

## HF COMMUNICATIONS SYSTEM TYPE T/1255/2

## SUMMARY OF DATA

## PURPOSE

Shipborne HF communications with extended control via Communications Control Outfit KMP.

## MAJOR UNITS

NATO Number NSN 0625/	NATO Name	PHYSICAL DATA			
		Height mm	Width mm	Depth mm	Weight kg
5820-99-543-8779	Transmitter-Receiver	255	400	285	26
5820-99-547-0343	Control Unit	78	230	185	2.5
5820-99-547-0342	Radio Frequency Filter Unit	114	395	275	4.5
5820-99-543-8784	Power Control	105	280	230	5
5820-99-547-0341	Amplifier Radio Frequency	425	400	290	40
5820-99-543-8780	Automatic Antenna Tuning Unit (100W)	213	328	144	5.9
5820-99-543-8781	Automatic Antenna Tuning Unit (400W)	271	438	528	40
5820-99-543-8783	Interface Unit	90	260	200	2.5
5820-99-543-8782	Power Supply	195	395	290	34
	Receiver Cabinet comprising:	745	557	694	148
5820-99-743-9452	Cabinet Electrical Equipment	745	557	694	66
5820-99-543-8785	Receiver (2 off)	184	504	664	14
5820-99-543-8786	Auto Preselector (2 off)	184	504	664	27
5820-99-527-4447	Multicoupler				

Temperature Range

Operating: - 10 ° C to + 55 ° C  
Storage: - 40 ° C to + 70 ° C

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Original

## FACILITIES PROVIDED

### 100W & 400W HF COMMUNICATIONS SYSTEM

#### General

Frequency Range	1.6 - 29.9999 MHz
Channels	(a) 284000 channels in 100 Hz steps derived from a high stability TCXO selected by 6 in-line switches.  (b) 10 pre-programmable channels selected by a separate channel switch. Channels are programmed at the Controller.
Operating Modes	USB (A3J) USB CW (A2J) LSB CW (A2J) LSB (A3J) AM (A3H)

#### Transmitter

100W System, Nominal Power Output	LO: 100 milliwatts. M: 10 watts. HI: 100 watts. BOOST: 100 watts with speech compression.
400W System, Nominal Power Output	LO: 10 watts. M: 100 watts. HI: 100 watts. BOOST: 400 watts.
Duty Cycle	Continuous into 50 ohms load at nominal supply voltage.

#### Receiver

Selectivity	SSB 6 dB bandwidth 3.0kHz minimum AM 40dB bandwidth 5.0kHz maximum CW 3 dB bandwidth 100 Hz $\pm$ 30Hz centred on 1kHz $\pm$ 30 Hz.
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AM Reception	Received as USB (carrier and one sideband removed by 2nd IF filter).
AGC Range	The AF output changes less than 6dB for RF input variations of 100dB above 4 uV emf from a 50 ohm source.
Max AF Output	Not less than 30mW into 300 ohms (Audio sockets). Not less than 1W into 8 ohms (speaker socket on Controller).
<b>HF COMMUNICATIONS RECEIVER</b>	
Frequency Range	150kHz to 30 MHz
Modes of Reception	USB/LSB (A3A, A3H, A3J, A2A, A2H, A2J) AM (A3) MCW (A2) CW (A1) FM (F3) Auxiliary - provides demodulated signal centred on optional fixed BFO offset frequency.
Tuning	Continuously tunable synthesizer in 10Hz steps over the entire frequency range. Frequency setting either by numerical keypad or by single tuning knob with continuously variable tuning rate from 1 kHz per turn to approximately 20 kHz per turn, depending on the speed of rotation.
Pre-programmed Channels	EAROM memory unit may be programmed with up to 100 channel frequencies and modes which may be recalled by keypad or tuning control.
Channel Scanning	Automatic scanning of up to ten channels in any decade of the 100 stored channels. Dwell time on each channel variable in ten steps from 0.1 to 10 seconds; pre-selected by numeric keypad.
AGC	(a) Range: An increase in input of 110dB above 1uV EMF produces an output change of less than 2dB.  (b) Time constants: Short, medium and long - preset to be automatically selected by mode switching, but can be set independently by push-buttons.
IF Gain Control	Control range 110dB: Gain control may be switched either to manually set receiver gain or AGC threshold.

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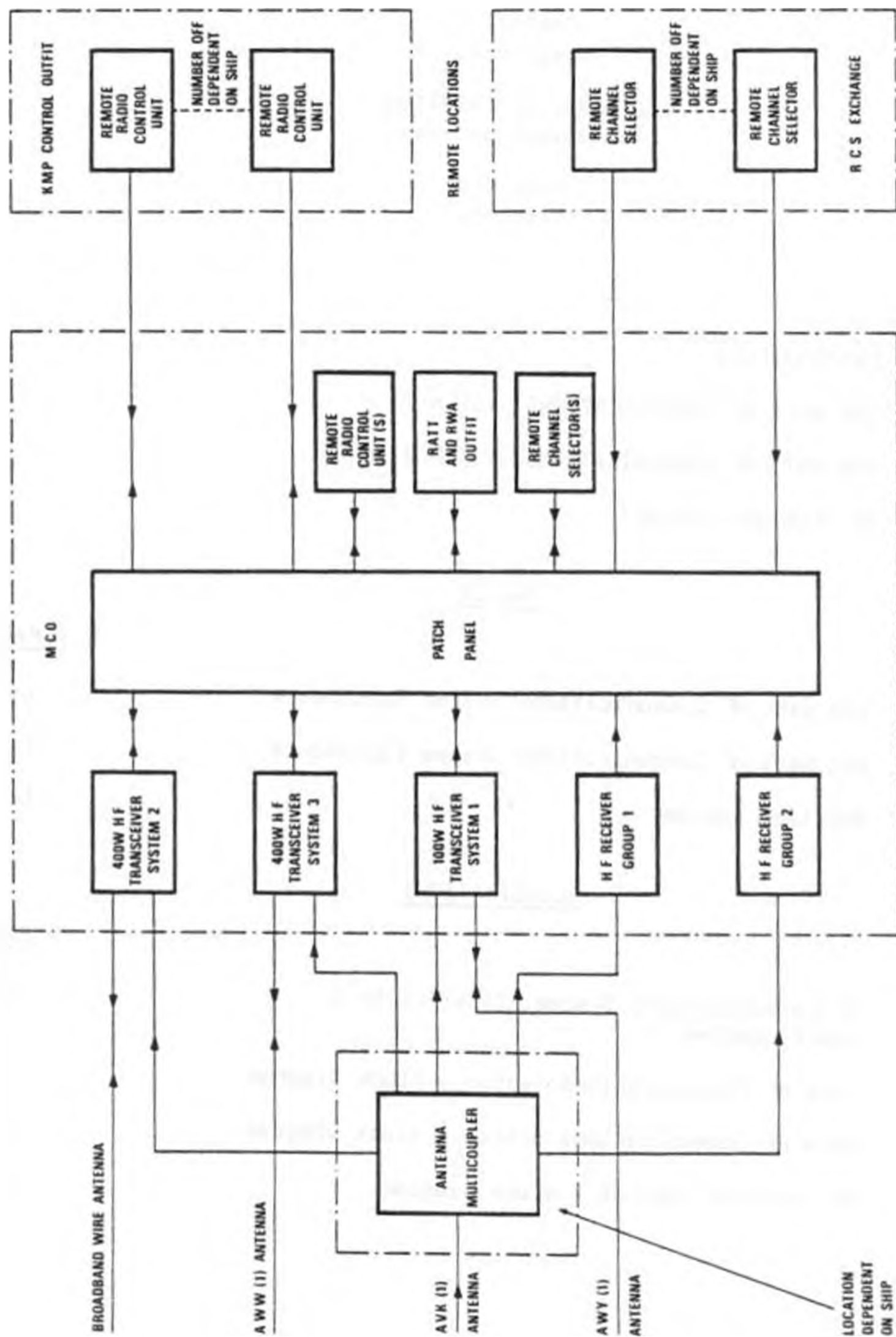
BFO

- (a) Variable by main tuning control, ± 8kHz, synthesized in 10 Hz steps.
- (b) Pre-selected fixed offsets may be selected for use with external demodulator.

Pre-set Operating  
Conditions

Bandwidth, AGC time constant, and BFO offset may be preset for each mode so that they are automatically recalled when the mode is selected.

'Auxiliary' mode may be set up for any mode, bandwidth, AGC time constant and BFO offset.

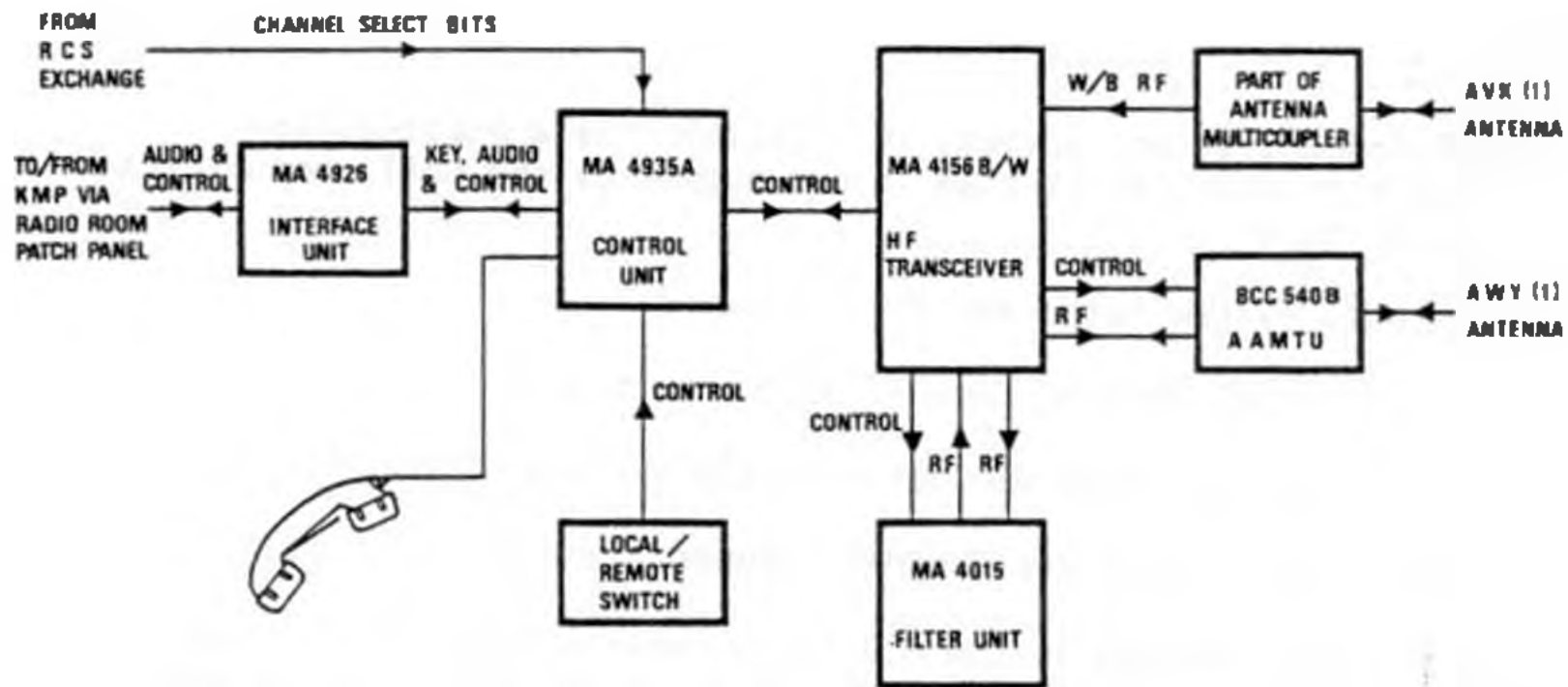


HF Communications System Type T/1255/2 - Block Diagram Fig 1.1

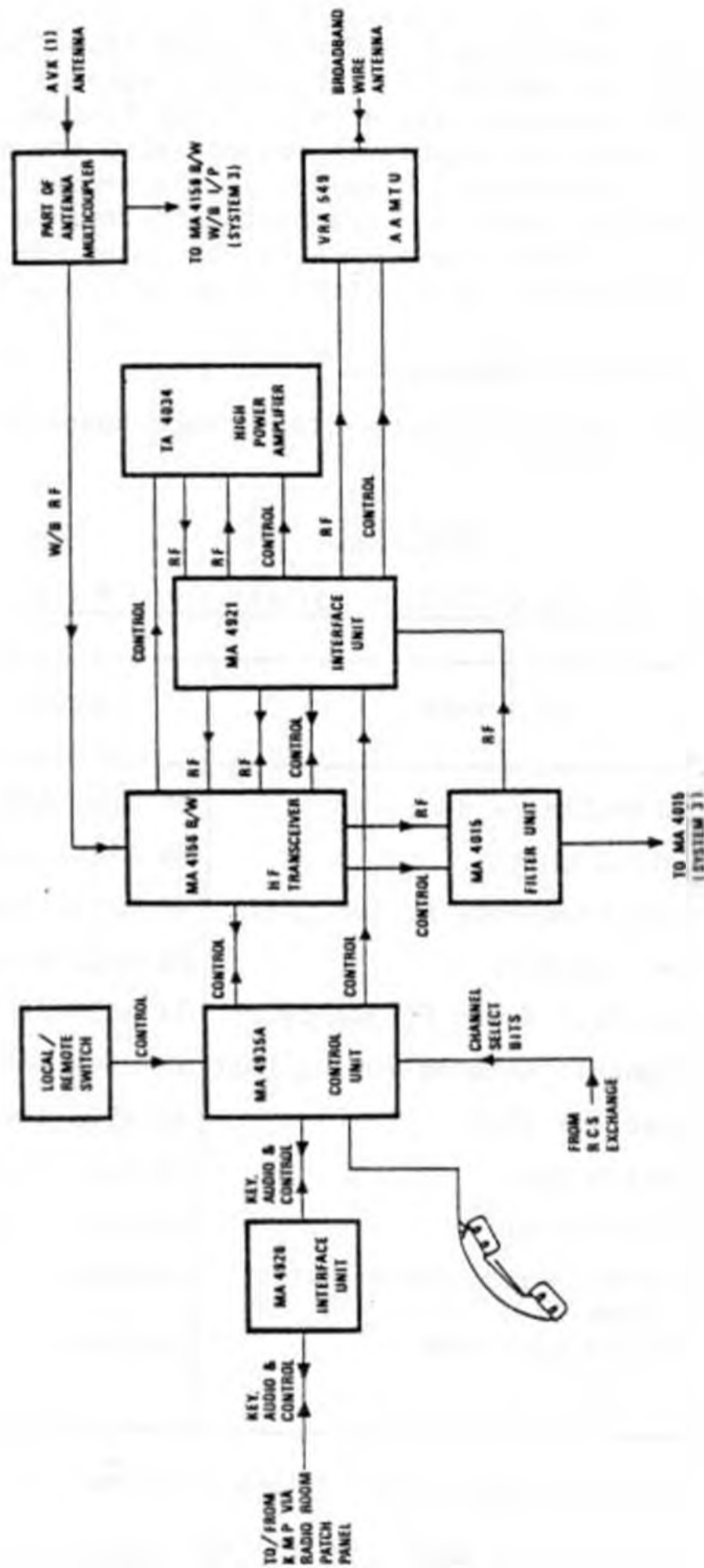
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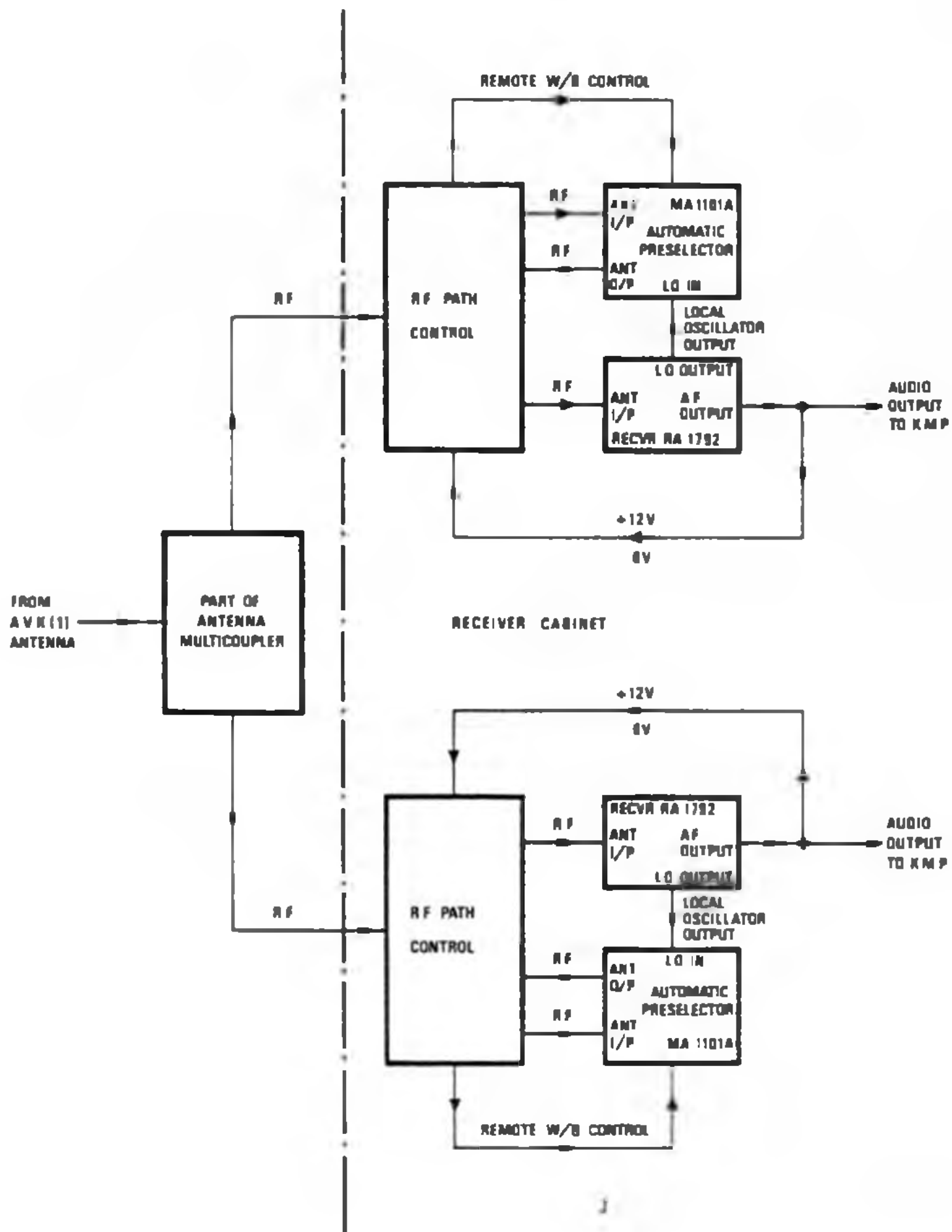
6. A block diagram of the 100W HF Communications System is shown in Fig.1.2



100W HF Communications System - block Diagram Fig 1.2



400W HF Communications System - Block Diagram Fig 1.3



HF Receiver Cabinet - Block Diagram Fig 1.4