

Frequency Synthesizer

0.2-20GHz/-40~+10dBm Output Power

Model: TLFS11-0220-M

TLFS11-0220-M is a frequency synthesizer, settable from 200MHz to 20 GHz. The settable output power range is from -40 to +10 dBm.

Features:

- Output Frequency range: 0.2-20GHz
- Output Power: -40~+10dBm
- Switching time: 200us Max
- 50 Ohm Matched Input / Output

Applications:

- Communication/Radar Systems
- Test Labs

Electrical Characteristics:

Parameter	Min	Typ	Max	Units
Input Frequency		10		MHz
Input Power	2	5	8	dBm
Input Reference Phase Noise		-155		dBc/Hz@1KHz
Output Frequency	0.2-20GHz			
Frequency Step	0.1@0.1-15GHz;0.2@15-20GHz			Hz
Switching Speed			200	us
Output Power	-40		+10	dBm
Power Step		0.1		
Output Power Flatness	$\pm 1@0\sim +10\text{dBm}; \pm 2@-40\sim 0\text{dBm}$			dB
Frequency Stability	2×10^{-7} (Synchronizes the external reference when external reference is used)			
Frequency Accuracy	2×10^{-7} (Synchronizes the external reference when external reference is used)			
Spurious		-70	-65	dBc
Harmonic(0dBm test)			-20	dBc
Modulation Depth		60(+10dBm test)		dBc
Modulated Pulse Width	100ns-10ms			
Modulated Cycle Time	500ns-10ms			
Control Model	RS232			

Electrical Characteristics:

Parameter	Min	Typ	Max	Units
Phase noise@1GHz			-105	dBc/HZ@100Hz
			-125	dBc/HZ@1KHz
			-135	dBc/HZ@10KHz
			-135	dBc/HZ@100KHz
			-135	dBc/HZ@1MHz
Phase noise@5GHz			-91	dBc/HZ@100Hz
			-113	dBc/HZ@1KHz
			-122	dBc/HZ@10KHz
			-122	dBc/HZ@100KHz
			-122	dBc/HZ@1MHz
Phase noise@10GHz			-85	dBc/HZ@100Hz
			-107	dBc/HZ@1KHz
			-116	dBc/HZ@10KHz
			-116	dBc/HZ@100KHz
			-116	dBc/HZ@1MHz
Phase noise@20GHz			-79	dBc/HZ@100Hz
			-101	dBc/HZ@1KHz
			-110	dBc/HZ@10KHz
			-110	dBc/HZ@100KHz
			-110	dBc/HZ@1MHz
DC Supply Voltage		12		V
DC Supply Current	1.6(Start up);1.3(Working)			A
Impedance		50		Ohms

Mechanical Specifications:

Parameter	Value	Units
RF Connector	3.5mm Female	
DC Connector	J30J-9ZKP	

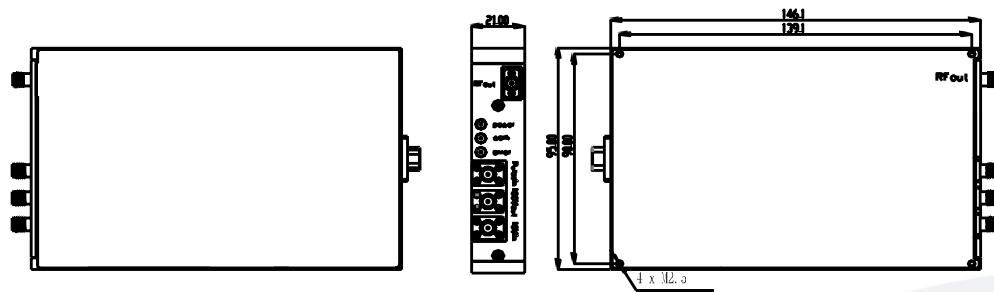
Absolute Maximum Ratings:

Parameter	Value
Supply Bias Voltage	+15 V
ESD sensitivity (HBM)	Class 0, passed 150V

Outline Drawing:

Unit:mm

Regulatory Compliance:



J30J-9ZKP			
Pin#	Function	Pin#	Function
1~2	+12V	8	RS232-RX
3~4	GND	9	RS232-TX
5~7	NC		



ESD Protection: Strictly adhere to ESD precautions to prevent electrostatic damage.

Environmental Conditions:

Parameter	Min	Typ	Max	Units
Operating Temperature	-45		+70	°C
Non-operating Temperature	-55		+85	°C
Relative humidity		95		%
Altitude	10,000			feet
Shock / Vibration(MIL-STD-810F)	10G rms (15 degree 2KHz) endurance			
Shock(non operating)	50G for 12msc half sin wave			

Ordering Information:

Base Number	Description	Revision
TLFS11-0220-M	Frequency Synthesizer, 0.2-22GHz, -40~+10dBm Output Power	Rev.1.1