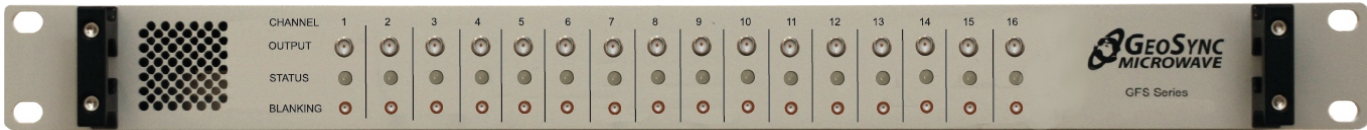




Multiple Microwave Frequency Synthesizers 1 -18 GHz, Up to 16 Independent Sources; Jitter ≤ 70 fs, -40 dBc Harmonics



Principal Features -

- Continuous frequency coverage as wide as 1 to 18 GHz. Application optimization with selection with multiple frequency band synthesizer modules.
- Up to 16 Independent frequency outputs each separately controlled and selected by the user.
- Superior Phase Noise both close in: -75 dBc at 10 Hz offset and and far out: -135 dBc @10 MHz offset.
- Integrated Phase Noise Jitter over the 100 Hz to 1MHz offset range is ≤ 70 fs typical.
- Switching time (blanking) from on to off and vice a versa for each output is 10 ns with an isolation of >50 dB between channels.
- The entire array is integrated in a 1 RU rack tray with power supply, software control interface and LED indicators for each channel.

RF Specifications -

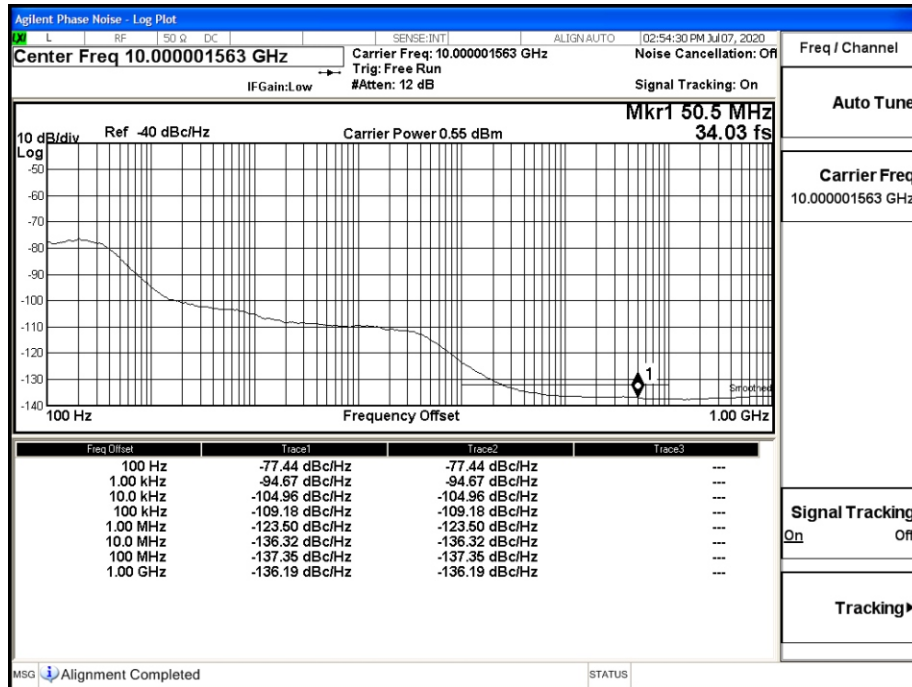
- Independent Frequency Outputs
- Frequency Range: Up to 1 to 18 GHz, each independent (see model number table)
- Frequency Step Size: 100 KHz (other step sizes optional)
- Frequency Stability: equal to reference
- Output Power: 5 dBm minimum, 8 dBm maximum, (Separate high power 23dBm amplifier available as an option)
- Output Return Loss: 10 dB minimum
- Attenuation Range: 30.5 dB in 0.1 dB steps
- Input Reference Frequency: 5, 10 or 100 MHz auto-detect
- Input Reference Power (per module): 4 ± 3 dBm
- Harmonics: -40 dBc maximum
- Sub-harmonics: -60 dB maximum
- Spurious, In-band: -60 dBc maximum
- Spurious, Out of band: -60 dBc maximum
- Switching speed: 10 msec after command receipt
- Isolation
 - Channel to channel (cross talk): 50 dB minimum
 - On to off and off to on: 50 dB minimum isolation
- Phase Noise;
 - Integrated Phase Noise Jitter (100 Hz to 1MHz offset): 70 fsec typical, 90 fsec maximum

RF Specifications (Continued) -

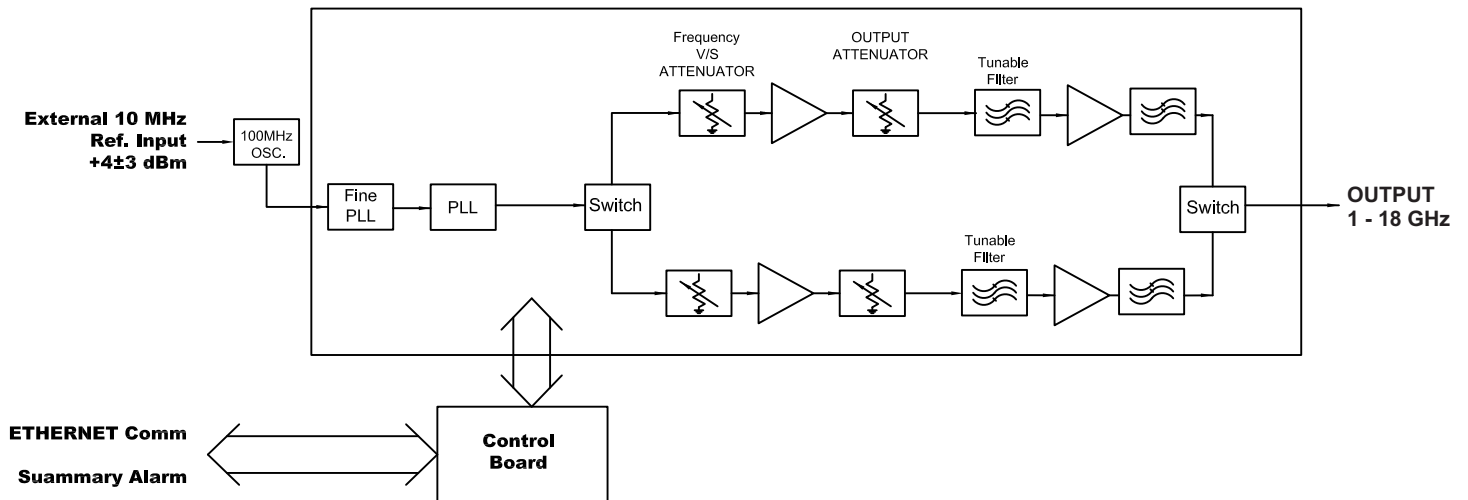
- **Control -**

- Control: Ethernet (TCP/IP), with DHCP
- Blanking: Via front panel connector, logic level (3.3V, Blank, 0V normal)

Typical phase noise at 10 GHz -



Block diagram (1-18 GHz module) -



Note: All specifications are at 23C unless otherwise noted.

PRIMARY POWER REQUIREMENTS

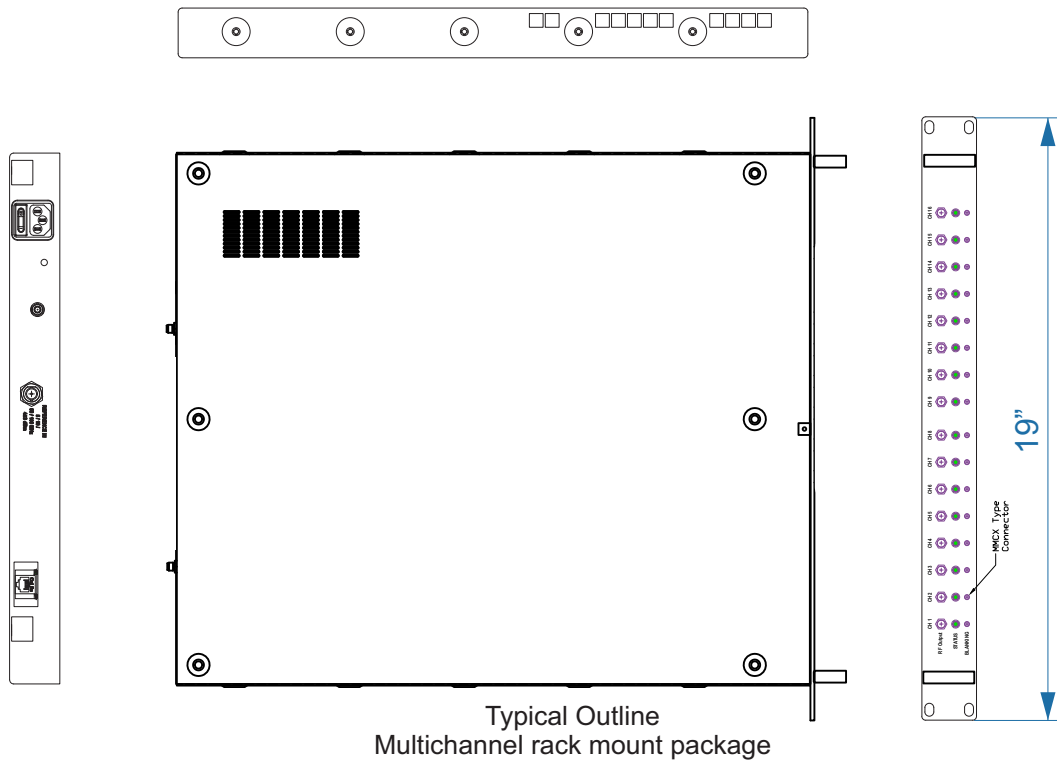
Voltage.....	90-250 VAC
Frequency.....	47-63 Hz
Consumption.....	65W typical (dependent on number of channels)
Fuse.....	T1.25A

PHYSICAL

Weight	14 pounds (6.4kg) nominal without rack slides
	18 pounds (8.2kg) nominal with rack slides
Chassis Dimensions	19" x 3.5" panel height x 20" maximum
Connectors-	
RF	SMA female
Blanking.....	MMCX female
Remote Interface	RJ-45 female for Ethernet
Primary Power	IEC-60320-C13/C14

ENVIRONMENTAL

Operating-	
Ambient Temperature	10 to 35°C
Relative Humidity	Up to 95% at 30°
Altitude	Up to 10,000 feet
Non-operating-	
Ambient Temperature	-20 to 60°C
Relative Humidity	Up to 95% at 40°C
Altitude	Up to 40,000 feet
Shock and Vibration	Normal handling by commercial carriers



MODEL NUMBERS -

CHASSIS model number: GFS16 (pre-wired for 16 channels)

RF Modules -

Output Band	Module Model	Frequency Band designation
1 to 18 GHz	FS018	A
1 to 6 GHz	FS0106	B
6 to 12 GHz	FS0612	C
6 to 18 GHz	FS0618	D

16 Channel Model Number Configuration
GFS16-Channel Band Designation, slots

Example -

GFS16-A0108C0916 is a 16 Channel source with channels 1 to 8 populated with 1-18 GHz sources and channels 9-16 with 6 to 18 GHz sources.