

MI-3111 and MI-3112 Synthesized Signal Sources

Features & Benefits

- Better than 200 microsecond frequency switching
- Low phase noise standard
- Optional pulse modulation



MI-3111/3112

Description

MI Technologies' MI-3111 and MI-3112 Synthesized Signal Sources provide a fast and accurate signal generation solution for a wide range of test and measurement applications. Both models are designed to be used in test and measurements situations where agile RF and microwave frequency tuning is required, making them ideal for antenna, radome, radar cross section and other microwave measurement applications.

By providing extremely low phase noise, a high output power across the full frequency range and fast frequency switching simultaneously, these synthesizers offer flexibility to accommodate many complex measurements. The combination of features offered by these synthesizers make the MI-3111 and MI-3112 a 'must have' for many R&D as well as manufacturing environments.

The signal sources are offered in two frequency range configurations:
MI-3111 - 0.1-20 GHz
MI-3112 - 2.0-20 GHz

Both the MI-3111 and MI-3112 can be provided with an optional integral pulse modulator capable of 500 nanosecond pulse widths with an ON/OFF ratio better than 70 dB.

The sources feature a 10/100BaseT Ethernet interface standard as the remotely programmable interface with an RJ-45 connector on the rear panel. Although perfectly suited for ATE applications, these synthesizers are designed with an intuitive, easy to use front panel user interface. The sources are delivered as a 3U rack mountable unit with rack ears and front panel RF output.

Productivity Assured

Requirements for testing are growing more complicated as companies strive for more productivity. MI Technologies' instruments, systems and software address the need for increased productivity in test and measurement applications. The MI-3111 and MI-3112 Synthesized Signal Sources speed test and measurement processes via an externally triggered interface for rapidly

switching through a list of frequencies with up to 1024 points. The list can be stepped through in a forward and reverse order to support complex microwave test applications.

These Synthesized Signal Sources are the solution of choice for the MI Technologies' MI-2097 Automated Microwave Measurement System. These sources are optimized to work with the MI-2097 and enable high system throughput. The MI-3111 and MI-3112 are available as speed and productivity upgrades to existing systems.



1-800-854-3660
www.mi-technologies.com

Product Specifications

RF Output

| | |
|--------------------------------------|---|
| Frequency Range | |
| MI-3111 | 0.1 to 20.0 GHz |
| MI-3112 | 2.0 to 20.0 GHz |
| RF Maximum Output Power Level: | +13 dBm +1/-2 dB |
| Frequency Switching Time: | 200 microseconds* |
| Output Accuracy: | ± 1.0 dB** |
| Frequency Resolution: | 1 Hz (0.1 - 4 GHz) 2 Hz (4 - 8 GHz) 4 Hz (8 - 16 GHz) 8 Hz (16 - 20.045 GHz) |
| Frequency Stability vs. Temperature: | 3 x 10 ⁻⁹ /deg C (0° to 55° C) |
| Output Impedance: | 50 Ω nominal |
| Level Drift: | < 0.05 dB/deg C |

Spectral Purity (at +6dBm Output Power Level)

| Harmonics Frequency (GHz) | Harmonic (dBc) | Sub-Harmonics (dBc) |
|---------------------------|----------------|---------------------|
| .1 to .5 | ≤ -50 | -55 |
| .5 to 2.0 | ≤ -50 | -55 |
| 2.0 to 20.0 | ≤ -55 | -55 |

Spurious: < -55 dBc

*Measured from rising edge of input trigger pulse until RF output is settled within 30° of its final phase value

**For power levels between -10 dBm and +10 dBm

General Specifications

| | |
|------------------------|---|
| Remote Interface: | 10/100 BaseT Ethernet All parameters except AC power On/Off |
| Operating Temperature: | 0° C to 55° C, non-condensing humidity |
| Environmental: | Complies with MILPRF-28800F, Class 3 |
| Regulatory Approvals: | CE compliant |
| Power: | 90-253 VAC, 47-64 Hz 75 Watts nominal |
| Fuse Rating: | Internal to power supply |
| Weight: | 13.6 kg (30 lbs) |
| Dimensions: | 133mmH x 425mmW x 533mmD (5.25"H x 16.75"W x 21"D) Rack Mount Kit Standard |

Frequency Sweep Capabilities

- Start/stop/increment
- Step frequency sweep
- Frequency list up to 1024 frequencies

Inputs/Outputs

- SMA Female, RF Connector
- External step trigger input
- Phase lock status output
- 10 MHz reference output
- External reference input

Optional Pulse Modulation

| | |
|---------------|---|
| Select: | 3111P 3112P |
| Pulse Width: | 500 ns 0.1 to 0.5 GHz 100 ns 0.5 to 20.0 GHz |
| On/Off Ratio: | 70 dB (at +6 dBm CW output power) |
| Accuracy: | ±15 ns Pulse Width ±2 dB Power |
| Overshoot: | ±1 dB |

Specifications subject to change without notice.

The export of the equipment or components thereof, described herein, or export of the technical data associated with such items, may require the advance approval of the U.S. Government.



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