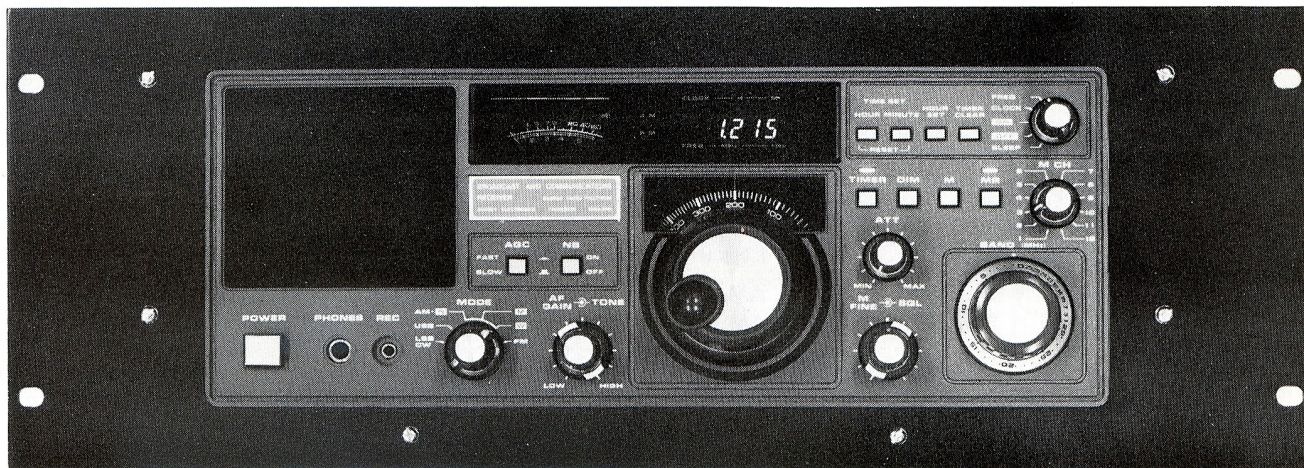


BROADCAST AND COMMUNICATIONS RECEIVER

MODIFIED YAESU FRG7700M

150kHz – 30MHz

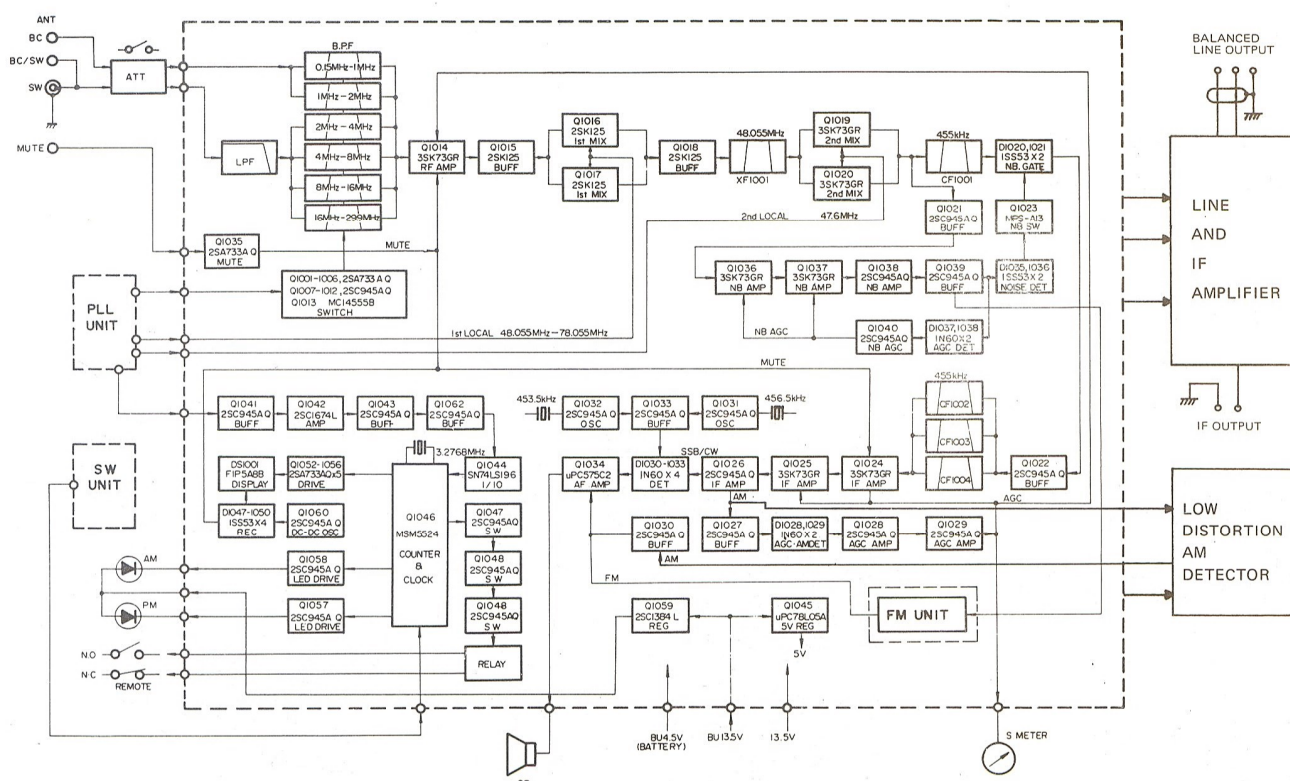


We have taken this synthesised all mode communications receiver and made several well thought out modifications to provide a receiver for rebroadcast purposes or checking transmitter performance as well as being suited to communications use. A completely new detector board yields exceptional distortion performance on AM.

PRINCIPAL MODIFICATIONS

- Radically redesigned front end stages yielding improved noise figure and better overload levels
- Flat audio frequency response on both AM and SSB
- Improved distortion on AM
- Corrected FM de-emphasis characteristic
- Balanced audio line output
- Buffered IF output for monitoring transmitted modulation envelope on an oscilloscope
- Mains safety improvements

The receiver is available in free standing or rack mounting form and all the original features are retained: 12 memory channels; mains or battery operation option; IF bandwidths 2.7kHz, 6kHz, 12kHz; digital frequency and time display; timer for unattended recordings or external switching; all modes including narrow band frequency modulation with squelch; advanced noise blanker.



SPECIFICATION

Frequency range	150kHz — 30MHz in 30 bands of 1MHz			
Overspill	40kHz at either end of each 1MHz band			
Noise figure	10dB, 50 Ohms, 1MHz — 30MHz			
Variation in RF gain relative to that at 10MHz, 50 Ohms source	1MHz — 30MHz \pm 6dB (originally +6, —15dB) 150kHz — 12dB			
Sensitivity for 10dB signal to signal + noise ratio	AM, 30%, 6kHz	SSB	FM, 1kHz dev.	
AM and FM modulation 1kHz	2MHz — 30MHz 6 μ V/50 Ohms	0.5 μ V/50 Ohms	1 μ V/50 Ohms	
	150kHz — 2MHz 20 μ V/500 Ohms	3 μ V/500 Ohms	6 μ V/500 Ohms	
Third order intercept point	—2dBm (originally —21dBm). Measured with two signals 100kHz apart between 150kHz — 30MHz			
Local oscillator hum sidebands	Less than -45dB (originally -20dB)			
Selectivity	AM W wide	12kHz: —6dB	25kHz: —50dB	
	AM M medium	6kHz: —6dB	15kHz: —50dB	
	AM N narrow	2.7kHz: —6dB	8kHz: —50dB	
	SSB/CW	2.7kHz: —6dB	8kHz: —50dB	
	FM	15kHz: —6dB	30kHz: —40dB	
Stability	Less than \pm 2kHz (memory \pm 1kHz) from 1 to 30 minutes after power on Less than \pm 1kHz (memory \pm 300Hz) after 30 minutes warm up			
Automatic gain control	For a 65dB increase in input level from —80 to —15dBm the IF and AF outputs change by less than 2dB			
ATT control	Varies AGC threshold (originally varied RF gain only)			
Total harmonic distortion 10MHz at -50dBm, 90% modulation, AM wide, AGC slow	200Hz — 6kHz -44dB, 0.6% (originally -20dB, 10%)			
	100Hz — 40dB, 1%; 40Hz — 28dB, 4%			
IF output	50mV rms, minimum load 2k Ohms , DIN-5, pin 3, common pin 1.			
AF line output	Electronically balanced, B type jack. Source impedance 50 Ohms. Clipping with 600 Ohms load +14dBm. Offset: none, dc blocked. Preset level adjustment covering 0 to +14dBm output for 100% modulated AM signal. Normally set for +8dBm			
AF frequency response	Line output 20Hz — 7kHz \pm 0.5dB			
Overall frequency response	Dependant on IF filter selected. Ripple for 30% modulated AM signal \pm 1.5dB relative to 400Hz			
De-emphasis on FM	100 μ s (originally 500 μ s)			
Noise on AM relative to 90% modulation, 6kHz bandwidth	-56dB mean reading, 20Hz - 20kHz -50dB CCIR468-2, weighting and peak meter			
Speaker and headphones output	1.5W into 8 Ohms, 10% THD. Minimum permissible load 4 Ohms, stereo headphone A type jack (originally single pole jack)			
Memory	12 channels stored to nearest 1kHz. Memory fine tune range \pm 1kHz. Memory and clock backup batteries 3 x AA size			
Supply input	100—120, 220—240V, 50—60Hz, Standby:10VA, On:39VA			
Battery supply option	12—15V DC, 1.2A			
Dimensions and weight	W334mm, H129mm, D225mm; 6.5kg			
Accessories supplied	2 metres supply lead to BS6500 with IEC connector; spare fuse; 10m length of wire for antenna; 2 extender feet with pads; instruction book, circuit diagrams and full documentation of all modifications			

RACK MOUNTING ASSEMBLY

Dimensions and weight	W483mm (19 inch), H177mm (4U), D230mm; 1.5kg
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