

FREQUENCY SYNTHESIZER

HIGH SPEED DIRECT ANALOG

Model: MW-15132HS-2-18-1Hz-00

NEW PRODUCT

2.0-18.0 GHz

FEATURES

- Low Spurious <-70dBc
- Harmonics -50dBc max.
- Noise Floor -140dBc
- Phase-noise -105 dBc/Hz@1KHz
- Ultra Wideband Frequency Coverage
- Settling Time < 200nsec
- Resolution 1Hz
- Phase and Frequency Coherent
- FM Modulations Built-in
- Front Panel Control: Option
- Compact Size: (DxWxH): 19"x19"x3U

**Elisra GSA Contract
#GS24F0072M**

elisra electronic systems ltd.
Microwave Division



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Model: MW-15132HS-2-18-1Hz-00

GENERAL DESCRIPTION

The MW 15132HS is a direct analog, full band synthesizer, designed for OEM's requiring phase and frequency coherent synthesis. With 200 nsec. settling time from any frequency to any frequency, this synthesizer covers the full frequency range of 2.0 to 18.0 GHz (Option: 0.5-18 GHz).

The product is based on a 13.0 to 14.6 GHz synthesizer with a 1 Hz frequency step and 200 nsec settling time that is converted to cover the entire 2-18 GHz frequency band.

The basic 100 MHz resolution can be selected within 50 nsec.

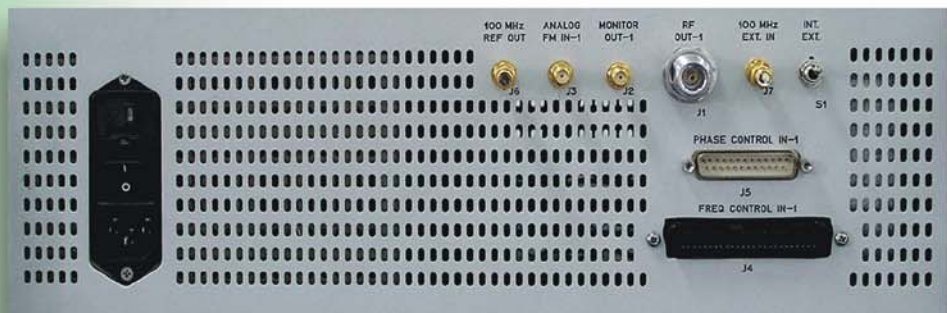
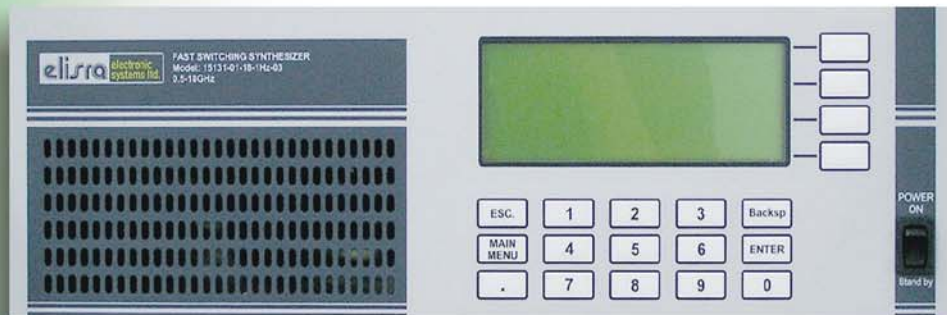
RESOLUTION

100 MHz
10 MHz
1 MHz and Below

SETTLING TIME

50 nsec
150 nsec
200 nsec

The Synthesizer unit includes a low noise 100 MHz Internal OCXO with an accuracy and temp. stability of ± 0.1 ppm. In addition, an external reference can be used for phase noise improvement, system coherence and user special requirements. The unique internal design of this synthesizer ensures 70 dBc minimum spurious rejection, and -140 dBc Noise Floor.



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ELECTRICAL SPECIFICATIONS

Frequency Range:

2.0 to 18.0 GHz

Frequency Step:

1 Hz

Settling Time:

200 nsec., max. @ 1 MHz steps and Below
150 nsec., max. @ 20 MHz steps
50 nsec., max. @ 100 MHz steps

Output Power:

+10 dBm min

Output Power Variation:

±3 dB typ.

Reference:

Internal Reference

- Frequency: 100 MHz
- Accuracy and Temp. Stability: ±0.1 ppm
(optional ±0.01 ppm)

External Reference

- Frequency: 100 MHz
- Input level: 7 dBm
- Impedance: 50 Ohm

Spurious:

-70 dBc max. up to ±100 MHz from carrier
-65 dBc typ. Full Band

Harmonics:

- 50 dBc max.

Phase Noise:

- 60 dBc/Hz max. @ 10 Hz
- 90 dBc/Hz max. @ 100 Hz
- 105 dBc/Hz max. @ 1 KHz
- 120 dBc/Hz max. @ 10 KHz
- 125 dBc/Hz max. @ 100 KHz
- 130 dBc/Hz max. @ 1 MHz
- 135 dBc/Hz max. @ 10 MHz

Noise Floor:

- 140 dBc

FM Modes:

"0" - CW
"1" - DC to 6 MHz
"2" - 3 KHz to 6 MHz

Wideband FM:

- Modulation Frequency: DC to 6 MHz
- Deviation: ±250 MHz max.
- Modulation Rate: 500 MHz / 1 usec
- Frequency Accuracy: ±10 MHz
- FM Chirp

Phase & Frequency Coherent:

Unconditional for all frequency steps

Narrowband FM:

- Modulation Frequency: 3 KHz to 6 MHz
- Deviation: ±50 MHz max.
Modulation rate: 100 MHz/1 microsec
- Frequency Accuracy: Same as the reference

Frequency Monitoring Output:

P out -20 dBc typical (relative to main output)

Frequency Control:

BCD (41 bit+stb)

AC Power:

110 or 220 VAC / 47-63 Hz
150 Watts

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature:

0°C to +50°C

Storage Temperature:

20°C to +85°C

MECHANICAL SPECIFICATIONS

Connectors:

- RF: N Type Female & SMA-F
- Frequency Control: D-Type, 50 Pin
- Digital FM and PM Control: D-Type, 25 Pin

Size (DxWxH): 19" x 19" x 3U

Wght: 40 lb. max. 20 Kg.

Options:

- High stability OCXC is available as part
of the mainframe rack ±0.01 ppm
- Phase Modulation: 5 Bit TTL
- Phase Modulation: Bi-Phase
- Front Panel Control
- Frequency Range 0.5-18 GHz
- Rack mounting brackets (slides)
- Frequency step 0.1 Hz

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MAINFRAME RACK

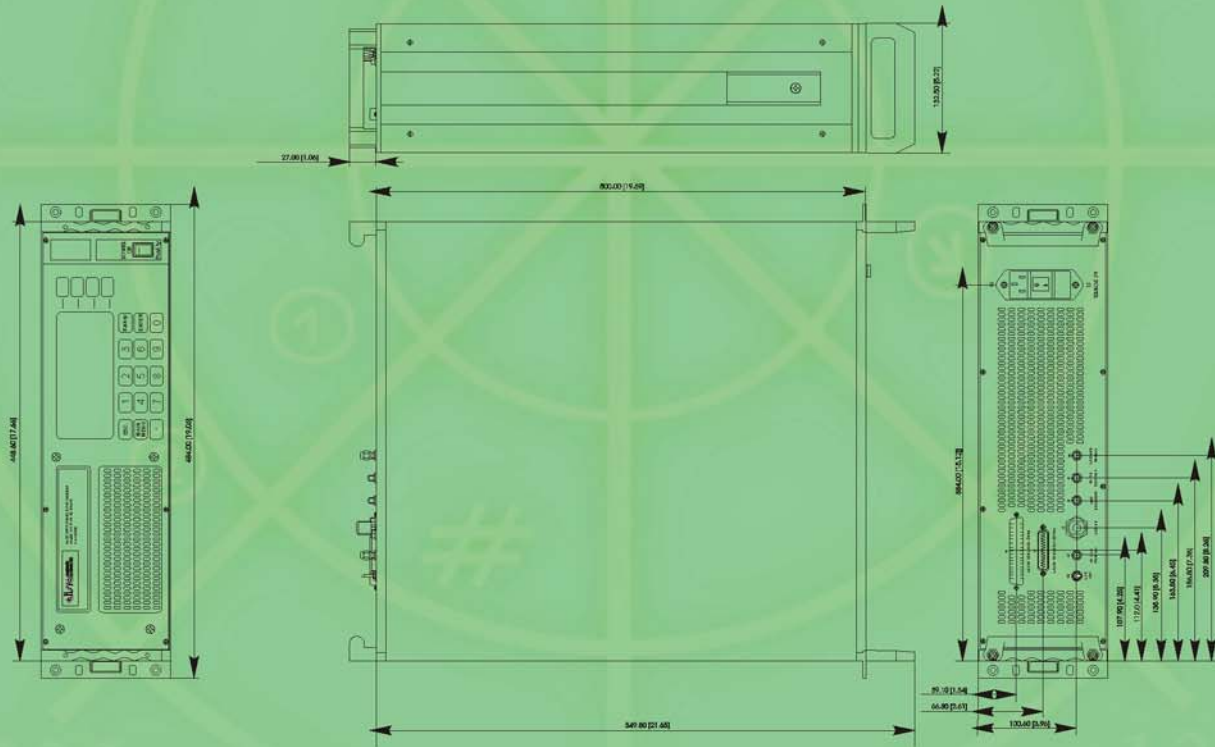
Model: MW 15132MR

The MW 15132MR is a 19" mainframe rack used for the housing and operation of one Elisra MW 15132P RF synthesizer modules. The rack is suitable for 110/220 VAC operation and includes: switching power supplies, reference oscillator and interfacing hardware.

The power supplies deliver +6.5V, -15V, and +15 to the synthesizer modules. Each rack contains a set of RF and Control connectors interfacing the synthesizer Module.

The set, used, to interface the RF module, includes a frequency control connector (D-type, 50 pin), an SMA connector for analog FM modulation input and an N-Type connector for main RF output.

The mainframe rack includes a low noise 100MHz Internal OCXO with accuracy and temp. stability of ± 0.1 ppm. An optional, low noise high stability (± 0.01 ppm) OCXO is available.



Elisra Microwave Company Division is a technology company with over 30 years of proven experience in supplying best-of-class components and subassemblies of wide range of RF, microwave and millimetres - wave applications.



Microwave Division

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Catalog Reference No. 45030512/C06