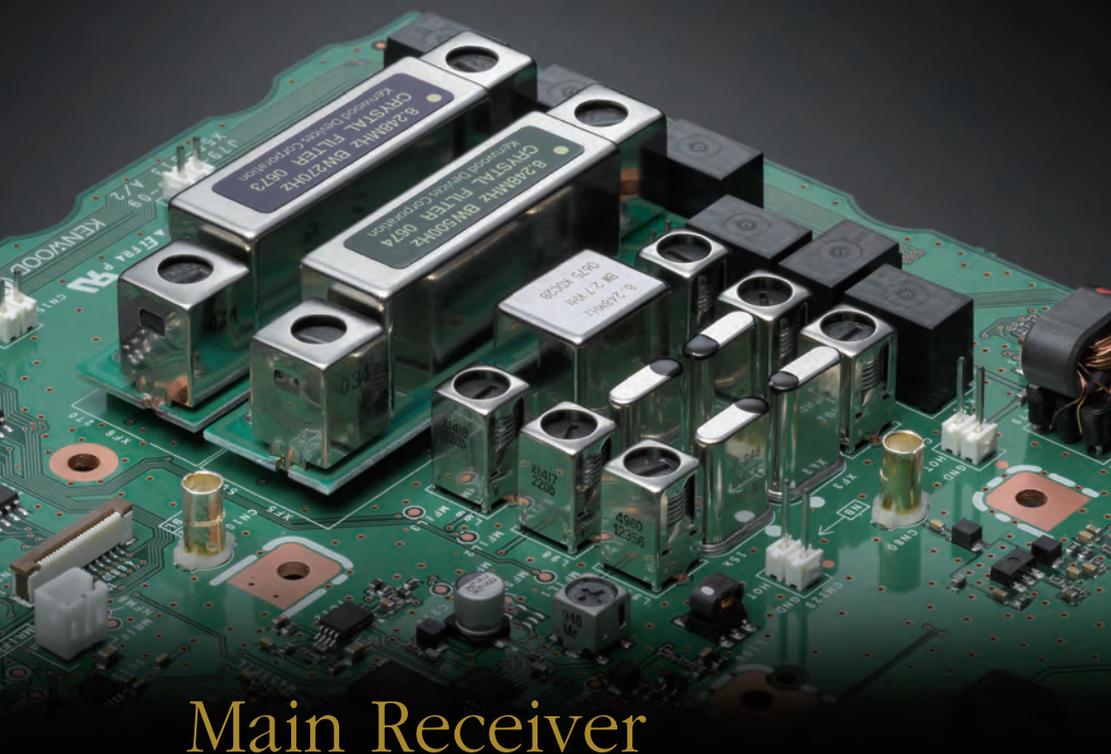


The TS-990S has the overwhelmingly highest quality receiver among the TS series.

The dual receivers facilitate reception on different bands.

The main receiver is the highest quality receiver among the TS-900 series, thanks to its down-conversion configuration, newly adopted mixer, and five types of roofing filters. The highest quality transceiver shows its true metal in contests, fierce pile-ups and high-intensity signals.

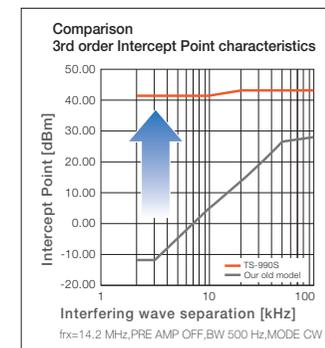
The TS-990S will surely satisfy any real DX'er.



## Main Receiver

### We have achieved a down-conversion format for all amateur bands

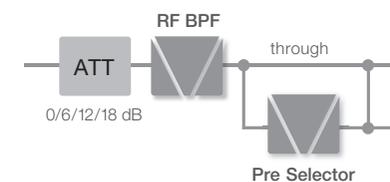
A key point in tapping maximum performance from the 1st mixer in actual operation (say, CW operation) is to prevent the outflow of unnecessary signals, other than the target signal, from the mixer to the subsequent stage. This is because it can tap the maximum performance of the digital IF filter using the DSP in the final IF stage. The TS-990S main receiver employs a 1st IF frequency 8.248 MHz down-conversion format. It achieves superior close-in dynamic range unattainable through conventional up-conversion formats. Even if the interference is a close-in frequency, the receiver maintains a relatively flat dynamic range, which you can tune without losing your target signal.



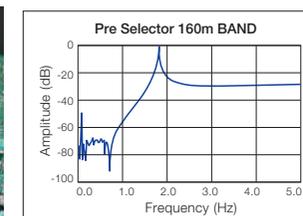
The horizontal axis shows separation of the target signal by interfering signal frequencies (two waves). At a frequency of 10 kHz, interference 1 refers to reception frequency + 10 kHz, and interference 2 refers to reception frequency + 20 kHz.

### The newly adopted mixer contributes to achieving +40 dBm IP3

In place of the Double Balanced Mixer, which uses the J-FET, we have installed the newly adopted Double Balanced Grounded Switch Type (H-mode mixer) in the 1st mixer circuit, which is the heart of the main receiver. The transceiver is also equipped with a pre selector function (works on HF amateur band) that varies its tuning frequency in tandem with the receiver frequency. It effectively dampens interference from strong signals that cannot be minimized through bandpass filters on dedicated amateur bands. Furthermore, we have achieved a +40 dBm class of third-order intercept point for the signal path of the 1st mixer, based on select circuits and components, employing large core toroidal coils for protecting against distortion from large input signals, as well as using relays for the signal switching.



Amateur band RF BPF



Pre Selector feature



Transformer feedback RF Amp

■ Main Options

**MC-90**  
Deluxe  
Desktop  
Microphone



**MC-60A**  
Desktop  
Microphone



**MC-43S**  
Hand  
Microphone



**HS-5\*1**  
Open-Air  
Deluxe  
Headphones



**HS-6\*1**  
Light Weight  
Headphones



**SP-990**  
External  
Speaker

**NEW**



**ARCP-990**  
Radio Control  
Program

**NEW**



**ARHP-990**  
Radio Host  
Program

**NEW**



\*Download the free software from the Kenwood website.

\*Download the free software from the Kenwood website.

\*1:HS-5 and HS-6 are monaural. We recommend using stereo headphones to fully utilize simultaneous dual reception function of the main unit.



■ TS-990S Specifications

General		
Frequency range (Transmitter)	160m band	1.81 ~ 2.0 MHz
	80m band	3.5 ~ 3.8 MHz
	60m band *1	5.25 ~ 5.45 MHz
	40m band	7.0 ~ 7.2 MHz
	30m band	10.1 ~ 10.15 MHz
	20m band	14.0 ~ 14.35 MHz
	17m band	18.068 ~ 18.168 MHz
	15m band	21.0 ~ 21.45 MHz
	12m band	24.89 ~ 24.99 MHz
	10m band	28.0 ~ 29.7 MHz
6m band	50.0 ~ 52.0 MHz	
Frequency range (Receiver)*2	0.13 ~ 30 MHz, 50 ~ 54 MHz VFO: Continuous 30 kHz ~ 60 MHz	
Mode	A1A(CW), A3E(AM), J3E(SSB), F3E(FM), F1B(FSK), G1B(PSK)	
Frequency stability	Within ±0.1 ppm(0 °C ~ +50 °C)	
Antenna impedance	50 Ω	
Antenna tuner load range	16.7 Ω ~ 150 Ω	
Supply voltage	AC 220 - 240 V ±10 % (60 / 60 Hz)	
Power consumption	At transmit (maximum)	840 VA or less
	At receive (no signal)	200 VA or less
Usable temperature range	0 °C ~ +50 °C	
Dimensions	Without projection	W460 x H165 x D400 mm
	Include projection	W460 x H182 x D449 mm
	At front leg up position	H201 mm (front panel), H173 mm (rear panel)
Weight	Approx. 24.5 kg	
Transmitter		
Output power	CW/SSB/FSK/PSK/FM (AM)	200 W (50 W)
Modulation	SSB:Balanced, AM:Low Power, FM:Reactance	
Maximum frequency deviation (FM)	wide: ±5 kHz or less, narrow: ±2.5 kHz or less	
Spurious emissions	HF (Harmonics) : -60 dB or less	
	HF (others) : -50 dB or less	
Carrier suppression	50 MHz: -66 dB or less	
Unwanted sideband suppression	-60 dB or less	
Transmit frequency response	Within -6 dB (300 ~ 2700 Hz)	
Microphone impedance	600 Ω	
XIT variable range	±9.999 kHz	

Receiver					
		Main	Sub1*3	Sub2*4	
Circuit type		Double superheterodyne	Double superheterodyne	Triple superheterodyne	
	Intermediate frequency	1st IF	8.248 MHz	11.374 MHz	73.095 MHz
		2nd IF (FM)	24 kHz/ (455 kHz)	24 kHz	10.695 MHz
3rd IF (FM)		-	-	24 kHz / (455 kHz)	
Sensitivity (TYP)	SSB, CW, FSK, PSK (S/N 10 dB)	0.5 μV (0.13 ~ 0.522 MHz)			
		4 μV (0.522 ~ 1.705 MHz)			
		0.2 μV (1.705 ~ 24.5 MHz)			
		0.13 μV (24.5 ~ 30 MHz)			
		0.13 μV (50 ~ 54 MHz)			
AM (S/N 10 dB)	6.3 μV (0.13 ~ 0.522 MHz)				
	32 μV (0.522 ~ 1.705 MHz)				
	2 μV (1.705 ~ 24.5 MHz)				
FM (12 dB SINAD)	1.3 μV (24.5 ~ 30 MHz)				
	1.3 μV (50 ~ 54 MHz)				
Image Rejection Ratio (50 MHz)	70 dB (60 dB) or more				
IF Rejection Ratio	70 dB or more				
Selectivity	SSB (L0:200 / HI:2800 Hz)	2.4 kHz or more (-6 dB)			
		4.4 kHz or less (-60 dB)			
	CW, FSK, PSK (WIDTH:500 Hz)	500 Hz or more (-6 dB)			
		1.2 kHz or less (-60 dB)			
	AM (L0:100 / HI:3000 Hz)	6.0 kHz or more (-6 dB)			
FM	12 kHz or less (-50 dB)				
	12 kHz or more (-6 dB)				
	25 kHz or less (-50 dB)				
XIT variable range	±9.999 kHz				
Notch filter attenuation	60 dB or more (Auto), 70 dB or more (Manual)				
Beat cancel attenuation	40 dB or more				
Audio output	1.5 W or more (8 Ω)				
Audio output impedance	8 Ω				

\*1 60m band: Refer to applicable Amateur Radio regulations to your country.

\*2 MAIN BAND: Spec. guaranteed in amateur band 160m through 6m

\*3 In 160m/80m/40m/20m/15m Amateur bands, IF band width 2.7 kHz or less (SSB, CW, FSK, PSK)

\*4 Except in above \*3

Internal beat may occur during amateur radio band reception depending on combination of main band and sub-band frequencies of a main unit.

Spurious signal other than reception signal may appear on band scope (waterfall view) too.



---

## Kenwood Electronics UK Limited

Kenwood House Dwight Road Watford  
Hertfordshire WD18 9EB, United Kingdom

\*Alterations may be made without notice to improve the ratings or the design of the transceiver.

\*The photographic and printing processes may cause the coloration of the transceiver to appear different from that of the actual transceiver.

[www.kenwood-electronics.co.uk](http://www.kenwood-electronics.co.uk)

CA322E-E-16