

BZ5MXI401UX
Application for Certification
Heterodyne Processor Input
500 Watt UHF Translator

Parts List and Tune-up Procedure/Active Devices:

The following is the procedure for changing the channel of the MXi401U 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.

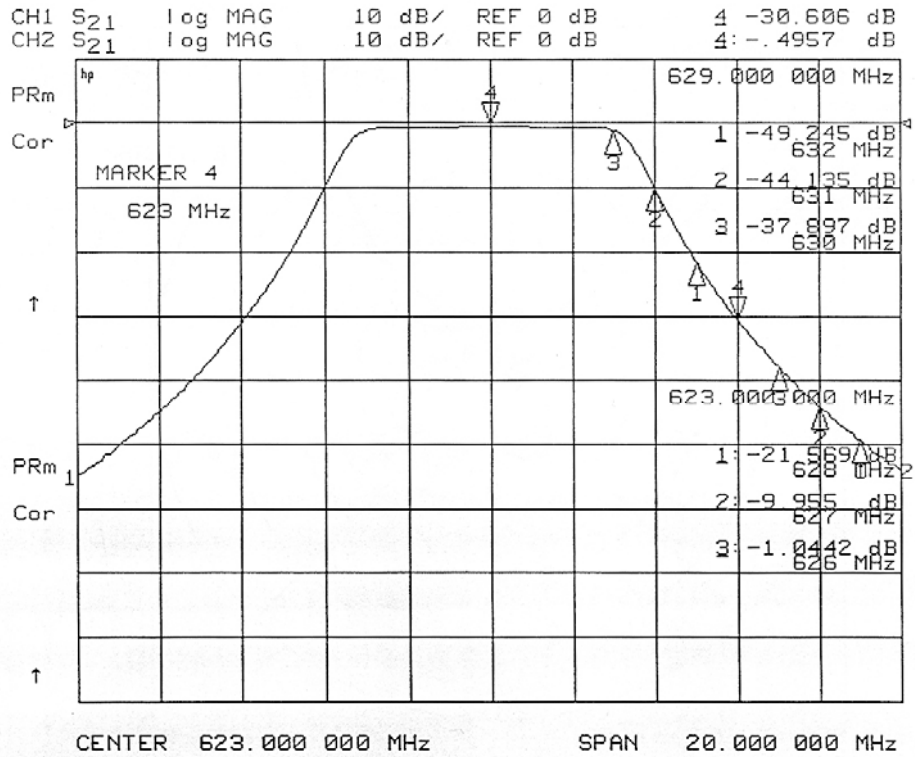
1. Connect the transmitter output to a 50 ohm dummy load or the antenna. The transmitter uses a 50Ω type N connector for its output. Calibrated directional coupler and suitable digital wattmeter should be used for measurements.
2. Connect the 208VAC mains input. This AC circuit should be rated for 15 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 LCD screen should be illuminated, and 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 between 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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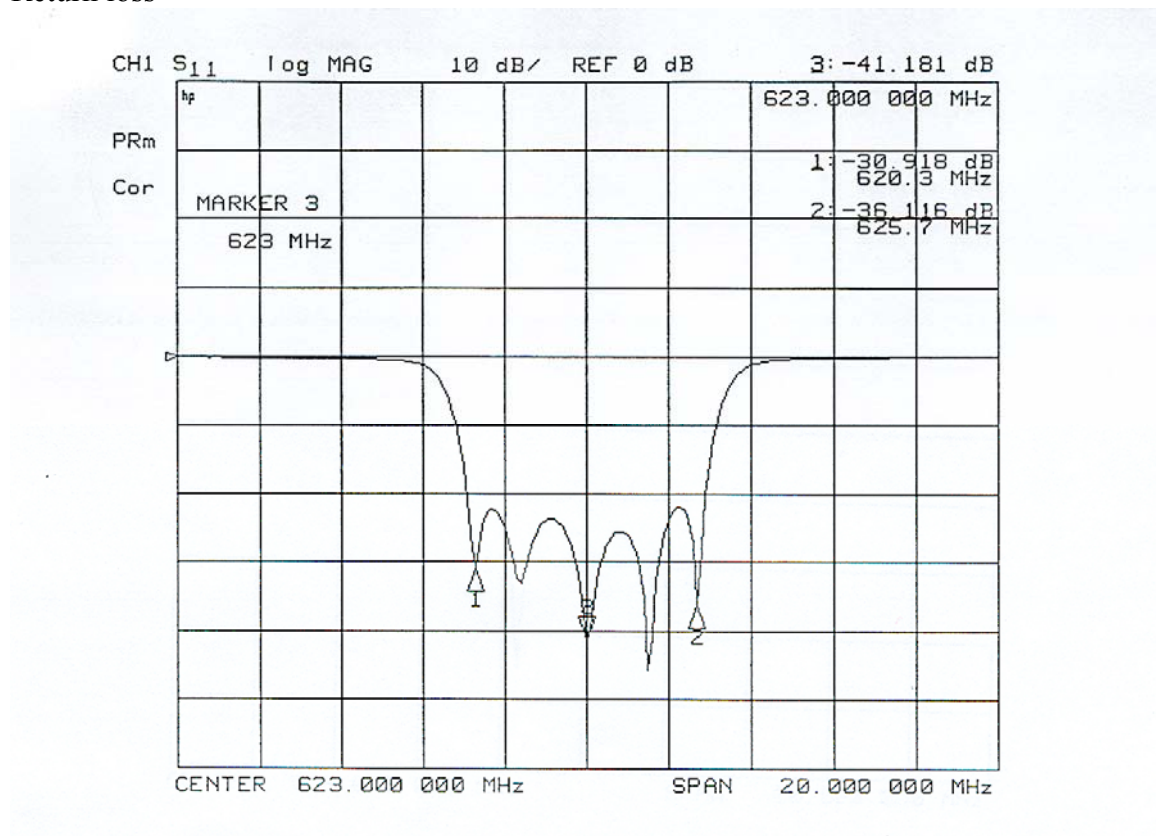
Filter:
 Bandpass Response



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Filter:
Return loss



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Active Devices List:

ID	Component	Description	Qty	UM
	41D2109G1	MXi 401U ASSEMBLY INFINEON	1	EA
	31C1897G1	MXI CONTROLLER	1	EA
CR1	1SMB9.0AT3	Zener Diode 9V sm	1	EA
CR2	1SMB5.0AT3	DIODE	1	EA
CR3	MURS120-T3	DIODE 1A 200V MARK U1D ONSEMI	1	EA
CR4	HSMS-2800	DIODE SCHOTTKY HSMS-2800L30	1	EA
CR5	HSMS-2820	DIODE SCHOTTKY HP MARM CO	1	EA
CR6	1SMB5.0AT3	DIODE	1	EA
CR7	MMSZ4678T1	DIODE ZENER 1.8V SM MKG-CC	0	EA
CR8	HSMS-2800	DIODE SCHOTTKY HSMS-2800L30	1	EA
CR9	HSMS-2820	DIODE SCHOTTKY HP MARM CO	1	EA
CR10	1SMB5.0AT3	DIODE	1	EA
CR11	MMSZ4678T1	DIODE ZENER 1.8V SM MKG-CC	0	EA
CR12	MURS120-T3	DIODE 1A 200V MARK U1D ONSEMI	1	EA
CR13	MURS120-T3	DIODE 1A 200V MARK U1D ONSEMI	1	EA
CR14	MURS120-T3	DIODE 1A 200V MARK U1D ONSEMI	1	EA
CR15	MURS120-T3	DIODE 1A 200V MARK U1D ONSEMI	1	EA
CR16	MURS120-T3	DIODE 1A 200V MARK U1D ONSEMI	1	EA
CR17	MURS120-T3	DIODE 1A 200V MARK U1D ONSEMI	1	EA
CR18	HSMS-2800	DIODE SCHOTTKY HSMS-2800L30	1	EA
Q1	BC847BT/R	TRANSISTOR, NPN	1	EA
Q2	BC859CT/R	TRANSISTOR, PNP	1	EA
Q3	BC847BT/R	TRANSISTOR, NPN	1	EA
Q4	BC859CT/R	TRANSISTOR, PNP	1	EA
Q5	BC847BT/R	TRANSISTOR, NPN	1	EA
Q6	BC859CT/R	TRANSISTOR, PNP	1	EA
Q7	BC847BT/R	TRANSISTOR, NPN	1	EA
Q8	2N4351	TRANSISTOR FET N-CH SW	1	EA
Q9	BC847BT/R	TRANSISTOR, NPN	1	EA
U1	MC68HC908GT8CFB	IC Microcontroller	0	EA
U1	MC68HC908GT16CFB	IC Microcontroller	1	EA
U2	MAX3110EEWI	UART, -40°C to +85°C 28 Wide	1	EA
U3	MOCD207	IC DUAL OPTO NAND S.M.	1	EA
U4	MOCD207	IC DUAL OPTO NAND S.M.	1	EA
U5	LM358D	IC DUAL OP AMP SOIC 8 MOT	1	EA
U6	MMPQ2222A	TRANSISTOR NPN S.M.	1	EA
U7	LM324D	IC QUAD OP AMP SOIC 14	1	EA
U8	MOCD207	IC DUAL OPTO NAND S.M.	1	EA
U9	HXS 20-NP	Current Transducer	1	EA
U10	MMPQ2222A	TRANSISTOR NPN S.M.	1	EA
U11	LM339D	IC COMPARATOR	1	EA
U12	MOCD207	IC DUAL OPTO NAND S.M.	1	EA
U13	LM324D	IC QUAD OP AMP SOIC 14	1	EA
U14	LM324D	IC QUAD OP AMP SOIC 14	1	EA
U15	LM324D	IC QUAD OP AMP SOIC 14	1	EA

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ID	Component	Description	Qty	UM
U16	DS1867S-10	IC POT W/EEPROM DUAL 10K 16-SO	1	EA
U17	LM324D	IC QUAD OP AMP SOIC 14	1	EA
U18	74HC00AD	IC QUAD 2 INPUT NAND S.M.	1	EA
U19	LM324D	IC QUAD OP AMP SOIC 14	1	EA
U20	LM358D	IC DUAL OP AMP SOIC 8 MOT	1	EA
VR1	78L05ACD	Voltage Regulator Motorola	1	EA
VR2	MC34064P5	MONITOR I.C.	1	EA
VR3	MC7805BDT	Voltage Regulator 5V 1A ONSemi	1	EA
	21B1473G5	FRONT END (FOR DTV DRIVER)	1	EA
Q1	MMBT2222ALT1	TRANSISTOR, MOTOROLA "1P"	1	EA
U1	MHW9182	IC HYBRID AMP MOTOROLA	1	EA
U2	LM358D	IC DUAL OP AMP SOIC 8 MOT	1	EA
U3	MC78M12CDT	IC SEE 78M12CDT	1	EA
U4	MC78L05ACD	IC REGULATOR 100mA SOIC-8	1	EA
CR1	BB811	DIODE VARACTOR	1	EA
CR2	BB811	DIODE VARACTOR	1	EA
CR3	HSMS-2850	DIODE HEWLETT PACKARD	1	EA
	21B1951G1	IPA ASSY	1	EA
U1	MC1723CD	VOLTAGE LM723CD	1	EA
Q3	MMBT2907ALT1	TRANSISTOR PNP MOTOROLA 2FE	1	EA
CR100	MMBD7000LT1	DIODE DUAL GENERAL PURPOSE	1	EA
CR110	MMBD7000LT1	DIODE DUAL GENERAL PURPOSE	1	EA
CR1	MURS120-T3	DIODE 1A 200V MARK U1D ONSEMI	1	EA
Q1	MRF282SR1	RF POWER LDMOS FET	1	EA
Q2	MRF282SR1	RF POWER LDMOS FET	1	EA
	21B1639G1	PALLET AMP. ASSY R-16	1	EA
Q1	MRF374A	TRANSISTOR	1	EA
Q2	MRF374A	TRANSISTOR	1	EA
U1	MC78M09CDT	IC VOLTAGE REG.	1	EA
	11A2142G1	PALLET AMPLIFIER ASSY	4	EA
Q1	PTFA043002E	TRANSISTOR LDMOS FET Infineon	1	EA
Q2	MMBT2369ALT1	TRANSISTOR NPN SWITCHING	1	EA
Q3	MMBT2907ALT1	TRANSISTOR PNP MOTOROLA 2FE	1	EA
Q4	MMBT2369ALT1	TRANSISTOR NPN SWITCHING	1	EA
Q5	BCP56	TRANSISTOR NPN 1AMP MKG"BH-10" Infineon	1	EA
U1	MC78L05ACD	IC REGULATOR 100mA SOIC-8	1	EA
	11A2226G1	MXi401 CURRENT SENSOR BOARD	1	EA
CR1	MBRS130LT3	Schottky Pwr Rectifier	1	EA
CR2	1SMB5.0AT3	DIODE	1	EA
U1	MAX764CSA	LOW IQ DC-DC INVERTER	1	EA
U2	LA-100-P	CURRENT TRANSDUCER	1	EA
U3	LM324D	IC QUAD OP AMP SOIC 14	1	EA