

# Blue Source Revolve+



## Radio Frequency Synthesizer

High-speed, compact, cost-effective signal generation when reliability is paramount

- Patented DDS RF signal generation technology
- Mixer-based RF conversion architecture
- 0.1-20 GHz continuous frequency coverage
- 18-40 GHz frequency expansion option
- $\leq 50$  ns frequency switching speed
- $\leq -127$  dBc/Hz phase noise all frequencies
- Pulse modulation waveform control
- Auto-detect 10 MHz external reference
- Dual 100/500 MHz fixed LO output references
- Compact avionics packaging in 1U chassis
- Plug and play analog and digital interfaces
- Ethernet link to remote user interface



**BlueSource Revolve+** is a high-speed, compact, cost effective signal generator for applications that require the utmost reliability in the frequency ranges of 0.1 GHz – 20.0 GHz. Focusing on reliability and availability, it comes with multiple RF modules packaged in a rugged single unit with a clean, low profile layout using high-reliability components. Revolve+ includes gain and leveling control embedded within its modules, reducing the number of parts and connections. This significant parts count reduction increases its mean time before failure (MTBF), with projections of over 100,000 hours.

Revolve+ incorporates the latest direct digital synthesis technology available resulting in fast, coherent frequency hopping and chirping, and full arbitrary waveform generation capability. With an extremely low-phase noise at  $-127$  dB/Hz at 10 GHz, its industry-leading internal low phase noise reference may operate independently or be synchronized to an auto-detected, external 10 MHz or 100 MHz reference.

Born of a need for a reliable frequency synthesizer without costly down-time or poor performance, the Revolve+ replaces older, less-efficient technology. It also has significant carry-over into adjacent markets with uses for precision instrumentation radars, and tactical and operational radars.

# BlueSource Revolve+ Specifications

## Performance Attributes

Industry-leading, low phase noise and switching time
Outstanding price-to-performance ratio
Complete local oscillator and internal power-supply solution in 2U rack space
Low-phase-noise reference operates independently or synchronized to 10 or 100 MHz reference
Short warm-up time; pre-warmed reference oscillator, 5 min; cold-started reference oscillator, 30 min
Industry-standard BCD frequency control with 1 Hz resolution
Alphanumeric display indicates selected frequency and diagnostic information

## Key Performance Specifications

Frequency tuning	0.1-20 GHz output
Frequency resolution	0.1 Hz
Frequency accuracy	±0.1 Hz regardless of frequency step size
Frequency stability	1 ppm/year typical; ±0.2 ppm for 50° C temperature change
Fast switching time	<200 ns regardless of step size
Phase noise	10 kHz offset @ 10 GHz output: <-127 dBc/Hz
Phase coherency	±3 µrad accuracy for any number of frequency changes
Spurious/harmonic signals	<-60 dBc
Output power	≥10 dBm over entire frequency range
Power requirements	100 Watts, 115/230 VAC, 50/60 Hz

