

# CS-5020C Series Microwave Tuners and Receivers



The CS-5020C Series Microwave Tuners and Receivers are high-performance instruments covering the center tune frequency range from 0.5 -18+ GHz.

The CS-5020C Series of Microwave Tuners and Receivers are high performance, super-heterodyne, set-on and sweep units that convert signals in the frequency range of 0.5 to 18 GHz into IF outputs of 1.0 GHz and user selectable 70, 140 and 160 MHz outputs. Specialized models feature video (AM/FM/LOG) and audio demodulated outputs. These units can be extended in frequency coverage to 0.1 to 18+ GHz without the need for external extenders.

A millimeter-wave downconverter interface can also be included internally, which allows the operator to attach a remote downconverter to provide further coverage in the millimeter-wave frequency range.

The CS-5020C Tuner/Receiver Series feature outstanding performance, flexibility and value in dedicated and multi-mission roles. The high dynamic range with a typical noise figure of 13 dB, third-order intercept of +2 dBm, and 100 Hz tuning resolution make the CS-5020C Series capable of operating in demanding missions. The available 70/140/160 MHz IF outputs with switchable AGC/MGC are normally upright, but can be inverted upon command. Additional options include AM, FM and LOG demodulators, as well as up to 7 customer defined bandwidths. The RF/IF gain is

microprocessor normalized to provide excellent flatness across the entire 0.1 to 18+ GHz frequency range. Each model in the CS-5020C Series is fully synthesized with phase noise less than 0.65° RMS (0.5° typical), and is phase coherent to either an internal crystal oscillator or an autosensing external 10 MHz reference.

Each CS-5020C is contained in a half-width, two-unit-high rack-mount package that uses forced air cooling for high operational reliability. The AC power input accepts 90 - 260 VAC, 47 - 440 Hz. The internal power supply has sufficient output for an optional external millimeter-wave downconverter and preamplifier.

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## SPECIFICATIONS

Input frequency (standard)	0.5 - 18 range
Max CW input signal level	+20 dBm (no damage)
LO re-radiation	-95 dBm max (0.1 - 22 GHz)
Noise figure (at 25°C)	13 dB typical, 0.1 - 17 GHz 15 dB max to 18 GHz
Input 1 dB compression	-15 dBm min
Input third-order intercept	+0 dBm typical
Image rejection	70 dB min up to 18 GHz
IF rejection	70 dB min
Tuning modes	Continuous wave or sweep
Settling time	25 ms max
Tuning resolution	100 Hz
Internally generated spurious	-100 dBm max equiv. input
Integrated phase noise	0.5° RMS typ; 0.65° RMS max
IF output frequency/bandwidth	
All models	1.0 GHz/500 MHz
Below 500 MHz	1 GHz/85 MHz
2nd IF output frequency/bandwidth	
COMINT	70/50, 140/85, 160/85 MHz
ELINT	70/50, 140/100, 160/100 MHz
RF/IF gain (fixed gain outputs)	
70/140/160 MHz IF	15 ±2 dB typical
RF/IF gain flatness	±1 dB max (0.1 - 18 GHz)
Variable gain IF output (all COMINT/ELINT models)	
Control	60 dB min
AGC	-10 dBm
MGC	1 dB steps
Function controls	Front panel 10/100 Base-T Ethernet RS-232 RS-485
BITE (Built-In-Test)	Standard

## CONTROL, ANALYSIS, AND VISUALIZATION SCREENS

- 0.5 to 18 GHz coverage
- Extended coverage available
- Low phase noise - 0.5° RMS typical
- 1 GHz/500 MHz BW IF output
- Search and set-on modes
- Wideband LOG amplifier
- 70/140/160 MHz IF; selectable AGC/MCG
- Signal and pulse measurement
- Demodulation, audio/video outputs
- Digitizer interface

## OPTIONS

- Option 1                    Selectable IF outputs
- Option 3                    Digital interfaces
- Option 4                    LOG amplifier
- Option 5                    Extended frequency coverage
- Option 6                    Variable gain IF output/AM demodulation
- Option 7                    Up to 7 additional IF BWs/FM and LOG demodulation
- Option 8                    I/Q outputs
- Option 9                    RF input blanking/attenuator
- Option 11                   COMINT/ELINT filters

## SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

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### For more information contact:

Rockwell Collins  
3200 East Renner Road  
Richardson, TX 75082-2420  
Phone: 972.705.1438  
Fax: 972.705.1436  
email: [ewsigint@rockwellcollins.com](mailto:ewsigint@rockwellcollins.com)  
[www.rockwellcollins.com/ewsigint](http://www.rockwellcollins.com/ewsigint)

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