Parts List and Tune-up Procedure/Active Devices:

The following is the procedure for changing the channel of the MXD5U translator. Since the amplifier is broadband, channel change involves retuning of the output filter and recalibration of the output meter.

The amplifier meter was calibrated to read 100% (top scale) at full power and at the channel specified when the transmitter was tested at the factory. If the amplifier is to operate at a channel other than that of the factory test channel, the metering will require re-calibration. The power meter setting is a channel dependent calibration.

1. Connect the transmitter output to a 50 ohm dummy load or the antenna. The transmitter uses a 50Ω type N connector for its output. Calibrated directional coupler and suitable digital wattmeter should be used for measurements.
2. Connect the AC mains input. This AC circuit should be rated for 15 amperes, and should be supplied through a slow-tripping breaker or time delay fuse. Generally, a breaker that is rated for across-the-line motor starting will be found to be satisfactory. Connect the power supply to the amplifier.
3. At this point the transmitter should be OFF. Depress the ON' switch. The green LEDs should illuminate and the amplifier should be operating. The cooling fans on both the power supply and the amplifier should be running.
4. Attach the RF output power measuring device.
5. Turn down the drive level from the Transcoder (front end) before applying any RF input signal.
6. Slowly turn up the drive level until the output power reaches the desired level (on the power measuring device – not the transmitter power meter indication).
7. When the output power is at the desired level check that the voltage at TP3 (control PC board) is between 4.5V and 9.0VDC.
8. Adjust R48 until the voltage at TP3 is 4.0VDC. At this point the transmitter forward power meter should read 100%.
9. To calibrate the reflected power, install the jumper E17 (prevents VSWR trips).
10. Remove the cable from J12 at the control board and reconnect through a 10dB attenuator to J13.
11. The voltage measured at TP4 should be beterrn 4.5V and 9.0VDC.
12. Adjust potentiometer R80 until the voltage at TP5 is 4.0VDC. At this point the reflected power should read 10%.
13. Reconnect the cables as they were, and remove jumper at E17.

The output filter must be retuned as per the frequency response sweeps attached (note: two different tunings depending on the type of filter used):

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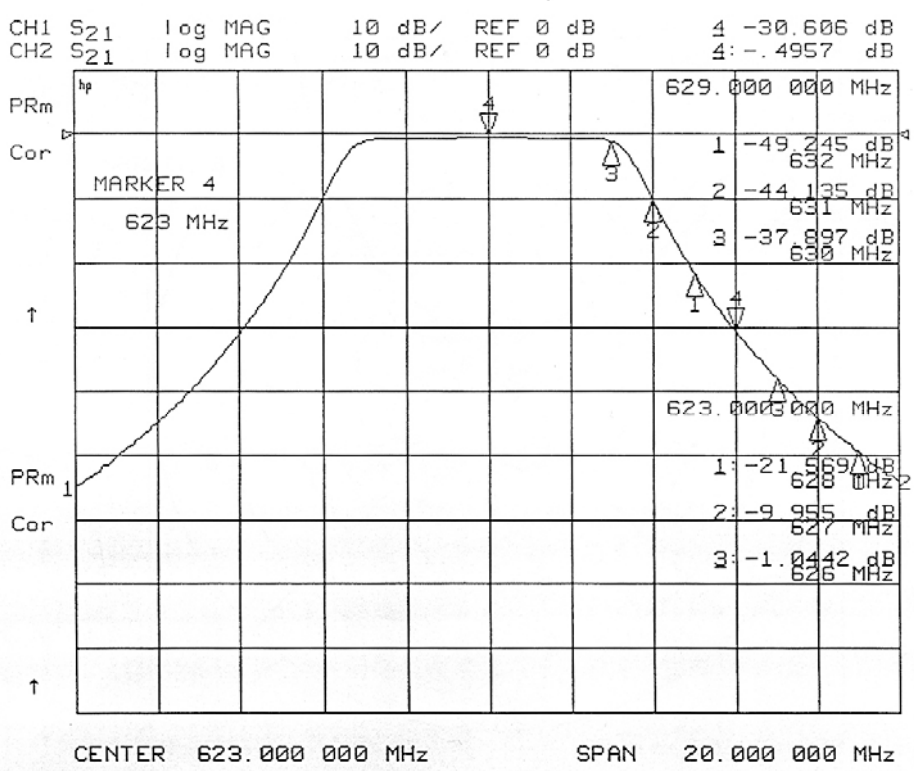
Parts List and Tune-up Procedure

Mask Filter:
Bandpass Response



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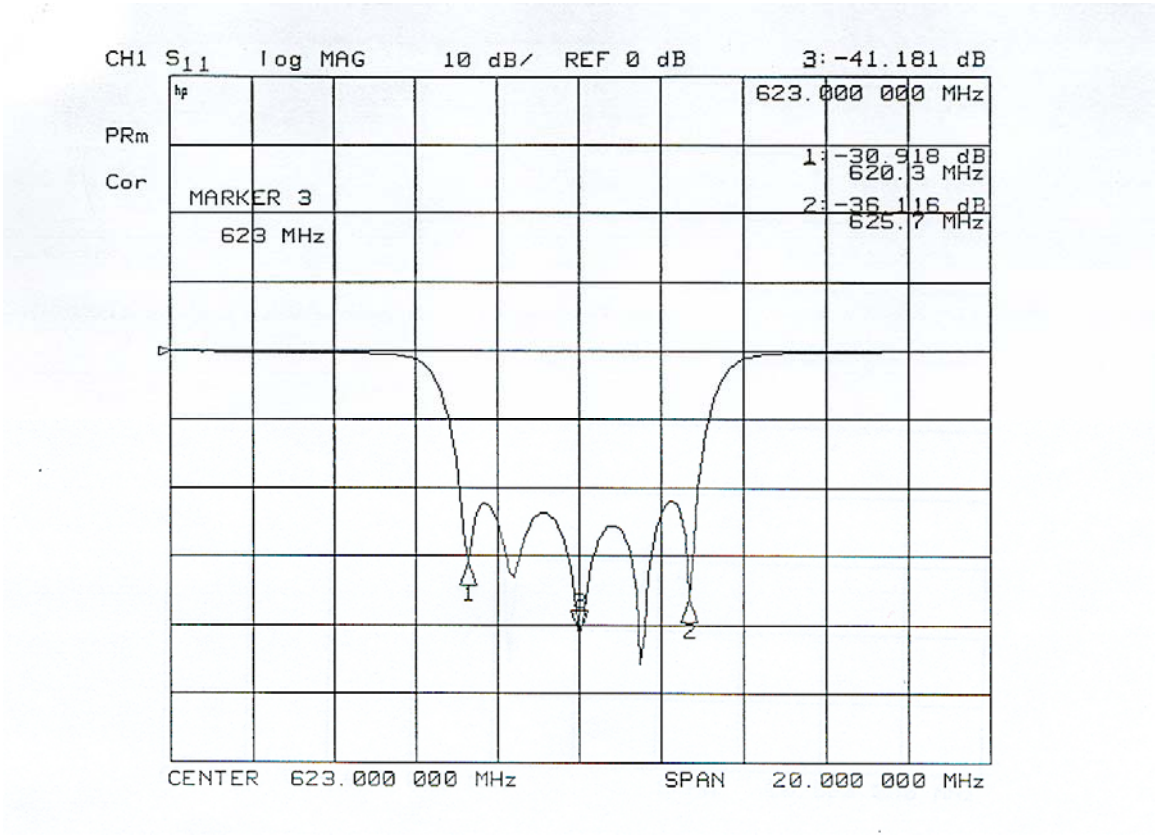
Parts List and Tune-up Procedure

Mask Filter:
Return loss



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Active Devices List:

ID	Component	Description	Qty	UM	Total
	41D2225A1	**ASSY MX5U**	**0**	**EA**	**0**
	21B1473G3	**FR END ASSY GAIN=13dB VDC=28**	**1**	**EA**	**1**
Q1	MMBT2222ALT1	TRANSISTOR, MOTOROLA "1P"	1	EA	1
U1	MHW9182	IC HYBRID AMP MOTOROLA	1	EA	1
U3	MC78M12CDT	IC SEE 78M12CDT	1	EA	1
U4	MC78L05ACD	IC REGULATOR 100mA SOIC-8	1	EA	1
	21B1951G1	**IPA ASSY**	**1**	**EA**	**1**
U1	MC1723CD	VOLTAGE	1	EA	1
Q3	MMBT2907ALT1	TRANSISTOR PNP MOTOROLA 2FE	1	EA	1
CR100	MMBD7000LT1	DIODE DUAL GENERAL PURPOSE	1	EA	1
CR110	MMBD7000LT1	DIODE DUAL GENERAL PURPOSE	1	EA	1
CR1	MURS120-T3	DIODE 1A 200V MARK U1D ONSEMI	1	EA	1
Q1	MRF282SR1	RF POWER LDMOS FET	1	EA	1
Q2	MRF282SR1	RF POWER LDMOS FET	1	EA	1
	21B1751G2	**SINGLE PALLET AMP. MRF374A R-7**	**1**	**EA**	**1**
Q1	MRF374A	TRANSISTOR	1	EA	1
U1	MC78M09CDT	IC VOLTAGE REG.	1	EA	1
	31C1971G1	**PCB CTRL'R MX5U**	**1**	**EA**	**1**
CR1	1SMB9.0AT3	Zener Diode 9V sm	1	EA	1
CR2	HSMS-2820	DIODE SCHOTTKY HP MARM CO	1	EA	1
CR3	MURS120-T3	DIODE 1A 200V MARK U1D ONSEMI	1	EA	1
CR4	1SMB5.0AT3	DIODE	1	EA	1
CR5	1SMB5.0AT3	DIODE	1	EA	1
CR6	HSMS-2820	DIODE SCHOTTKY HP MARM CO	1	EA	1
CR7	1SMB5.0AT3	DIODE	1	EA	1
CR8	1SMB5.0AT3	DIODE	1	EA	1
CR9	1SMB5.0AT3	DIODE	1	EA	1
CR10	MBRS130LT3	Schottky Pwr Rectifier	1	EA	1
CR11	MBRS130LT3	Schottky Pwr Rectifier	1	EA	1
CR12	MBRS130LT3	Schottky Pwr Rectifier	1	EA	1
CR13	MURS120-T3	DIODE 1A 200V MARK U1D ONSEMI	1	EA	1
CR14	MURS120-T3	DIODE 1A 200V MARK U1D ONSEMI	1	EA	1
CR15	MURS120-T3	DIODE 1A 200V MARK U1D ONSEMI	1	EA	1
CR16	MURS120-T3	DIODE 1A 200V MARK U1D ONSEMI	1	EA	1
CR17	MURS120-T3	DIODE 1A 200V MARK U1D ONSEMI	1	EA	1
CR18	MURS120-T3	DIODE 1A 200V MARK U1D ONSEMI	1	EA	1
CR19	HSMS-2820	DIODE SCHOTTKY HP MARM CO	1	EA	1
U1	MC68HC908GT16CFB	IC Microcontroller	1	EA	1
U2	MAX3110EEWI	UART, -40°C to +85°C 28 Wide	1	EA	1
U3	MOCD207	IC DUAL OPTO NAND S.M.	1	EA	1
U4	LM324D	IC QUAD OP AMP SOIC 14	1	EA	1
U5	LM311M	IC Comparator	1	EA	1
U6	MMPQ2222A	TRANSISTOR NPN S.M.	1	EA	1
U7	MAX5082ATE+	CONVERTER STEP-DOWN DC-DC 4.5-40V 1.5A	1	EA	1

ID	Component	Description	Qty	UM	Total
U8	MOCD207	IC DUAL OPTO NAND S.M.	1	EA	1
U9	HXS 20-NP	Current Transducer	1	EA	1
U10	MMPQ2222A	TRANSISTOR NPN S.M.	1	EA	1
U11	MAX5097AAUP+	Buck Converter	1	EA	1
U13	LM324D	IC QUAD OP AMP SOIC 14	1	EA	1
U14	LM324D	IC QUAD OP AMP SOIC 14	1	EA	1
U15	LM324D	IC QUAD OP AMP SOIC 14	1	EA	1
U16	MMPQ2222A	TRANSISTOR NPN S.M.	1	EA	1
U17	LM324D	IC QUAD OP AMP SOIC 14	1	EA	1
U18	74HC00AD	IC QUAD 2 INPUT NAND S.M.	1	EA	1
U19	LM324D	IC QUAD OP AMP SOIC 14	1	EA	1
U20	XP1001001-03R	ETHERNET	1	EA	1
VR1	78L05ACD	Voltage Regulator Motorola	1	EA	1
VR2	MC34064P5	MONITOR I.C.	1	EA	1
VR3	MC7805BDT	Voltage Regulator 5V 1A ONSemi	1	EA	1
	11A2195G4	**UHF DIR CPLR DETR ASSY FLNG**	**1**	**EA**	**1**
CR1	HSMS-2820	DIODE SCHOTTKY HP MARM CO	1	EA	1
CR2	HSMS-2820	DIODE SCHOTTKY HP MARM CO	1	EA	1