

REMOTE BOARD

Part	Used	PartType	Footprint	Designators
1	2	1.5pF	805	C50, C111
2	2	2.2pF	805	C18, C68
3	4	10pF	805	C29, C56, C57, C69
4	2	12pF	805	C5, C108
5	1	18pF	805	C7
6	3	47pF	805	C27, C52, C100
7	5	100pF	805	C36, C61, C75, C76, C85
8	9	180pF	805	C77, C10, C11, C16, C23, C46, C47, C54, C112
9	3	470pF	805	C95, C110, C114
11	1	820pF Film or NPO	805	C113
12	15	.001uF	805	C1, C40, C8, C9, C84, C48, C78, C21, C22, C34, C42, C43, C31, C53, C59
13	9	.01uF	805	C74, C15, C39, C28, C107, C109, C60, C83, C102
14	30	.1uF	805	C44, C45, C2, C3, C4, C38, C51, C25, C26, C19, C33, C12, C14, C87, C87A, C88, C89, C98, C101, C62, C63, C64, C65, C66, C67, C70, C71, C104, C41, C115
15	4	.0033uF	805	C73, C93, C106, C116
16	2	.05uF (.047)	805	C96, C96A
17	1	.22uF	805	C86
18	1	1uF	1206	C92
19	3	2.2uF	1206	C72, C80, C91
20	4	4.7uF	1206	C24, C32, C90, C99A
21	7	10uF	1206	C35, C55, C79, C82, C99, C105, C117
22	3	22uF	1210	C13, C13A, C97
23	2	47uF	1812	C17, C49
24	1	1000uF	RAD 0.14	C94
25	3	3-10pF	1812	C6, C30, C58
26	1	See Table	805	C103
27	2	10	805	R99, R99A
28	4	100	805	R33, R42, R45, R77
29	1	270	805	R80
30	2	820	805	R39, R75
31	1	1K	805	R100
32	1	1.5K	805	R106
33	8	2.2K	805	R1, R13, R17, R18, R31, R36A, R60, R72
34	6	5.1K	805	R24, R37, R55, R70, R91, R102
35	2	6.2K	805	R38, R73
36	12	10K	805	R20, R23, R29, R35, R36, R53A, R59, R71, R74, R85, R87, R88
37	6	10K	THMWHEEL	R105
38	1	15K	805	R32
39	1	18.7K	805	R30
40	1	20K	805	R22

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41	6	27K	805	R11, R14, R25, R83, R94, R104
42	4	28.7K	805	R96, R101, R109, R95
43	6	33K	805	R27, R9, R10, R68, R69, R103
44	6	47K	805	R34, R44, R84, R92, R93, R97
45	3	50K	POTSM3	R12, R98, R98A
46	4	82K	805	R46, R50, R89, R90
47	8	100K	805	R19, R26, R28, R51, R52, R78, R79, R82
48	2	115K	805	R108, R49
49	4	330K	805	R21, R86, R107, R111
50	9	390K	805	R5, R6, R7, R8, R64, R65, R66, R67, R40
51	2	470K	805	R81, R110
52	1	820K	805	R47
53	2	1M	805	R48, R57
54	1	10M	805	R53
55	3	.039uH	1210	L2, L4, L8
56	2	.063uH	TOKO_MC152	L3, L6
57	2	1.0uH	1210	L1, L5
58	1	180uH	1210	L9
59	1	3.579545MHz	XTALSM	X2
60	1	4.1943MHz	XTALSM	X3
61	1	6.4MHz	XTALSM	XTAL1
62	1	See Table	RAD 0.1	Y1
63	5	FILTER	ELK-AH	FL1, FL2, FL4, FL5, FL6
64	1	HELICRES	TOKO_CBW	L7
65	2	2PIN	MTA2	JP3, PL
66	1	3PIN	MTA3	JP4
67	1	CON6	MTA6	HP
68	1	SOCKET		J2
69	4	SW DIP-8	SW_SO16SM	S1, S2, S3, S4
70	1	2N3906	SOT-23	Q8
71	1	4001	SO-14	U18
72	2	45152	SOL-28	U2, U9
73	1	AD1582A	SOT-23	U7
74	3	BF998	SOT-143	Q4, Q7, Q10
75	1	BSS138	SOT-23	Q9
76	2	LM386	SO-8	U7A, U7B
77	2	MA4ST401CKK-287	SOT-23	Q1, Q5
78	2	MB504LPFER	SOW-8	U1, U8
79	1	MIC5207	SOT23-5	U11
80	3	MMBD6050LT1	SOT-23	D1, D2, D3
81	2	MMBTH81LT1	SOT-23	Q2, Q6
82	2	MX631	SOL-16	U13, U14

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83	1	NDS352	SOT-23	Q3
84	1	NE575	SOL-20	U16
85	1	OP279	SO-8	U19
86	4	OP291	SO-8	U3, U5, U6, U10
87	1	SA626	SOL-20	U12
88	1	TC4S11F	SOT23-5	U21
89	1	TC4SU69F	SOT23-5	U4
90	1	TC4W53F	FM8	U15
91	1	XR2211	SO-14	U17
Table				
Ch		Y1 Freq (kHz)	C103 (uF)	
1		28	0.12	
2		30	0.12	
3		32.768	0.12	
4		36	0.1	
5		38 or 40	0.1	
6		46.608	0.082	

COMMCHOICE

Remote p. 1

PRODUCTION TEST PROCEDURE

REMOTE

Resistances: +6V to GND = 200 to 250 ohms _____
+5V to GND = 2000 to 3000 ohms _____
+2.5V to GND = 3000 + ohms _____

Power: total current drain with "+6V" = 6.3V _____ mA
" +5V" _____ VDC
" +2.5V" _____ VDC

TRANSMITTER:

RF

1. Connect the transmitter output to a frequency counter, apply power and adjust C7 (which sets the frequency of the 6.4 Mhz PLL reference oscillator) for the precise transmitted frequency (see the pre-assigned label on the unit). The transmitted frequency must be within +/- .001%. _____
2. Vary the slug in L3 to set the control voltage (TP14) to: 1.8 to 3.2 VDC. _____
3. Measure the switched 6 volts (SW+6V) @ Q3 drain to verify it is within .1V of "+6V". _____
4. Connect the transmitter output to a spectrum analyzer and/or a power meter and peak the output by varying C30. The output should be +14 to +16 dBm (output power switch open or to High). Check that there are no harmonics or spurious emissions greater than -44dBc. _____
5. Turn the power on and off 3 to 4 times and verify that the PLL locks up within 3 seconds. The RF output must be stable upon lock up. _____
6. Set the power switch to "Low" (short the two pins of the PL connector) and verify the RF output drops approx. 3 dBm _____

SQUELCH TONE

1. Verify that the squelch tone is the correct frequency (see schematic for frequencies) - measure at the junction of R83 and L9. _____
2. Adjust R12 for a squelch tone amplitude of -20dBc as indicated on the spectrum analyzer _____

LO BATTERY

1. Gradually reduce the supply voltage until a pulse output appears at U5B pin 7. Measure the supply voltage, which should be 5.85 to 5.93 volts. Set the headphone volume to approx. 1/4 up and verify the pulses appear at U7A, pin 5. Use a 'scope or headphones. _____

AUDIO/DEVIATION

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1. Verify there is approx. 5 VDC at the microphone input (pin 6 of the headset connector). _____
2. Apply .75v peak to peak, 400 Hz to the mic. in (above) and set the transmitter output FM deviation to +/- 25 KHz (spect. an. or deviation meter). Ensure that the rear panel Mic. level control is max. (fully clockwise). Slowly increase the frequency from 400 Hz to 20KHz (or use a sweep generator) and verify that the deviation does not exceed + and - 95 KHz at a level above -44dBc. _____
3. Repeat 2 above while also increasing the input voltage from .75v to 1.5v peak to peak. The same limits apply. _____

RECEIVER:

RF

1. Using a high impedance, low capacitance probe and frequency counter, verify that the local oscillator frequency (listed on a production control document) is correct at the emitter of Q2 (TP10). _____
2. Vary L6 to produce a control voltage of 1.8 to 3.2 VDC at TP8 _____
3. Apply the correct receive signal (-40dBm at a freq. from prod. control with 40kHz modulation at a level of -20dBc) and adjust C58 and L7 for the best (least noisy) 40kHz tone at U17, pin2. Monitor the RSSI voltage (TP6) while tuning to ensure that the RSSI is also within 95% of its peak. _____
4. With the above setup, reduce the RF level until the receiver squelches, that is, the voltage at JS1-4 goes high. The RF level from the generator should be less than -93dBm (receiver sensitivity). _____

AUDIO

1. Set the RF source to the correct frequency and a level of -60dBm and connect to the receiver input. Apply the correct fixed and momentary control tones (see the remote receiver schematic) to the generator's FM modulation input. Adjust the tone amplitude for an RF level of -20dBc. When the tones are applied, the receiver should switch to the AUX (subcarrier) mode - TP9 will go high and stay. Remove the fixed tone and verify that TP9 goes low.
2. Apply a high quality music signal to the RF source and verify (with headphones) the quality and loudness of the receiver's audio in both the COM and AUX modes (apply the tones, as in 1 for AUX).

End of Remote tests.