# DS INSTRUMENTS

30GHZ MIXER AND LO GENERATOR

Description
New REV 3 shipping now (March 2021)!

The **MX30000** is a wideband high-performance general purpose microwave double-balanced ~~mixer~~ with **integrated 18GHz – 30GHz Local Oscillator**. LO frequency can be set with front controls, USB commands, or the provided windows PC application. Using its ultra-low noise internal reference source, the LO signal has extremely low phase noise. The MX30000 makes a convenient **upconverter** or **downconverter** by eliminating the need for extra cabling and a separate bulky, expensive, high-frequency signal source.

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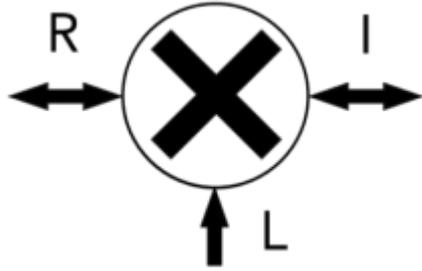
MX30000 Integrated-LO Wideband Mixer Features:
- USB-C powered from Laptop, battery-pack, Smartphone Charger, PC…
- Compact, rugged aluminum enclosure
- Adjustable LO power
- Bright and efficient OLED display
- Simple and effective control interface
- Industry standard virtual COM port serial commands
- Premium gold 50-ohm microwave SMA IF port
- **Precision 2.92mm** (40GHz rated) RF port *(SMA & 3.5mm compatible)*
- Internal precision reference frequency source
- LO reference frequency input and output MCX ports
- Voltage input monitoring
- Included PC control software

RF Hybrid Mixer Specs:
- Integrated **18 – 30GHz** programmable local oscillator
- IF range: **1MHz to 8GHz**
- RF range: **15 – 30GHz**
- High input P1dB > +**10 dBm**
- LO phase noise at 26GHz (10KHz offset): ~**85 dBc**
- Low conversion loss: **9-12dB**
- Max RF input power: +**17dBm**
- Typical IP3: 20dBm
- LO frequency step size: 10Hz
- Typical LO to RF isolation: 45dB
- Typical LO to IF isolation: 35dB
- Return loss: >10 dB typical
- Reference Frequency: ±280PPB 10MHz TCXO & 100MHz VCXO

Typical RF Mixing Applications:
- General microwave lab applications
- Receiver development
- VSAT
- Electronic countermeasure
- Communications applications
- Satellite uplinks / downlinks
- Radar systems
- Defense / electronic warfare
- Space applications
- mm wave technology
- 5G testing
- K-Band and Ka-Band research

Mechanical Specifications:
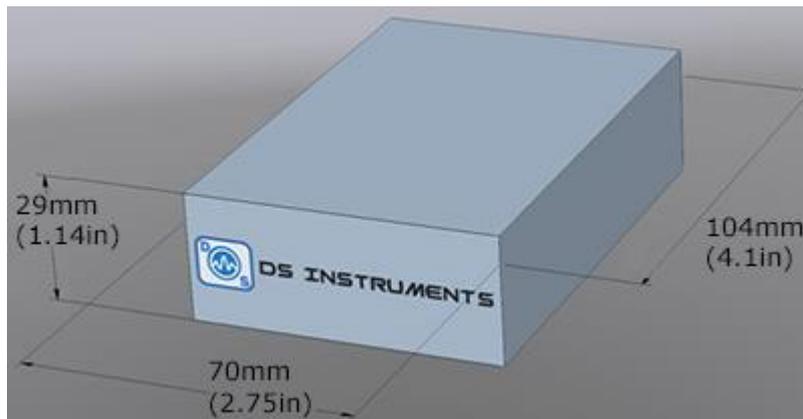
RF Performance:
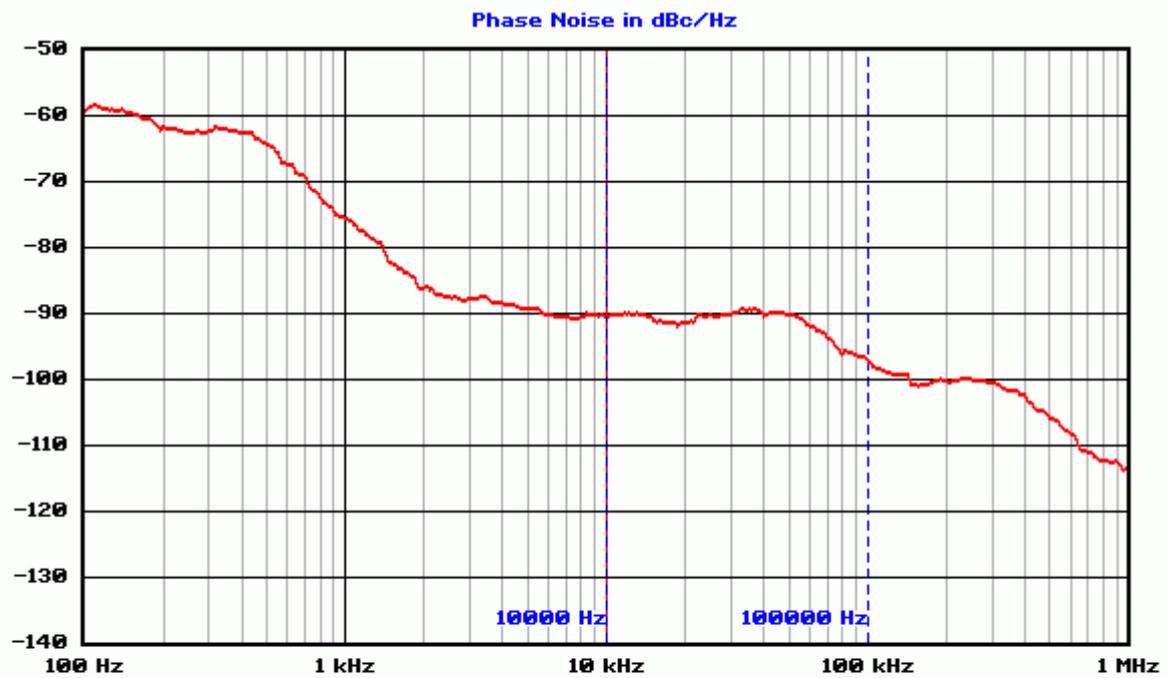
Trace	Carrier Hz	dBc/Hz at 10000 Hz	RMS Jitter
SG30000	23 000 000 000	-90.2	7.7E-014 s