

The ideal EMC RF Signal Generator

Flexible · Accurate · Extensible

An important part of an EMC immunity test system is the RF signal generator. It produces the modulated or un-modulated RF carrier signal at a certain frequency and signal level. The latest expansion of the product range of DARE!! Instruments is the RadiGen® series EMC RF signal generators. These generators are optimized for EMC test purposes in order to perform fast and accurate EMC immunity tests without the need of external modulation sources.

Flexible

The RadiGen® EMC RF signal generator is available in two models; the model RGN2400A covers a frequency range from 9 kHz to 400 MHz and the RGN2006A is ranging from 9 kHz to 6 GHz.

These models offer a solution for all conducted and radiated immunity test applications. The generator provides CW, AM, FM and Pulse modulated signals using an internal modulator. The Pulse on/off times can individually be set between 200 ns and 100 seconds. Pulse duration/repetition times can be configured separately offering very flexible Pulse modulation settings including Automotive Radar Gated Pulse tests (Ford, GM and PSA). The RGN2006A RF signal generator has 2x SMA connectors, 1x SMA for 9 kHz to 400 MHz (low band) and 1x SMA for 9 kHz to 6 GHz.

Accurate and pure signal

The RadiGen® is an RF signal generator with a frequency error of less than 10 ppm, a modulation accuracy better than 2% and an output level settling time is shorter than 1 msec. These figures make it the perfect generator for fast and accurate EMC immunity testing. Problems with non monotone behaviour and glitches in the output level are often encountered with generators using fixed step attenuators. Due to the fully solid state design of the RadiGen® problems caused by defects to the output attenuator or RF switches are eliminated, resulting in a complete monotone increase of output power level without any glitches. Problems with levelling algorithms in EMC test software or mechanical defects to the output attenuator can not occur, resulting in a better Mean Time Between Failure (MTBF) for the RadiGen®.

Modular system

The RadiGen® generator is delivered as a very compact, one slot, plug-in card designed to fit into the modular RadiCentre® system. The RadiCentre® is available as a one, two or seven slot system. The system is multifunctional and, for example can contain a RF signal generator (RadiGen®), one or more different E-field probes (RadiSense®), coaxial switch cards (RadiSwitch®), RF power meters (RadiPower®) and a E-field generator (RadiField®). If needed, even larger EMC test systems can be built by combining multiple RadiCentre® systems.



Easy to use

The RadiCentre® systems are "Plug and Play", which means that every plug-in card is automatically recognised and initialised by the RadiCentre® and immediately ready to use. The user can configure and control the system using USB, LAN and GPIB (*) or through the touchscreen (*).

Software support

The system can be controlled by the RadiMation® integral EMC test and measurement software or by any other EMC measurement software packages using the RadiGen® software command codes.

(*) = only on 2-slot and 7-slot RadiCentre



Performance	RGN2400A	RGN2006A
Frequency range	9 kHz - 400 MHz	9 kHz - 6 GHz & 9 kHz - 400 MHz
Output connector	Output: SMA	Dual output, 2x SMA
Frequency standard	Internal 10 MHz reference	
Frequency error Internal Reference ⁽¹⁾	+/- 10 ppm / Year	
Frequency resolution	1 Hz	
Internal reference frequency output	BNC, 10 MHz / 700 mV _{rms}	
Amplitude accuracy (0 dBm reference)	BNC, 10 MHz / 700 mV _{rms}	
Minimum RF output level	-70 dBm	
Maximum RF output level	+13 dBm (+7 dBm when using AM)	
Amplitude resolution	0,1 dB	
Amplitude accuracy (0 dBm reference)	+/- 1 dB +/- 0,01 dB/dB	
Output level settling time	<1 msec	
Harmonics ³	< -20 dBc (typical -35 dBc)	
Non-harmonic spurious ⁴	9 kHz to 400 MHz < -60 dBc 400 MHz to 6 GHz < -50 dBc	
Output impedance	50 Ohm	
Modulation		
Modulation types	CW, AM, FM, Pulse and Gated Pulse	
Modulation frequency range	1 Hz to 100 kHz	
Modulation resolution / accuracy	1 Hz / < 1 %	
AM modulation depth	0 % - 100%	
AM Frequency resolution	1 %	
AM accuracy ⁽²⁾	2 %	
FM modulation depth	1 Hz - 100 kHz	
FM Frequency resolution	1 %	
FM accuracy ⁽²⁾	2 %	
Pulse ON/OFF time- range	200 ns - 100 s (resolution :100 ns)	
Pulse accuracy	0.1 % ± 20 ns	
Pulse modulation On/Off ratio	> 90 dB	
Dimensions		
Height x Depth	100 mm (3 U) x 220 mm	
Width	Takes up one free slot in a RadiCentre	
Environmental conditions		
Temperature range	10 °C - 40 °C	
Relative humidity	10% - 90% (non-condensing)	
Power consumption		
Supply voltage	12 / 28 VDC	
Power consumption	< 30 W	
Warranty	3 years (misuse excluded)	

⁽¹⁾ Measured 10 minutes after power on

⁽²⁾ Measured at 0 dBm output level

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