

MINIATURE SYNTHESIZERS

QPmW's FSPLM family comprises a series of miniature frequency synthesizers operating up to 6 GHz across the whole frequency band. These modules perform high power output, low phase noise as well as high harmonic and spurious rejection.

The unit size is as small as $45.7 \times 37 \times 14.5 \text{ mm}^3$ and it is supplied with a field-replaceable SMA connector so as it can be assembled as a plug-in module in a PCB.

The output power level can be modified between -10 dBm and +20 dBm with 1-dB resolution in the whole frequency range. An enable input is provided to turn off the output signal without unlocking the PLL.

These synthesizers feature a highly stable internal TCXO reference and they can also accept externally applied references of 10 or 100 MHz, as an option.

Frequency and output power programming can be done either with parallel TLL signal or SPI. Frequency step can be as low as 1Hz depending on the model.

Supply voltage is +7V with a typical consumption of 6 W. Operating temperature range goes from -20 to 70°C.

Standard versions include 50MHz to 6 GHz output frequency. Custom frequency bandwidths are available under demand to improve the harmonic and sub-harmonic levels.

RF OUTPUT

FREQUENCY RANGE	50 MHz - 6 GHz
FREQ. STEP	1Hz (Model Dependent)
SWITCHING TIME	100 μ s
OUTPUT POWER	-10dBm to +20 dBm
POWER STEP	1dB
OUTPUT RETURN LOSS	14 dB
HARMONIC LEVEL	-20 dBc @ 1.5 to 3 GHz
SUBHARMONIC LEVEL	-20 dBc @ 1.5 to 3 GHz
SPURIOUS LEVEL	-60 dBc @ Integer frequencies

FREQUENCY STABILITY (Internal Reference)

TEMPERATURE	± 1 ppm
AGING	± 3 ppm (20 Years)

ELECTRICAL SPECIFICATION

SUPPLY VOLTAGE	+7VDC $\pm 10\%$
CONTROL SIGNALS	TTL Compatible /SPI

ENVIRONMENTAL RATING

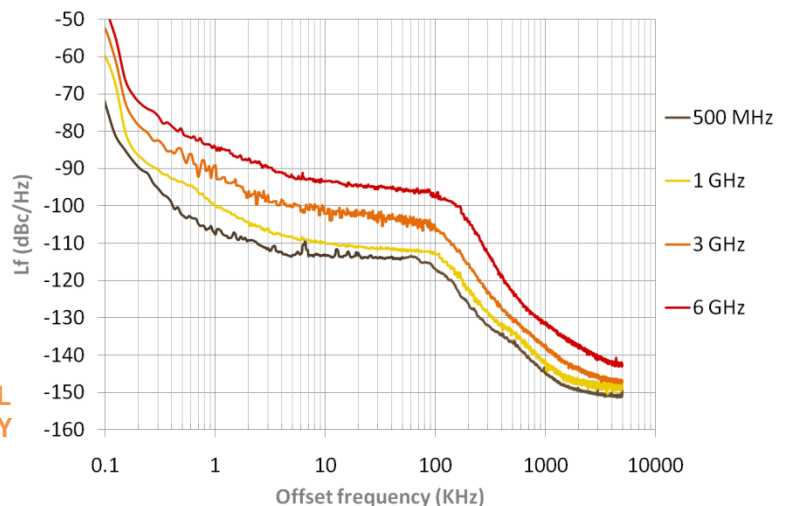
TEMPERATURE RANGE	-20°C TO 70°C (OPERATING)
	-40°C TO +85°C (STORAGE)

PHASE NOISE:

	.5 GHz	1 GHz	3 GHz	6 GHz	Unit
@1 KHz	-108	-102	-92	-84	dBc/Hz
@10 KHz	-112	-110	-101	-92	dBc/Hz
@100 KHz	-114	-112	-106	-95	dBc/Hz
@1 MHz	-146	-142	-137	-130	dBc/Hz
@5 MHz	-150	-148	-146	-142	dBc/Hz

POWER SPECTRAL DENSITY

TYPICAL PHASE NOISE



CASE Z.

