

IF IT IS FOUND DESIRABLE TO CHANGE ANY TOLERANCE OR OTHER DETAIL SPECIFIED ON THIS DRAWING NOTIFY THE PURCHASER PROMPTLY.

MAXIMUM ALLOWABLE TOLERANCES HAVE BEEN DETERMINED AND DEVIATIONS WILL BE CAUSE FOR REJECTION. REMOVE ALL BURRS AND SHARP EDGES.

FFRD-5A TUNING DRAWER  
TUNING CONTROL AT 2 MCS

TUBE	TYPE	FUNCTION	SOCKET PIN NUMBERS								
			1	2	3		4		5	6	7
					DC	AC	DC	AC			
V500	6AG5	1 <sup>ST</sup> RF	-0.2	+0.83	+6.3	6.0*	+6.3	6.0*	+150	+60	+0.83
V501	6AG5	2 <sup>ND</sup> RF	-0.2	+0.76	+6.3	6.0*	+6.3	6.0*	+150	+60	+0.76
V502	6AU6	MIXER	0	—	+6.3	6.0*	+6.3	6.0*	+112	+112	+2.0
V503	6AG5	HFO. REACT. MOD.	0	+4.6	+6.3	6.0*	+6.3	6.0*	+145	+145	+4.6
V504	6AG5	HFO OSC.	-2.5	+0.5	+6.3	6.0*	+6.3	6.0*	+53	+90	+0.5

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FFRD-6A TUNING DRAWER  
TUNING CONTROL AT 4 MCS

TUBE	TYPE	FUNCTION	SOCKET PIN NUMBERS								
			1	2	3		4		5	6	7
					DC	AC	DC	AC			
V600	6AG5	1 <sup>ST</sup> RF	-0.2	+0.70	+6.3	6.0*	+6.3	6.0*	+160	+60	+0.70
V601	6AG5	2 <sup>ND</sup> RF	-0.2	+0.80	+6.3	6.0*	+6.3	6.0*	+150	+60	+0.80
V602	6AU6	MIXER	0	—	+6.3	6.0*	+6.3	6.0*	+108	+108	+2.0
V603	6AG5	HFO REACT. MOD.	0	+3.8	+6.3	6.0*	+6.3	6.0*	+145	+135	+3.8
V604	6AG5	HFO OSC.	-1.8	+0.5	+6.3	6.0*	+6.3	6.0*	+47	+92	+0.5

GH-138-2

FFRD-7A & FFRD-7B TUNING DRAWER  
TUNING CONTROL AT 8 MCS.

TUBE	TYPE	FUNCTION	SOCKET PIN NUMBERS								
			1	2	3		4		5	6	7
					DC	AC	DC	AC			
V700	6AG5	1 <sup>ST</sup> RF	-0.2	+0.7	+6.3	6.0*	+6.3	6.0*	+150	+60	+0.7
V701	6AG5	2 <sup>ND</sup> RF	-0.2	+0.7	+6.3	6.0*	+6.3	6.0*	+150	+64	+0.7
V702	6AU6	MIXER	0	+2.6	+6.3	6.0*	+6.3	6.0*	+115	+115	+2.6
V703	6AG5	HFO REACT. MOD.	0	+4.6	+6.3	6.0*	+6.3	6.0*	+145	+135	+4.6
V704	6AG5	HFO OSC.	-3.6	+0.5	+6.3	6.0*	+6.3	6.0*	+68	+90	+0.5

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FFRD-8A & FFRD-8B TUNING DRAWER  
TUNING CONTROL AT 16 MCS

TUBE	TYPE	FUNCTION	SOCKET PIN NUMBERS								
			1	2	3		4		5	6	7
					DC	AC	DC	AC			
V800	6AK5	1 <sup>ST</sup> RF	-0.1	+0.7	+6.3	6.0	+6.3	6.0	+150	+58	+0.7
V801	6AK5	2 <sup>ND</sup> RF	-0.1	+0.8	+6.3	6.0	+6.3	6.0	+150	+58	+0.8
V802	6AU6	MIXER	0	+2.5	+6.3	6.0	+6.3	6.0	+110	+110	+2.5
V803	6AG5	HFO REACT. MOD.	0	+3.3	+6.3	6.0	+6.3	6.0	+150	+130	+3.3
V804	6AK5	HFO OSC.	-0.75	+1.1	+6.3	6.0	+6.3	6.0	+150	+112	+1.1

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FFR-2 & FFR-3 RECEIVER

TUBE	TYPE	FUNCTION	SOCKET PIN NUMBERS													
			1	2		3		4		5		6	7	8		9
				DC	AC	DC	AC	DC	AC	DC	AC			DC	AC	
V100	6BA6	1 <sup>ST</sup> I.F. AMP.	-0.18	+1.30	—	+6.3	6.2*	+6.3	6.2*	+250	—	+70	+1.30	—	—	—
V101	6BA6	2 <sup>ND</sup> I.F. AMP.	-0.18	+1.25	—	+6.3	6.2*	+6.3	6.2*	+250	—	+65	+1.25	—	—	—
V102	6BA6	3 <sup>RD</sup> I.F. AMP.	0	+1.40	—	+6.3	6.2*	+6.3	6.2*	+250	—	+70	+1.40	—	—	—
V103	6AL5	2 <sup>ND</sup> DET. & AVC	0	-0.1	—	+6.3	6.2*	+6.3	6.2*	+3.6	—	0	-1.5	—	—	—
V104	6T8	NOISE LIMITER & 1 <sup>ST</sup> AUDIO	NC	-2.0	—	-1.3	—	+6.3	6.2*	+6.3	6.2*	NC	+1.5	0	—	+125
V105	6AQ5	AUDIO	0	+16.0	—	+6.3	6.2*	+6.3	6.2*	+250	—	+250	0	—	—	—
V106	6J6	BFO REACT. MOD.	+47	+49	—	+6.3	6.2*	+6.3	6.2*	0	—	0	+1.6	—	—	—
V107	6AG5	BFO OSC.	+3.0	+0.4	—	+6.3	6.2*	+6.3	6.2*	+150	—	+70	+0.4	—	—	—
V108	5Y3GT	RECT.	—	290	5.2*	—	—	—	380**	—	—	380**	—	290	5.2*	—
V109	OA2	VOLTAGE REG	+150	—	—	—	—	—	—	+150	—	—	—	—	—	—

GH-138-5

TUBE SOCKET VOLTAGES

ALL DC VOLTAGES MEASURED TO CHASSIS WITH AN ELECTRONIC VACUUM TUBE VOLTMETER (WITH TUNING DRAWER IN PLACE). AC VOLTAGES WERE TAKEN WITH SIMPSON MODEL 260 VOLTMETER. FILAMENT VOLTAGES MARKED WITH ASTERISK WERE MEASURED TO THE CORRESPONDING ASTERISK OF THE SAME TUBE SOCKET. HIGH VOLTAGE AC, MARKED WITH A DOUBLE ASTERISK, WAS MEASURED TO THE CHASSIS. LINE VOLTAGE ADJUSTED TO 110 VOLTS.

CH-138 B

CONTROLS

OPERATING POSITION DURING MEASUREMENT

HFO (SLAVE-MASTER) SW ..... HFO  
 AUDIO GAIN ..... FULLY CLOCKWISE  
 AVC MANUAL SW ..... AVC  
 NOISE LIMITER SW ..... ON  
 BFO SW ..... ON  
 BFO (SLAVE-MASTER) SW ..... BFO  
 RF GAIN ..... FULLY CLOCKWISE

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MAMARONECK, NEW YORK

B	1	FFR-3, FFRD-7B, 8B ADDED	10-23-58	481	LG		
A	1	changed voltages on V503, 603 (pins 2, 5, 6, 7), V703 (pins 5, 6), V100, 101, 102, 103, 104 (pin 5), V105 (pins 2, 5, 7)	10/28/58	1	J.M.D.		
ISSUE	ITEM	CHANGED FROM	DATE	CN. NO.	DRAFTS	CHECKER	ENG. APP.
TOLERANCES		SCALE:					
ALL OTHERS	DEC. DIM. ±	DRILL, PUNCH, COMMERCIAL STOCK SIZES AND MANUFACTURERS TOLERANCES ARE NOT INCLUDED.					
	FRAC. DIM. ±						
	ANGULAR DIM. ±						

FFR-3			10-23-58
FFR-2			1-6-55
MODEL	PROJECT NO.	ASS'Y. NO.	DATE
USED ON			

REQ. ITEM	PART NO.	DESCRIPTION	SYMBOL
THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK			
TUBE SOCKET VOLTAGES			
FFR-2, FFR-3, FFRD-5A, 6A, 7A, 7B, 8A, 8B			
DRAWN: J.M.D. 10/28/58			
ELEC. DES. APP.		MECH. DES. APP.	
CHECKED: J.M.D.		FINAL APPROVAL: J.M.D.	
FINISH & SPEC. NO.			CH-138 B