

Low-phase noise frequency synthesizer

YX-TFS21-22

Features:

1. Frequency Range : 50MHz to 22.6GHz
2. Size: 50*50* 13mm
3. Phase noise:-107dBc/Hz@1kHz (10GHz)
4. Control method: SPI control



Electrical performance parameters

External references

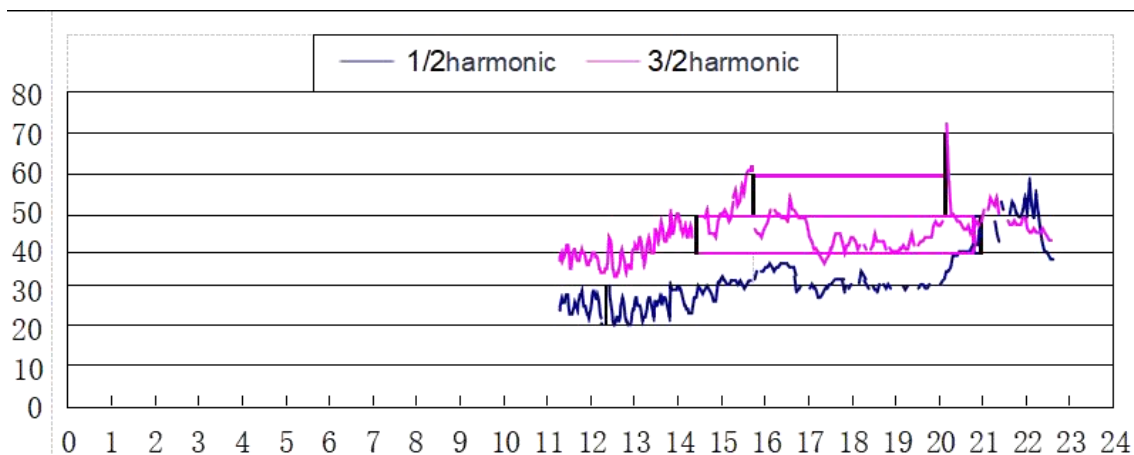
Input frequency	100MHz
Input power	7±3dBm
Frequency stability	Synchronized with external reference
Frequency accuracy	Synchronized with external reference
Phase noise	≤ -155dBc/Hz@1kHz
Input impedance	50Ω

Frequency output

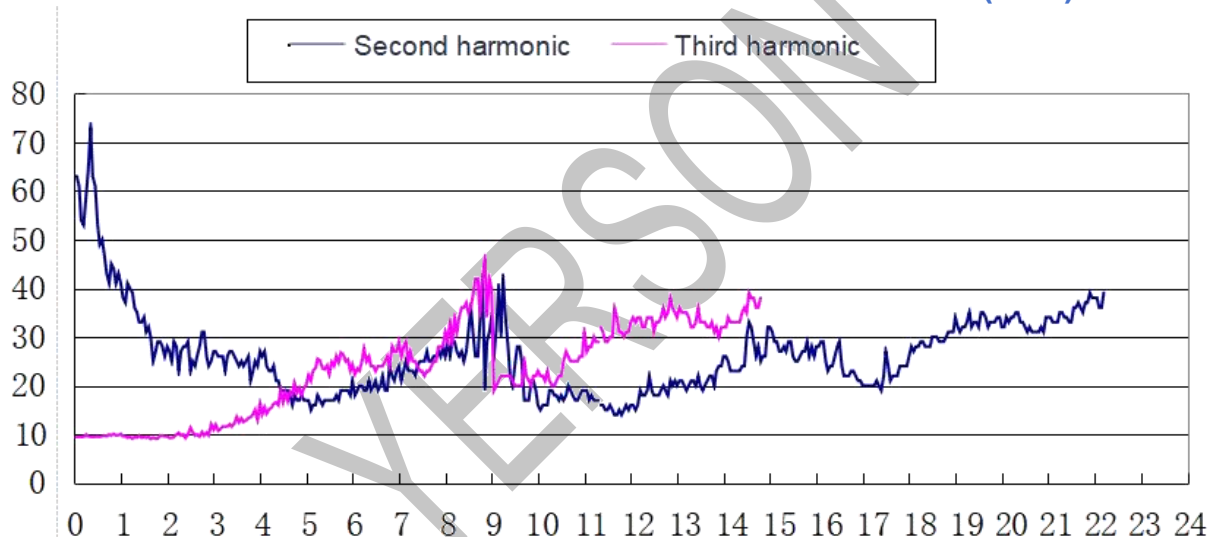
Frequency output	50~22600MHz
Frequency stepping	0. 1Hz
Hopping Time①	≤200 microseconds, ≤50 microseconds (Option 1)
Spurious	-70dBc (TYP)/ -65dBc(MAX)
Harmonics	≤-20dBc (1/2 and 3/2 harmonics from 11.3GHz to 22.6GHz), ≤ -5dBc
Output power	5±5dBm

Note: Consult the manufacturer before placing an order with a 50 us hopping time requirement.

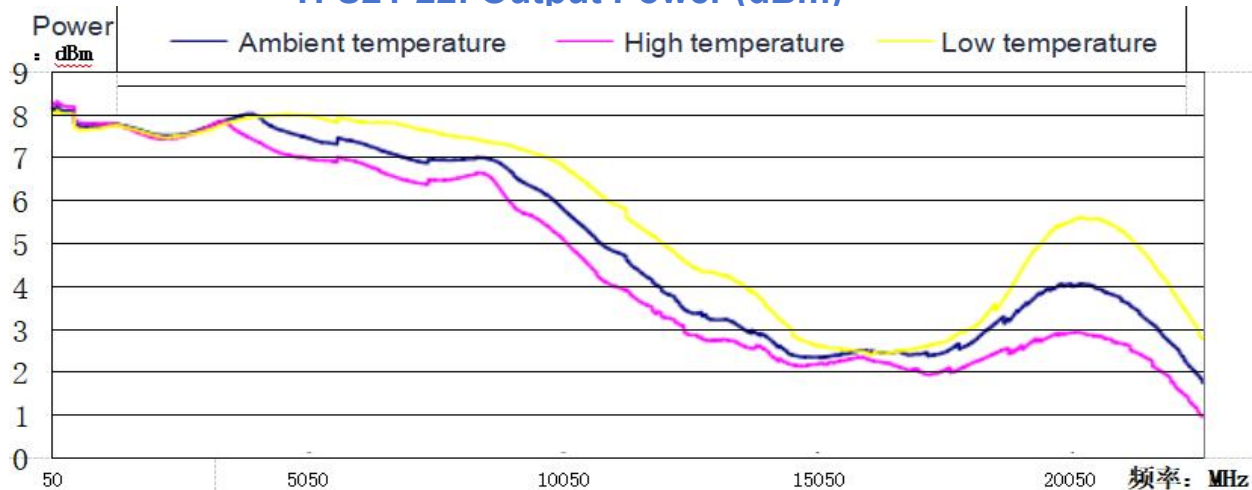
TFS21-22: 1/2 & 3/2 Harmonic (dBc)



TFS21-22: 2nd and 3rd Harmonic Distortion (dBc)



TFS21-22: Output Power (dBm)



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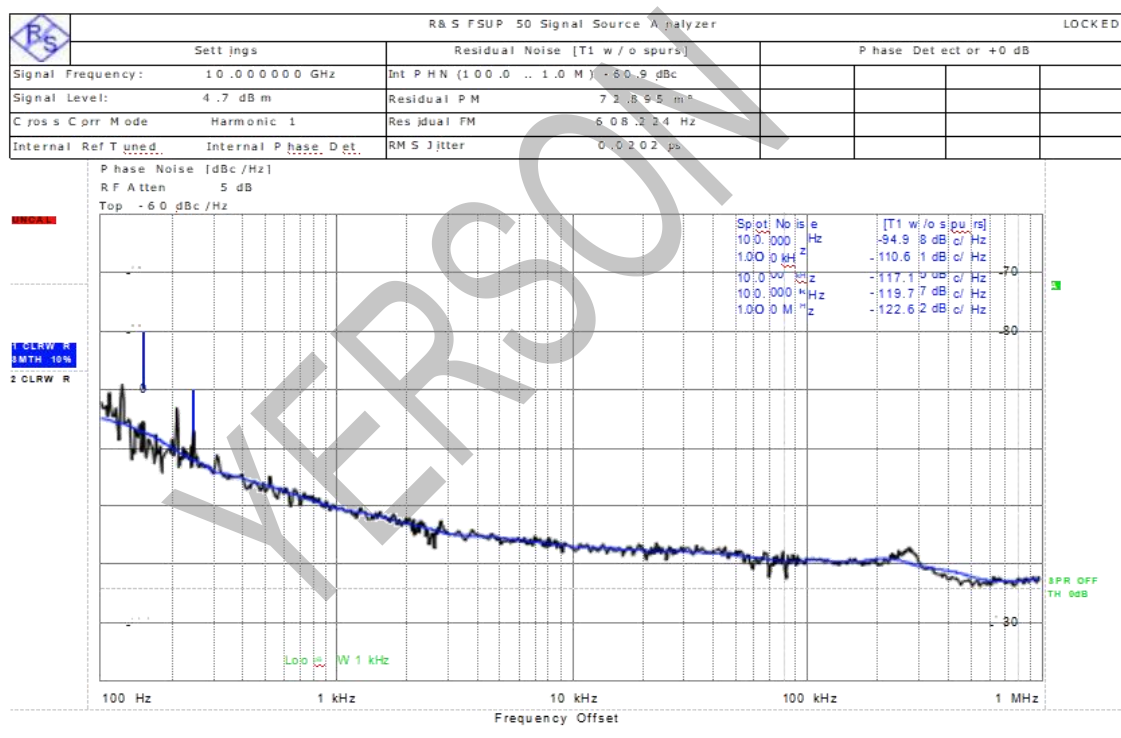
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Phase noise (dBc/Hz)

TFS21-22 Phase Noise

Frequency offset	1GHz	5GHz	10GHz	22.6GHz
100Hz	-105	-91	-85	-79
1kHz	-127	-113	-107	-101
10kHz	-135	-122	-116	-110
100kHz	-135	-122	-116	-110
1MHz	-135	-122	-116	-110

A Phase Noise Test Curve at 10GHz



Power Requirements

Working Voltage	+12±0.5V
Maximum voltage	+15V
Working current	0.5A(TYP)

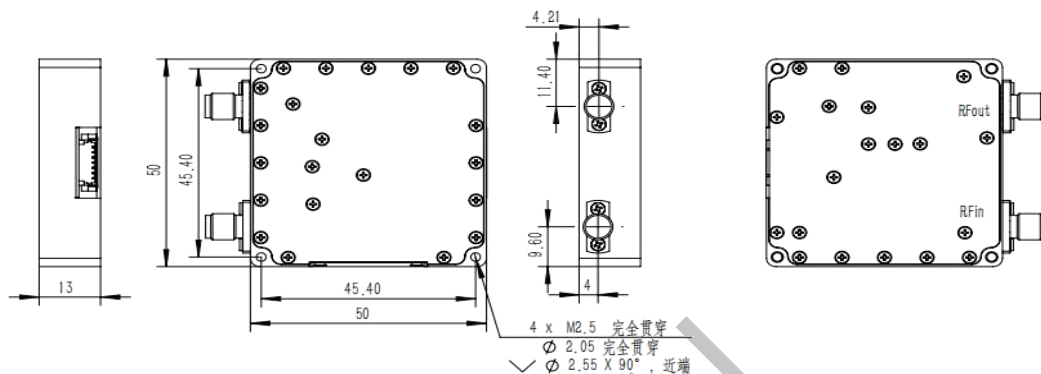
Temperature and Environmental Characteristics

Working temperature	-40° to +70°C
Storage temperature	-55° to +85°C

Outward appearance and volume

Volume	50×50×13
Weight	≤80g

Installation dimensions and connector definition



Connection Definition					
RF in		SMA-K (removable)			
RF out		SMA-K (removable)			
Power and Control		53261-0671-7P (1.25 pitch; single row 7-pin horizontal header)			
J30J Interface Definition					
1	+12V (Power Supply)	4	LE (SPI Communication Interface)	7	LD (Lock Indicator: High Level Locked)
2	GND (Ground)	5	MISO (SPI Communication Interface)		
3	MOSI (SPI communication interface)	6	SCK (SPI Communication Interface)		