RECEIVER 565

FEATURES

The 565 Receiver provides AM, FM, CW, and pulse reception over the frequency range of 20 MHz to 1000 MHz using five plug-in tuning heads. Ranges of the tuning heads are 20-90 MHz, 90-260 MHz, 200-425 MHz, 235-500 MHz, and 500-1000 MHz. One tuning head may be installed in the receiver at a time. Four front-panel selectable IF bandwidths are provided. Bandwidths of 10, 50 and 300 kHz, and 3 MHz are standard. The customer may select any four bandwidths between 10 kHz and 3 MHz as an extra-charge option. Units ordered with bandwidths other than standard will be identified by a dash number suffix. The IF output center frequency from all tuning heads is 21.4 MHz. Crystal filters are used to establish bandwidths up to 100 kHz and LC filters for bandwidths wider than 100 kHz. For the demodulation of FM signals crystal discriminators are used for the narrow bandwidths and LC Foster-Seeley circuits for the wide bandwidths. In the CW mode a tunable BFO operates in all bandwidths. A pre-detection IF output centered at 21.4 MHz is available at the rear panel of the receiver

The receiver was designed to provide state-of-the-art signal handling performance without sacrifice of noise figure or other receiver performance parameters. All design objectives were met. The 565 Reeciver delivers a typical 3rd order intermod intercept point of -5 dBm referred to the input of the receiver Thus, two -40 dBm signals within the input passband produce a 3rd order intermod product which is 70 dB below the level of the input signals. Worst case 3rd order intermod performance is specified as an input intercept point of 10 dBm.

The 565 Receiver is provided with a built-in signal monitor which gives a visual display of signal activity over a frequency range of up to 1.5 MHz on both sides of the tuned frequency The sweep width of the display is continuously variable by means of a front-panel control up to 3-MHz maximum dispersion. A 21.4-MHz crystal controlled marker oscillator built into the display may be used to indicate the exact center of the receiver's IF passband. By providing the marker oscillator, the need for a tuning meter is eliminated.

Tuning heads for the 565 Receiver are designated as follows

Type	*Frequency Range*
VH-101	20-90 MHz
VH-103	90-260 MHz
VH-105	200-425 MHz
UH-101	235-500 MHz
UH-102	500-1000 MHz

All active elements in the 565 Receiver and tuning heads are solid state with the exception of the CRT in the spectrum display A carrier operated relay (COR) in the receiver has an adjustable threshold control and a COR

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release delay switch so that the release time can be set to approximately 0.5, 5 or 15 seconds. The relay has DPDT contacts which are brought out to a rear-panel barrier strip. Audio squelch is provided by the threshold set with the COR threshold control. There is no delay, however, in blanking the audio output following the loss of the input signal. The output of the receiver's video amplifier is fed to a rear-panel BNC connector A screwdriver-adjust gain control for the video amplifier is also located on the rear panel. The receiver operates from a 115 or 230 Vac, 50-400 Hz prime power source. It mounts in a standard 19-inch rack.

SPECIFICATIONS

Frequency Range	20-1000 MHz using five plug-in tuning heads
Types of Reception	AM, FM, CW and Pulse
IF Bandwidths	Four front-panel selectable IF bandwidths are provided. Bandwidths of 10, 50, and 300 kHz and 3 MHz are standard. The Customer may select any four bandwidths between 10 kHz and 3 MHz as an extra-charge option.
Intermediate Frequency	21.4 MHz
Predection IF Output	21.4 MHz center frequency; provides 100 mV, minimum, into 50-ohm load for input signals above AGC threshold
BFO Tuning Range	±8 kHz, minimum, operates in all IF bandwidths
COR Sensitivity	6 dB below input signal levels specified for 10 dB (s plus n)/n for each tuner and IF bandwidth
COR Range	Continuously adjustable to operate on minimum threshold input signals and up to -40 dBm input
COR Operate Time	5 ms, maximum
COR Release Time	0.5 sec, 5 sec, and 15 sec, all ±25%
	Selected by front-panel switch
AM Output Stability with AGC	Output changes by no more than 6 dB from input signal levels specified for 10 dB(s plus n)/n for each tuner and IF bandwidth to -10 dBm
Sensitivity	
AM	The following input signal level in dBm, AM modulated 50% by a 1 kHz tone, will produce 10 dB (s plus n)/n minimum when used with a tuner having a noise figure as specified in the Table 1
FM	The following input signals levels in dBm, FM modulated at a 1-kHz rate with a deviation equal to 30% of the IF bandwidth, will produce 17 dB (s plus n)/n, minimum when used with a tuner having a noise figure as specified in the Table 1
Tangential Sensitivity	Input signal levels 6 dB lower than those in the preceding table will produce tangential sensitivity for pulse signals with a repetition rate equal to .01 of the IF bandwidth and a 10% duty cycle.
Gain Control Characteristics	
Pulse AGC, 3-MHz Bandwidth	Charge time sufficiently short to permit pulse widths as narrow as 1 μ sec and as wide as a square wave. Discharge time sufficiently long to operate with PRR of 100 pps.
Manual Control Range	70 db, minimum