5 V	No Adjustment	±0.3 V
	-15 V	-15 V	No Adjustment	±0.4 V
	-24 V	-24 V	No Adjustment	-20 to -28.5 V
	-48 V	-48 V	No Adjustment	-42 to -60 V
POWER UNIT (-24 V and -48 V)	V1	-15 V	No Adjustment	±0.4 V
		+10 V	No Adjustment	±0.3 V
	V IN	-24 V	No Adjustment	-20 to -28.5 V
	V IN	-48 V	No Adjustment	-42 to -60 V
INTERFACE JACK AT TOP OF T/R PAIR	Cable removed from IF IN (PWR) Out of Service	-8.0 dBm	No Adjustment	-7.2 to -9.6 dBm

See ***Note*** at end of table.

TABLE E
RADIO TRANSMITTER REQUIREMENTS (Contd)

UNIT	TEST POINT (NOTE 1)	NOMINAL VALUE	RECOMMENDED ADJUSTMENT OR OPTIMUM TOLERANCE	MAINTENANCE OPERATING WINDOW
TRANSMITTER UP CONV & MWV GEN	Cable removed from IF IN (PWR) out of service	-8.3 dBm	———	-7.5 to -9.9 dBm
	RF OUT (Manual)	Previous Recorded Value	No Adjustment	±3 dB
	GEN MON (Power)	-3.0 dBm	No Adjustment	±3 dB
	GEN MON (Frequency)	Frequency of Generator	±3 kHz	±140 kHz
PWR AMPL	Power	35.5 dBm Gain of Amplifier	No Adjustment	±2.5 dB
	ALC V	Previous Recorded Value (Nominal= Ø V)	±0.02 dB	±0.14 V
SHUTTER MONITOR (6 GHz) or ALC NET (11 GHz)	Monitor port (RF power)	+30 dBm (6 GHz) +36.5 (11 GHz)	±0.1 dB	±0.3 dB
	Monitor port (Amplitude Response)	Flat over 40 MHz	No Adjustment	±0.6 dB
327A RF PWR AMP	Monitor Port (RF Power and Amplitude Response	+3 dBm (Flat over 40 MHz)	±2 dB (No adjustment)	±0.3 dB of recorded value on Radio Data Card

Note: 1. In-service measurements unless otherwise specified.