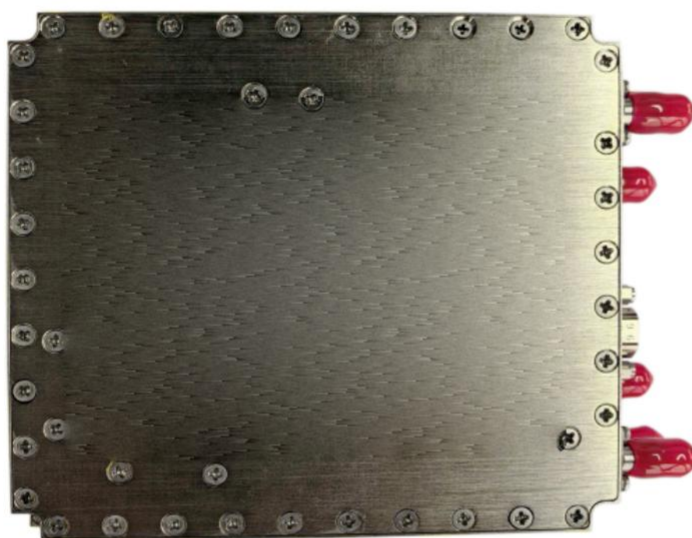


ULTRA-LOW PHASE NOISE FREQUENCY SYNTHESIZER



100 MHz to 40 GHz

Ultra-low phase noise
SPI control
0.1 Hz frequency step
Switching time: ≤ 20 ms typical
100 × 90 × 36 mm package
Weight: ≤ 1 kg

The OTFS35Y-40 is a ultra-low phase noise frequency synthesizer with an output frequency range of 100 MHz to 40 GHz. Control interface: SPI. Reference frequency: 10 MHz. The frequency step is 0.1 Hz. Frequency switching time: ≤ 20 ms typical. Output power: ≥ 9 dBm. Dimensions: 100 × 90 × 36 mm. Weight: ≤ 1 kg. Operating temperature: 0 to +50 °C.

TECHNICAL SPECIFICATIONS

OTFS35Y-40

Property	Value
Output frequency range	100 MHz-40 GHz
Frequency step	0.1 Hz
Frequency switching time	≤20 ms typical
Output power	≥9 dBm
Frequency stability	±0.2 ppm (internal reference)
Spurious level	≤-70 dBc typical; ≤-65 dBc maximum
Harmonic level	≤-20 dBc
Reference frequency	10 MHz
Reference input power	7 ±3 dBm
Reference phase noise	≤-150 dBc/Hz at 100 Hz offset; ≤-158 dBc/Hz at 1 kHz offset; ≤-160 dBc/Hz at 10 kHz offset; ≤-160 dBc/Hz at 100 kHz offset; ≤-160 dBc/Hz at 1 MHz offset
Supply voltage	+12 V ±0.5 V; maximum +15 V
Supply current	≤3.5 A startup; 3 A steady state
Control interface	SPI
Operating temperature	0 to +50 °C
Storage temperature	-20 to +70 °C
Dimensions	100 × 90 × 36 mm
Weight	≤1 kg
Clock output	100 MHz; ≥10 dBm; spurious level ≤-80 dBc; harmonic level ≤-30 dBc
Clock phase noise	≤-135/-167/-178/-180/-180 dBc/Hz at 100 Hz offset/1 kHz/10 kHz/100 kHz/1 MHz offsets
Sweep input	YIG sweep voltage input (VT)
RF output connector	Removable 2.92 mm female
Reference/clock/VT connectors	Removable SMA-K
Power/control connector	J30J-9-ZKP
Internal reference	Built-in low-phase-noise, high-stability crystal oscillator

TECHNICAL INFORMATION

OTFS35Y-40 | Phase Noise (dBc/Hz)

Output Frequency	100 Hz	1 kHz	10 kHz	100 kHz	1 MHz
1 GHz	≤-108	≤-139	≤-147	≤-148	≤-148
5 GHz	≤-101	≤-126	≤-134	≤-135	≤-144
10 GHz	≤-92	≤-122	≤-130	≤-130	≤-140
20 GHz	≤-86	≤-115	≤-123	≤-124	≤-132
40 GHz	≤-80	≤-108	≤-116	≤-117	≤-126

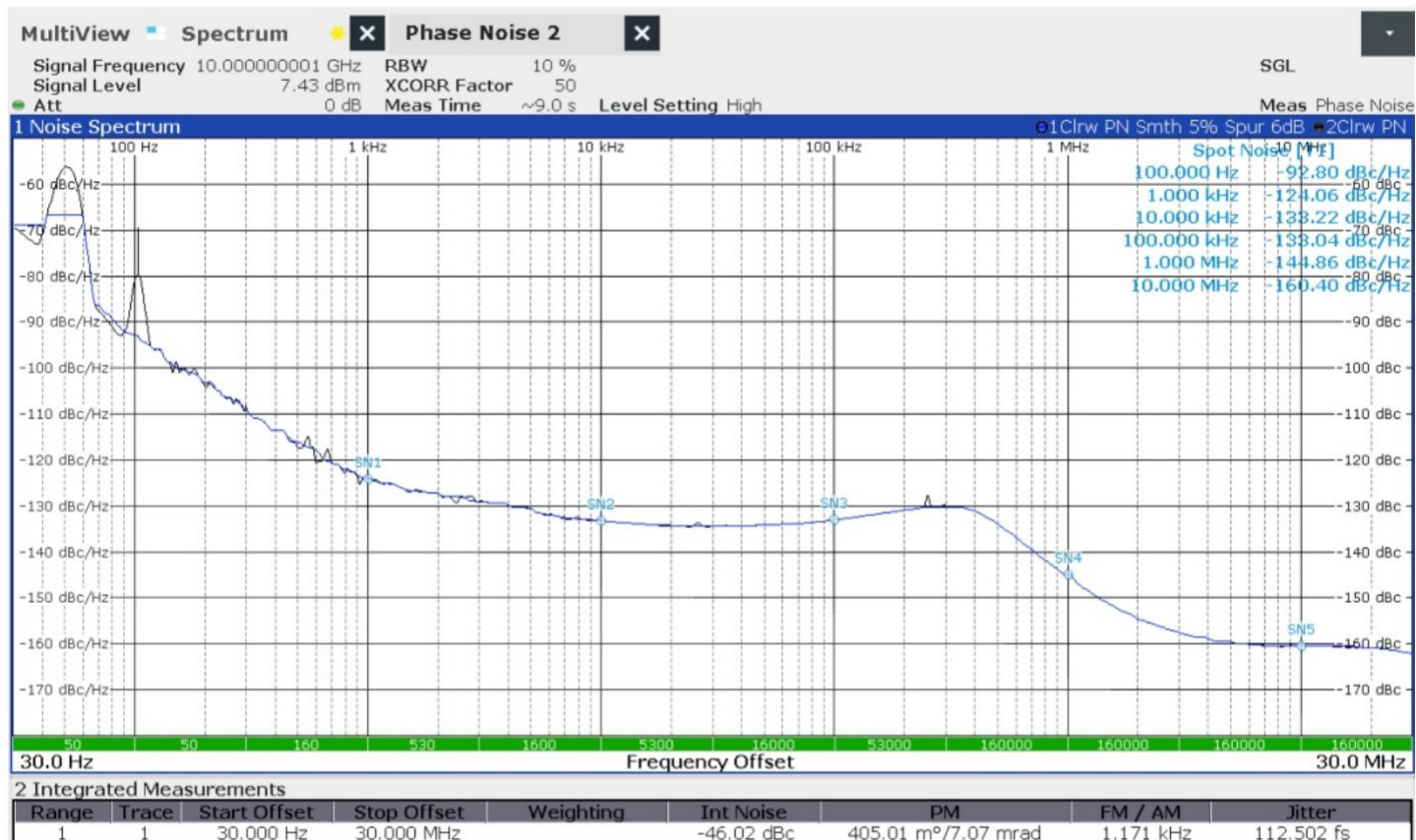
Column headings specify frequency offset from the carrier. Output frequency is listed in the first column. Values and limit signs follow the source tables.

Connector Definitions

Connector	Definition
10M in / 100M out / VT in	Removable SMA-K; pin diameter 0.38 mm
RF out	Removable 2.92 mm female; pin diameter 0.38 mm
Power/control	J30J-9-ZKP

MEASUREMENT CURVES

10 GHz Phase Noise Measurement



Source measurement example. Curves represent the illustrated test conditions.

MEASUREMENT CURVES

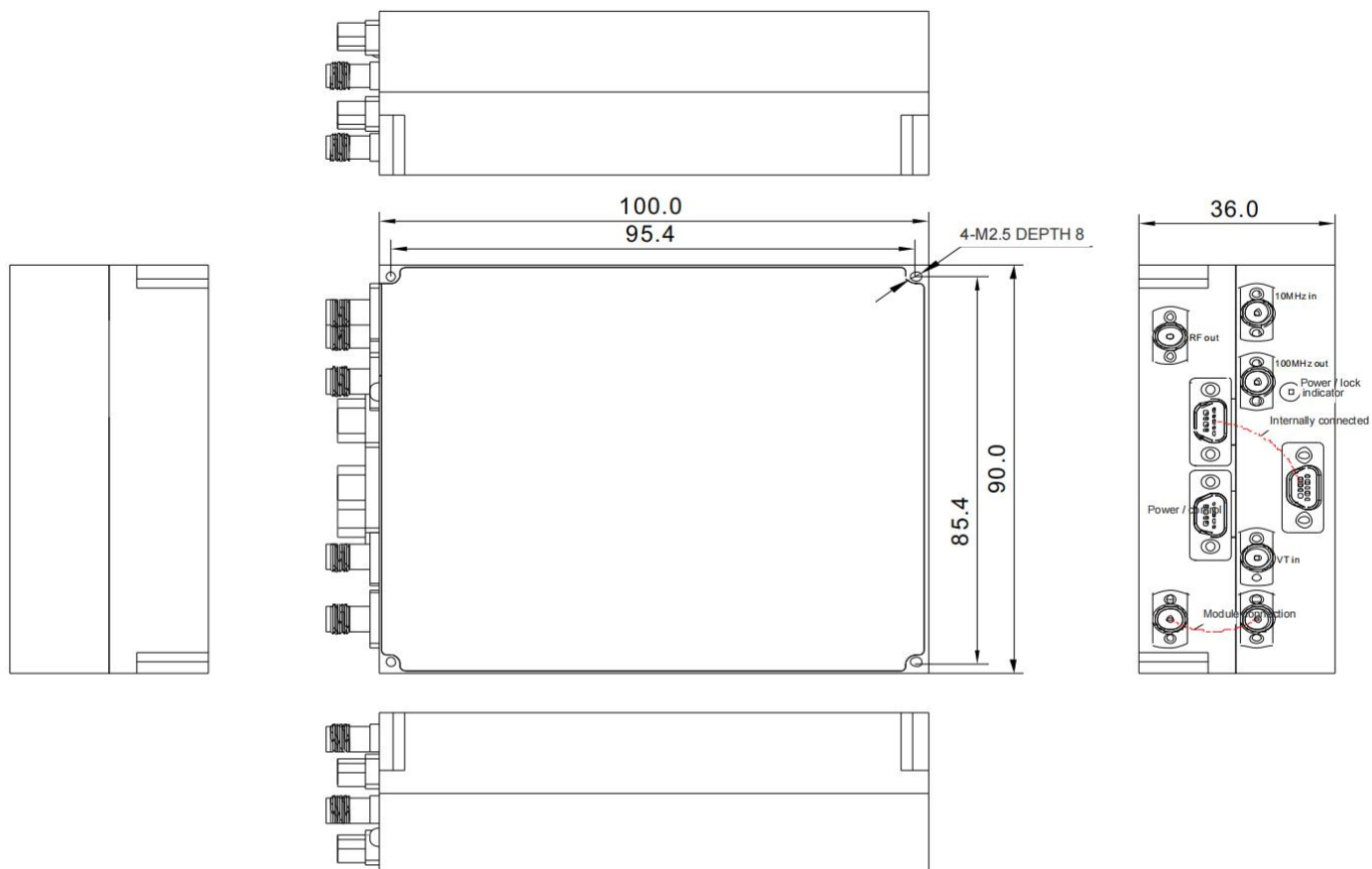
40 GHz Phase Noise Measurement



Source measurement example. Curves represent the illustrated test conditions.

OUTLINE DIMENSIONS

Mounting Dimensions



Dimensions in mm.

INTERFACES & PIN ASSIGNMENTS

J30J-9-ZKP Pin Assignments

Pin	Definition
1	+12 V supply
2	+12 V supply
3	GND
4	GND
5	LD: lock indication, high when locked
6	MOSI: SPI interface
7	MISO: SPI interface
8	SCK: SPI interface
9	LE: SPI interface