

YSG-140 Low Phase Noise Frequency Source

1 GHz to 52 GHz factory-set output with low spurious and harmonic suppression

At a Glance

YSG-140 provides a factory-set RF output anywhere from 1 GHz to 52 GHz for systems that need a stable compact source driven by a 10 MHz reference.

The platform supports YSG-140 and YSG-140L variants, with phase-noise data across 1, 5, 10, 20, and 44 GHz operating points.

A 154 x 96 x 33 mm enclosure, low power draw, and controlled harmonic and spurious behavior make the unit suitable for integration and bench validation workflows.



YSG-140 Low Phase Noise Frequency Source

Product Overview

YSG-140 is a compact low phase noise frequency source for fixed-frequency RF and microwave signal generation. The output frequency is configured at the factory for a specific value in the 1 GHz to 52 GHz range and is not field-adjustable after production.

The unit accepts a 10 MHz reference signal and provides RF, 100 MHz, reference-lock, and power status interfaces on the front panel.



Key Features

- **Wide Frequency Range**

Factory-set RF output supports configured frequencies from 1 GHz to 52 GHz.

- **Low Phase Noise**

Standard and low-noise variants provide tabulated phase-noise performance across five output-frequency points.

- **Reference Driven**

A 10 MHz reference input with +5 to +10 dBm input power supports synchronized system operation.

- **Controlled Spurious Output**

Spurious suppression is specified at ≥ 70 dBc, with harmonic suppression at ≥ 20 dBc.

- **Compact Hardware**

The 154 x 96 x 33 mm enclosure is suited to compact test systems and integration bays.

- **Low Power Consumption**

The unit operates from a +12 V supply with current consumption specified at ≤ 1.2 A.

General Specifications

Model	YSG-140	YSG-140L
RF Output		
Frequency Range	1 to 52 GHz	1 to 52 GHz
Output Power	≥ 10 dBm	≥ 10 dBm
Spurious Suppression	≥ 70 dBc	≥ 70 dBc
Harmonic Suppression	≥ 20 dBc	≥ 20 dBc
Output Phase Noise	See phase-noise tables	See phase-noise tables
Reference and 100 MHz Output		
Input Reference Frequency	10 MHz	10 MHz
Reference Signal Input Power	+5 to +10 dBm	+5 to +10 dBm
100 MHz Output Power	≥ 0 dBm	≥ 0 dBm
100 MHz Phase Noise @ 100 Hz	-125 dBc/Hz	-130 dBc/Hz
100 MHz Phase Noise @ 1 kHz	-155 dBc/Hz	-165 dBc/Hz
100 MHz Phase Noise @ 10 kHz	-172 dBc/Hz	-180 dBc/Hz
100 MHz Phase Noise @ 100 kHz	-174 dBc/Hz	-180 dBc/Hz
100 MHz Phase Noise @ 1 MHz	-176 dBc/Hz	-180 dBc/Hz
Power, Environment, and Mechanics		
Power Consumption	$\leq +12$ V / 1.2 A	$\leq +12$ V / 1.2 A
Operating Temperature	-20 to +50 deg C	-20 to +50 deg C
Storage Temperature	-55 to +85 deg C	-55 to +85 deg C
Dimensions	154 x 96 x 33 mm	154 x 96 x 33 mm

The output frequency is factory-set to a specific value between 1 GHz and 52 GHz and is not adjustable after production.

The default RF output is greater than 10 dBm. Other output power levels must be specified at configuration time.

For output frequency 16 to 32 GHz, the 1/2 harmonic limit is -60 dBc. For 32 to 52 GHz, the 1/4, 2/4, 3/4, and 5/4 harmonic limits are -60 dBc.

Phase Noise - YSG-140

Model	1 GHz	5 GHz	10 GHz	20 GHz	44 GHz
100 Hz Offset	108	-96	-88	-80	-72
1 kHz Offset	-133	-120	-113	-104	-97
10 kHz Offset	-135	-126	-120	-113	-106
100 kHz Offset	-135	-126	-120	-113	-106
1 MHz Offset	-140	-140	-140	-134	-130

Values are in dBc/Hz at the listed offset frequencies.

Phase Noise - YSG-140L

Model	1 GHz	5 GHz	10 GHz	20 GHz	44 GHz
100 Hz Offset	-120	-105	-99	-93	-86
1 kHz Offset	-145	-131	-125	-119	-112
10 kHz Offset	-154	-138	-132	-126	-119
100 kHz Offset	-156	-139	-134	-126	-119
1 MHz Offset	-174	-152	-148	-142	-135

Values are in dBc/Hz at the listed offset frequencies.

YSG-140L Performance Curve

The measured phase-noise plot shows a 10 GHz signal with 10.13 dBm signal level. The trace documents phase-noise behavior from 30 Hz to 30 MHz frequency offset.

The plot is included as a technical reference figure alongside the tabulated phase-noise data.



Ordering Information

Order format: YSG-140-XXXX-10. Use XXXX for the factory-set output frequency code.

Model selection: YSG-140 is the standard phase-noise variant; YSG-140L is the low phase-noise variant.

Frequency and power: output frequency is an integer multiple of the 10 MHz input reference within the configured 1 GHz to 52 GHz range. Default RF output power is 10 dBm; other output levels must be specified during configuration.

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Specifications subject to change without notice. Per AS/NZS standards.