

# QFS-200-15000-2

## 0.2~15GHz

**Features:**  
 \* High Frequency Stability  
 \* Ultra Low Phase Noise

**Applications:**  
 \* Wireless  
 \* Transceiver  
 \* Laboratory Test  
 \* Radar

### Electrical

Output Frequency:	0.2~15GHz
Step:	0.1Hz
Switching Speed:	200μS max.
Output Power:	0±4dBm
Frequency Stability:	same as reference
Frequency Accuracy:	same as reference
Output Spurious:	-65dBc max.
Output Harmonic:	-5dBc max.
External Reference:	100MHz
Reference Power:	7±3dBm
Reference Phase Noise:	-155dBc/Hz max. @1kHz
Voltage:	+12±0.5V DC +15V DC max.
Current:	0.75A typ.
Control Type:	SPI
Impedance:	50Ω

		Output Phase Noise(dBc/Hz)			
		1GHz	5GHz	10GHz	15GHz
Offset	Freq.				
	100Hz	-105	-91	-85	-81
	1KHz	-127	-113	-107	-105
	10KHz	-135	-122	-116	-114
	100KHz	-135	-122	-116	-114
	1MHz	-135	-122	-116	-114

### Mechanical

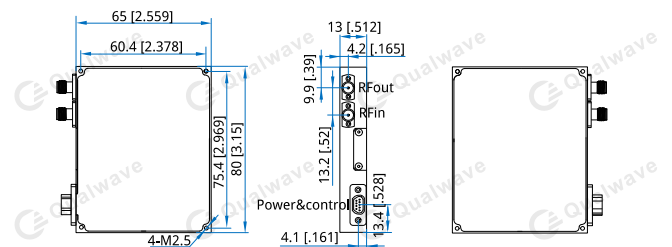
Size*1:	80*65*13mm 3.15*2.559*0.512in
RF Connectors:	SMA Female (removable)
Power & Control Interface:	J30J-9-ZKP
Mounting:	4-M2.5 Through hole

[1] Exclude connectors.

### Environmental

Operating Temperature:	-40~+70°C
Non-operating Temperature:	-55~+85°C

### Outline Drawings



Unit: mm [in]  
 Tolerance: ±0.2mm [±0.008in]

### Pin Numbering

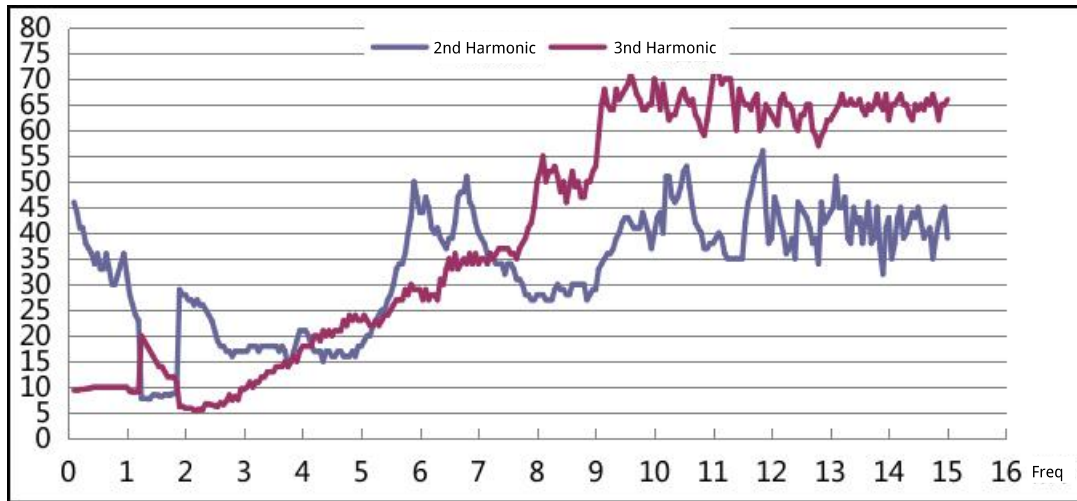
Pin	Function
1	+12V
2	+12V
3	GND
4	GND
5	LD (Locked: high voltage)
6	MOSI (SPI communication interface)
7	MISO (SPI communication interface)
8	SCK (SPI communication interface)
9	LE (SPI communication interface)

### How To Order

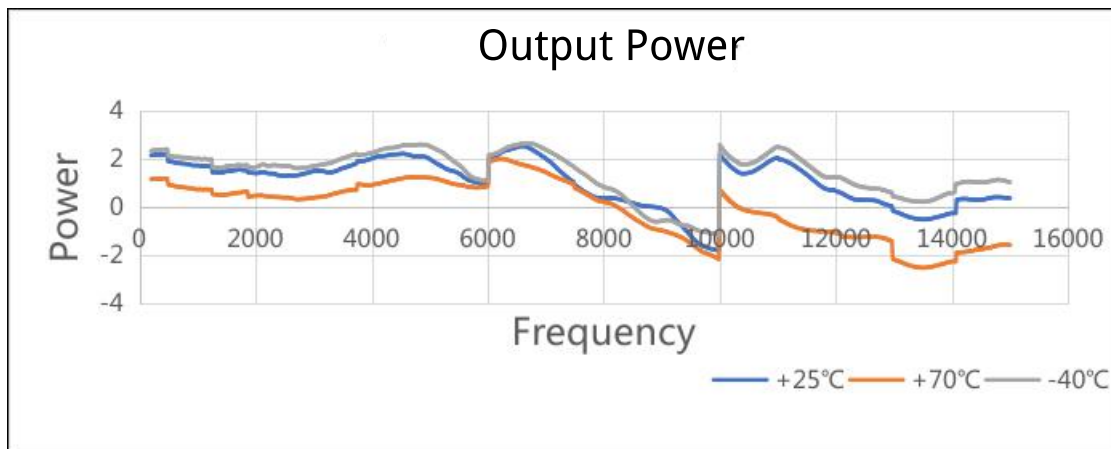
**QFS-200-15000-MS-2**

Customization is available upon request.

Typical Performance Curves:  
2&3rd Harmonic (dBc)

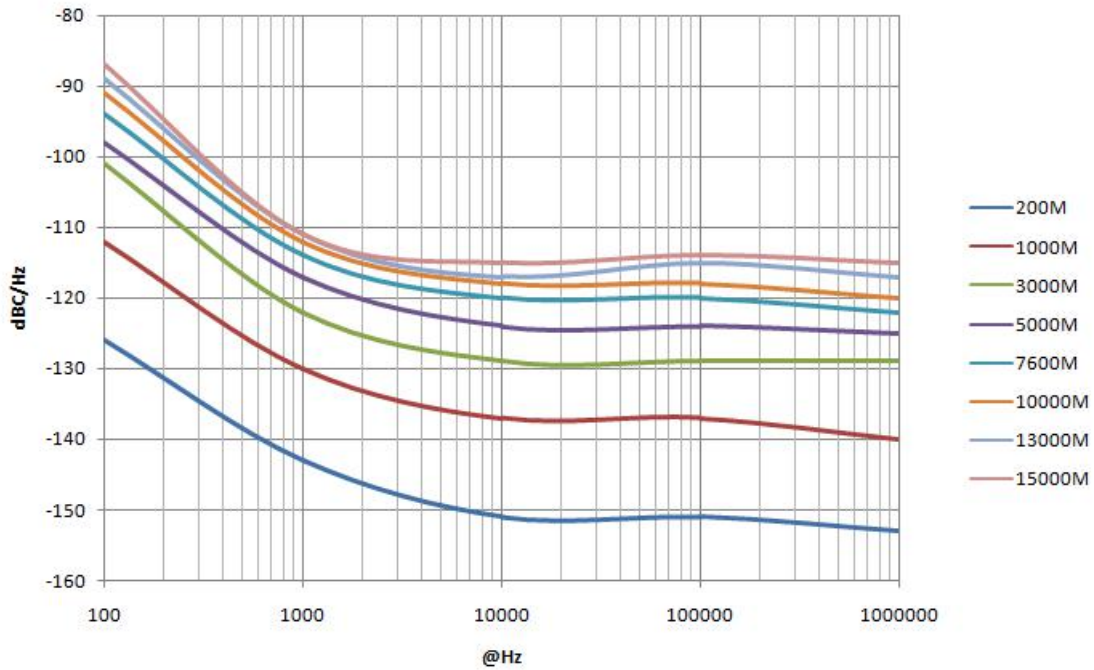


Output Power (dBm)



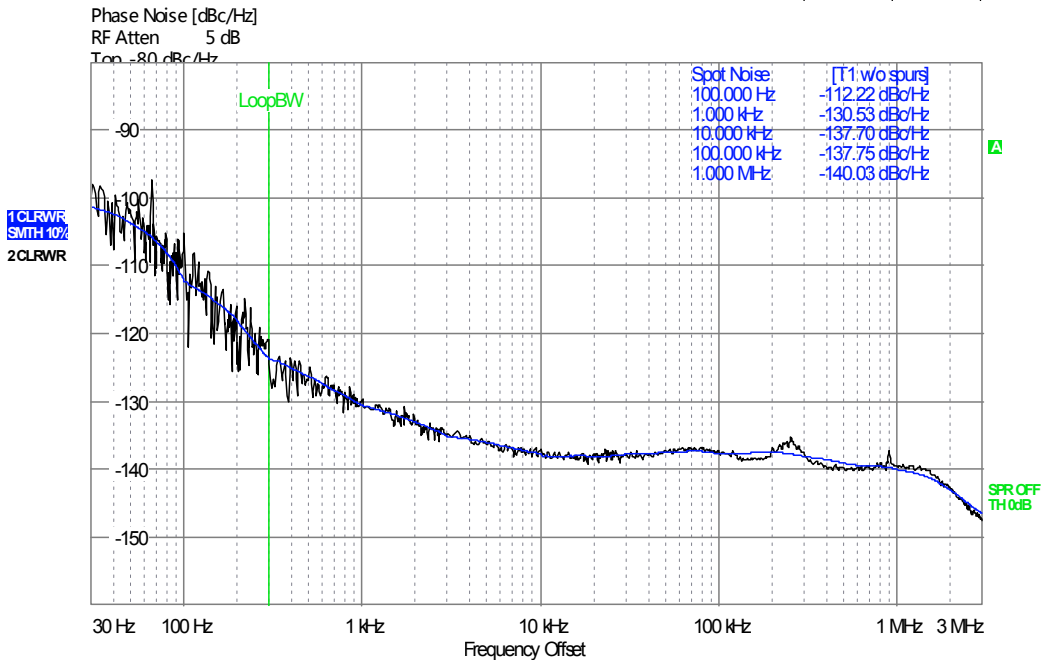
## Phase Noise (dBc)

### Phaseniose (TYP)



## 1GHz Phase Noise (dBc)

Settings		Residual Noise [T1 w/o spurs]		Phase Detector +40 dB	
Signal Frequency:	999.998210 MHz	Int PHN (30.0 .. 3.0 M)	-75.7 dBc		
Signal Level:	2.16 dBm	Residual PM	13.332 m°		
Cross Corr Mode	Harmonic 1	Residual FM	283.5 Hz		
Internal Ref Tuned	Internal Phase Det	RMS Jitter	0.0370 ps		



## 10GHz Phase Noise (dBc)

Settings		Residual Noise [T1 w/o spurs]		Phase Detector +20 dB	
Signal Frequency:	9.999982 GHz	Int PHN (30.0 .. 3.0 M)	-55.8 dBc		
Signal Level:	12.47 dBm	Residual PM	0.132 °		
Cross Corr Mode	Harmonic 1	Residual FM	3.208 kHz		
Internal Ref Tuned	Internal Phase Det	RMS Jitter	0.0367 ps		

