

Block Up-Converter

53dBm Output Power

Model: TLBUC27G32G-200W-IP65

The TLBUC27G32G-200W-IP65 is a block up-converter operating in the Ka-band. It features an integrated local oscillator, with input IF frequency of 950-1950 MHz and output RF frequency of 27-32 GHz. Providing up to 200W of saturated output power, it also supports switchable functionality between internal and external references.

Features:

- IF Frequency: 950~1950 MHz.
- RF Frequency: 27-32 GHz.
- Saturated output power: 200W.
- External/Internal Reference Adaptive.
- Protection: Input IF overdrive, over/under voltage, overTEM, load VSWR protection

Applications:

- Communication/Radar Systems
- Test Labs

Electrical Characteristics:

Parameter	Min	Typ	Max	Units
IF Frequency Range	950		1950	MHz
IF Input Power		-2		dBm
IF to RF Gain		55		dB
RF Output Frequency Range	27		32	GHz
Output Power	53			dBm
Gain Adjustment Range	20			dB
Gain Adjustment Step		0.5		dB
Linear Gain Flatness		±3		dB
Spurious@Pout=53dBm			-55	dBc
Harmonics@Pout=53dBm			-55	dBc
Two-tone intermodulation (5MHz space)	-25 dBc max at total output power 50dBm			
Phase Noise	@100Hz		-70	dBc
	@1KHz		-85	
	@10KHz		-92	
	@100KHz		-105	
VSWR		1.5	2	:1
AC Supply Voltage @single-phase (50-60Hz)	180	220	260	V AC
Power Consumption@Psat			2.5	KW

Mechanical Specifications:

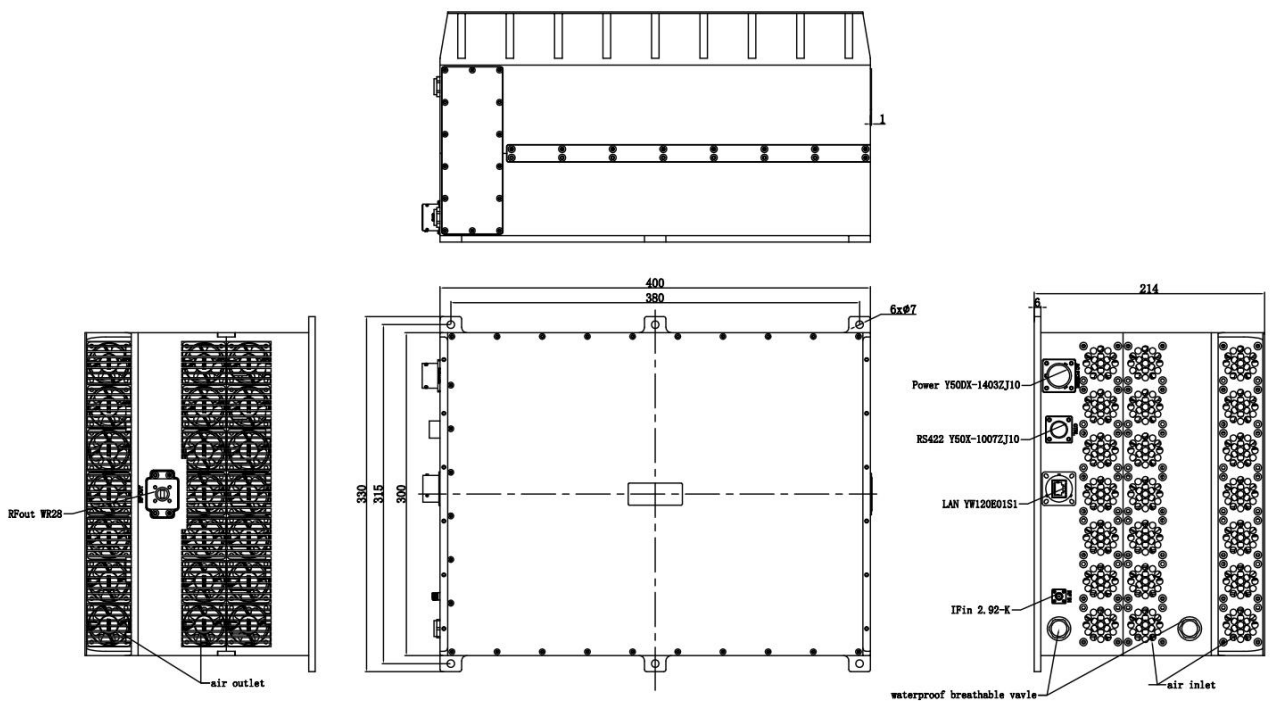
Parameter	Value	Units
RF Input/Output Connector	2.92mm Female/WR28	
M&C connectors	Serial:Y50X-1007; Ethernet: RJ-45	
AC power connector	Y50DX-1403	
Ingress Protection Grade	IP-65	
Size	300*214*400	mm
Weight	≤40	Kg

Absolute Maximum Ratings:

Parameter	Value
IF Input Power	+10 dBm
ESD sensitivity (HBm)	Class 0, passed 150V

Outline Drawing:

Unit:mm



Key Features:

Parameter	Advantages
Protection functions	1,Over TEM: $\geq+65^{\circ}\text{C}$ shutdown 2,Over DC voltage: $\geq 29\text{V}$ shutdown 3,Under DC voltage: $\leq 20\text{V}$ shutdown 4,Input IF overdrive: $\geq 10\text{dBm}$ shutdown 5,Load VSWR protection:The unit disables RF when reverse power exceeds the safe level of 3:1 VSWR or reduces power by 6dB
Monitoring functions	1,Input voltage 2,Input current 3,IF input power 4,Output VSWR 5,Output/reverse power 6,Status of gate voltages 7,Temperature
Cooling system	Built in Cooling system,forced air cooling

Environmental Conditions:

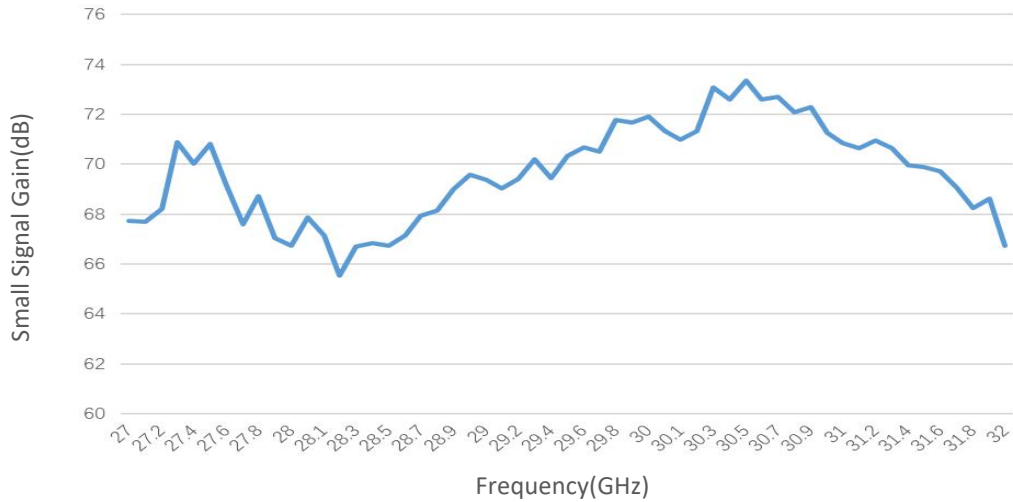
Parameter	Min	Typ	Max	Units
Operating Temperature	-20		+60	$^{\circ}\text{C}$
Non-operating Temperature	-40		+70	$^{\circ}\text{C}$
Relative humidity		95		%
Altitude	3,000			meters
Shock / Vibration(MIL-STD-810F)	10G rms (15 degree 2KHz) endurance			
Shock(non operating)	50G for 12msc half sin wave			

Ordering Information:

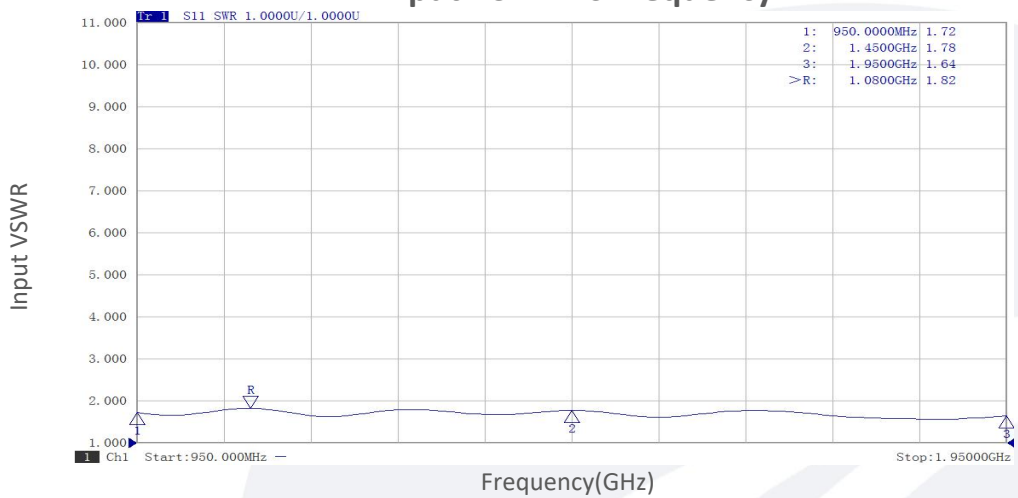
Base Number	Description	Revision
TLBUC27G32G-200W-IP65	Block Up-Converter, IF frequency range:950-1950MHz; RF output frequency range: 27-32GHz; 200W output power	Rev.1.1

Typical Performance Data:

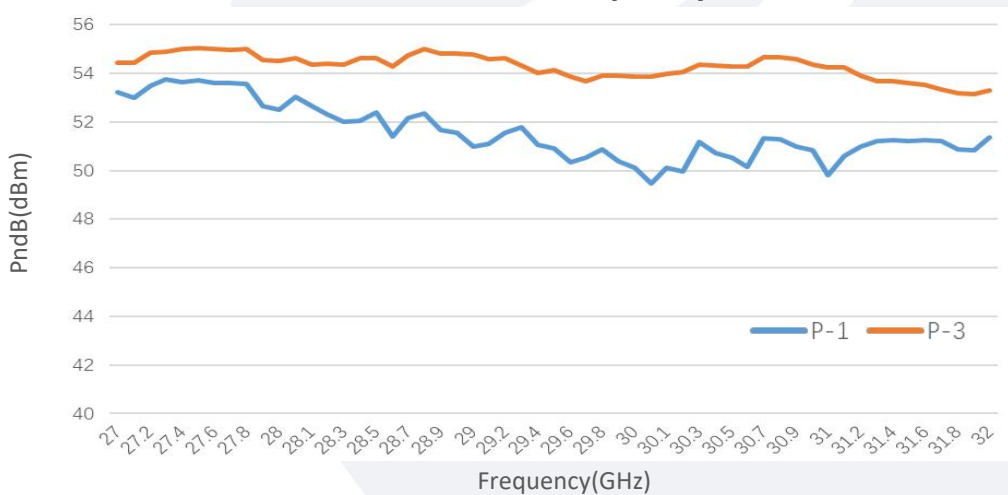
Small Signal Gain@Pin=-35dBm vs Frequency



Input VSWR vs Frequency

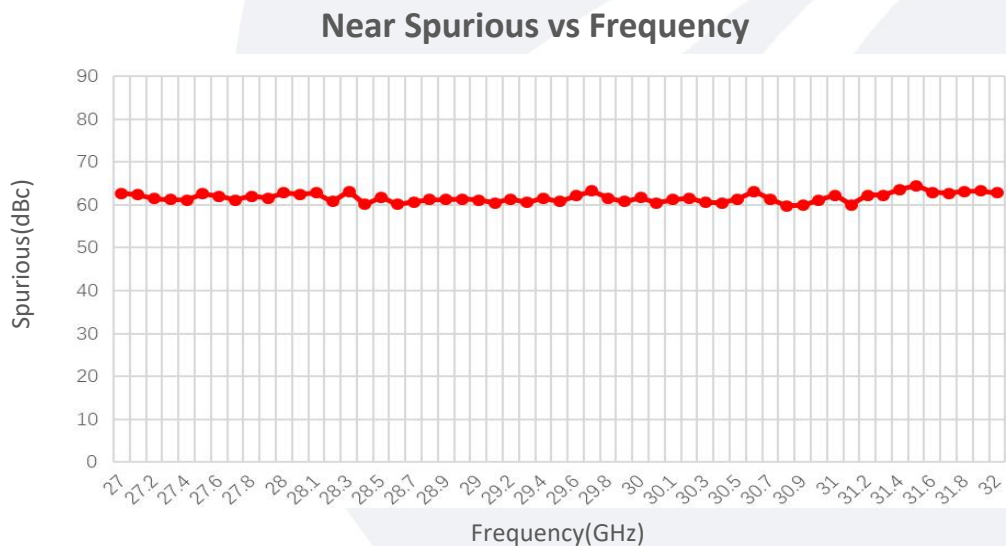
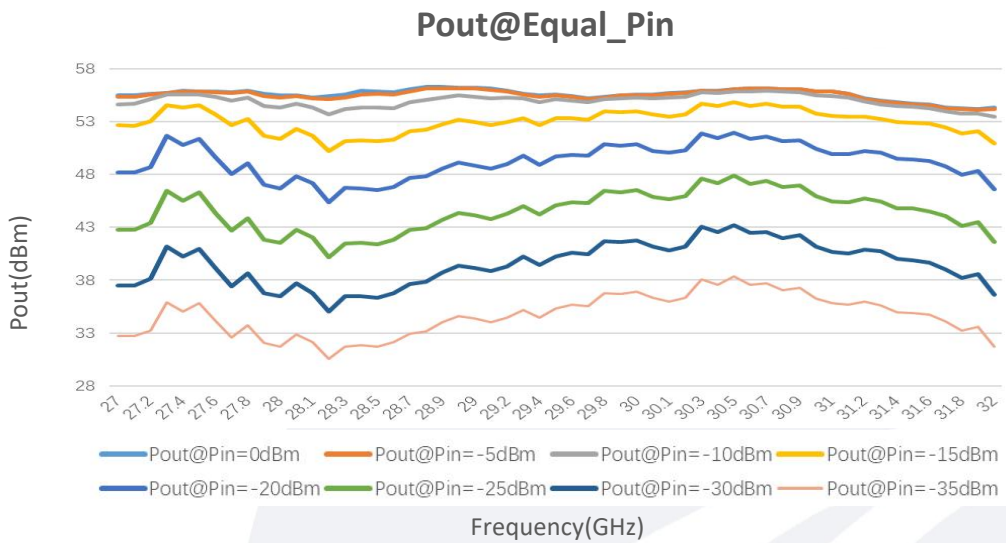
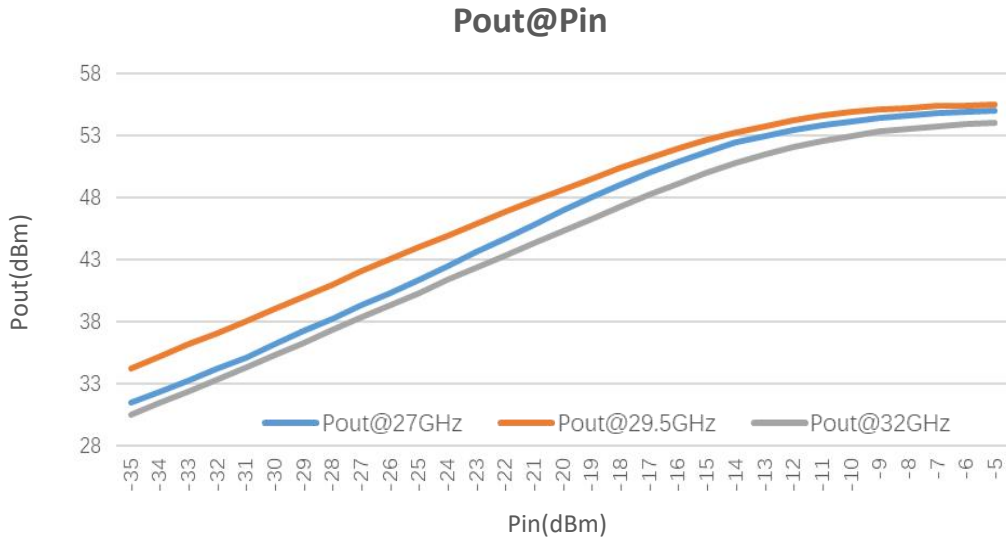


PndB vs Frequency



Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

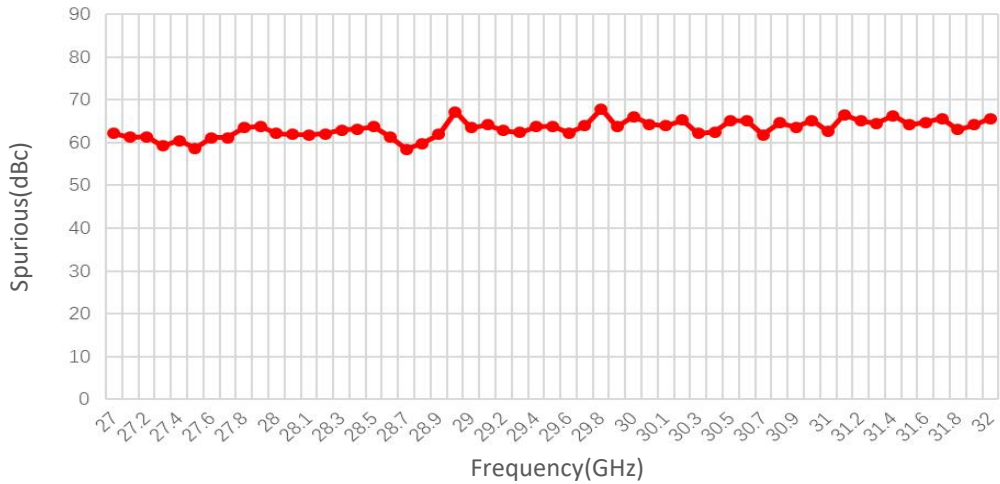
Typical Performance Data:



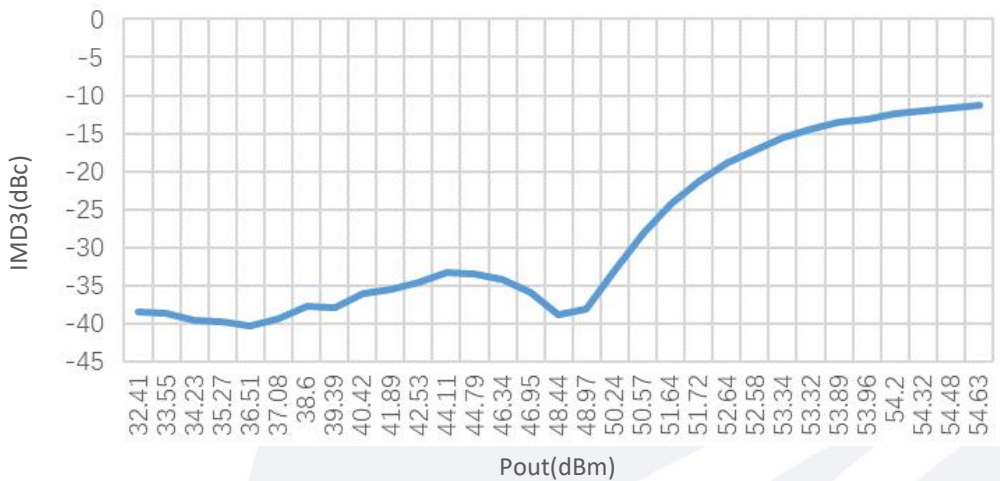
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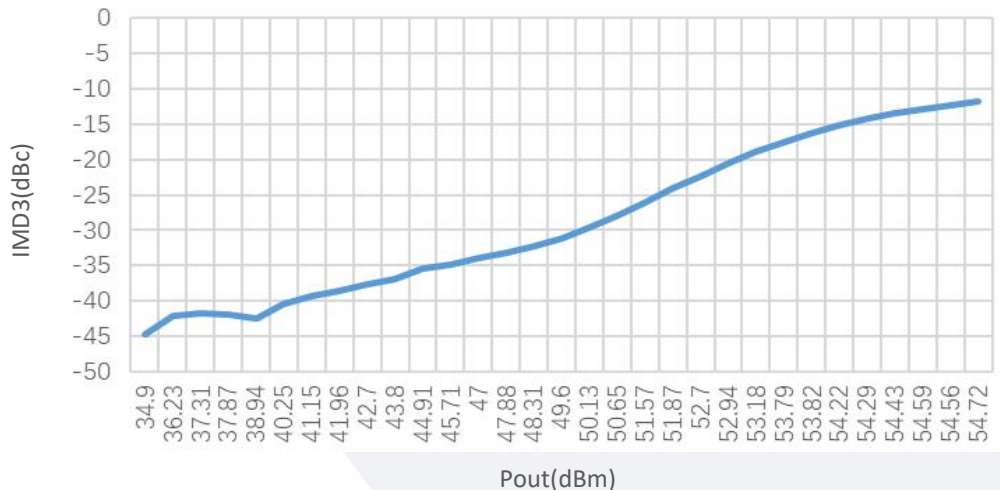
Far Spurious vs Frequency



IMD3@27GHz



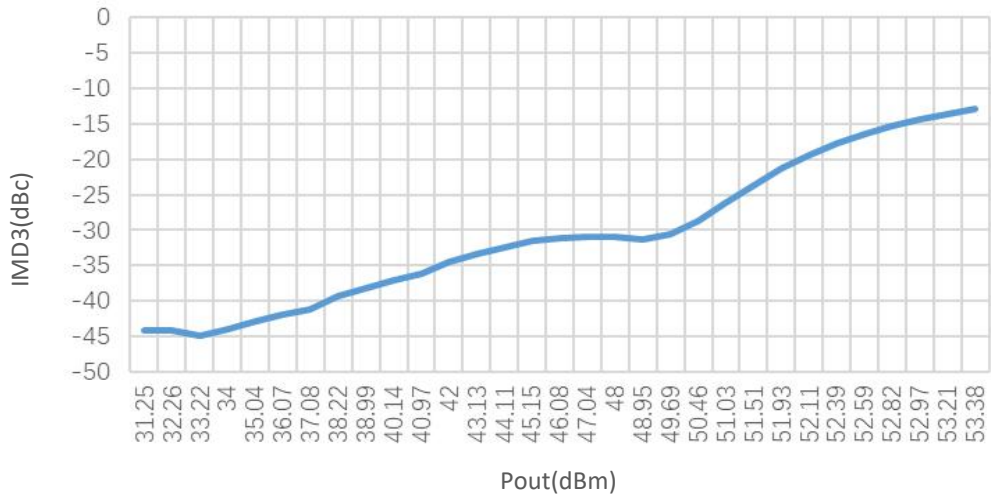
IMD3@29.5GHz



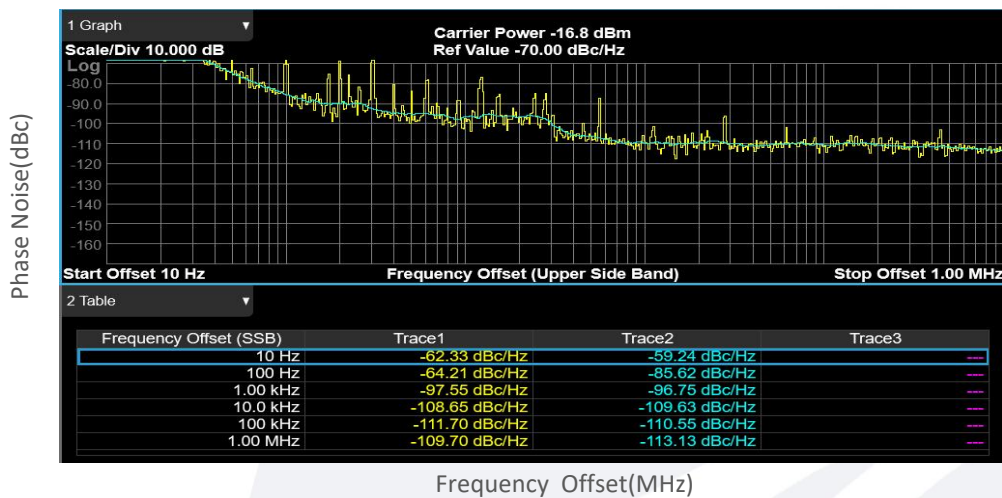
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Typical Performance Data:

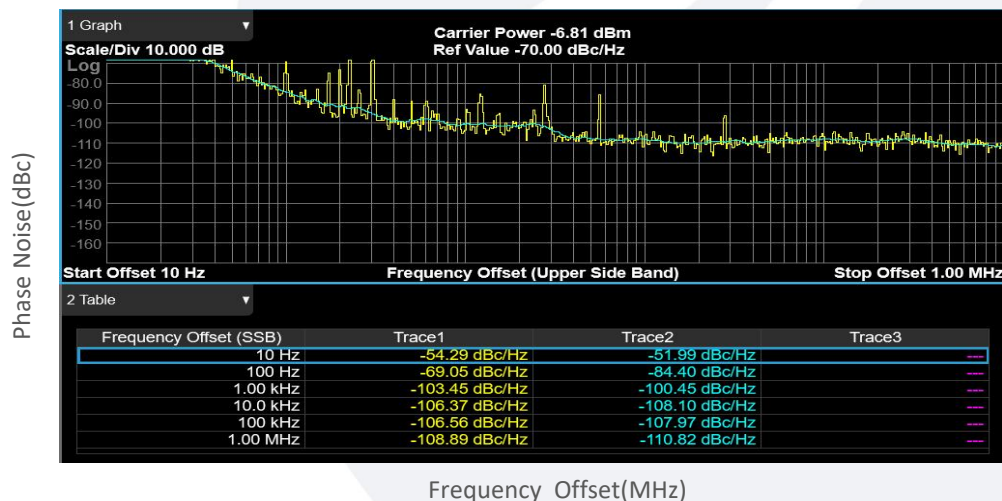
IMD3@32GHz



Phase Noise@27GHz



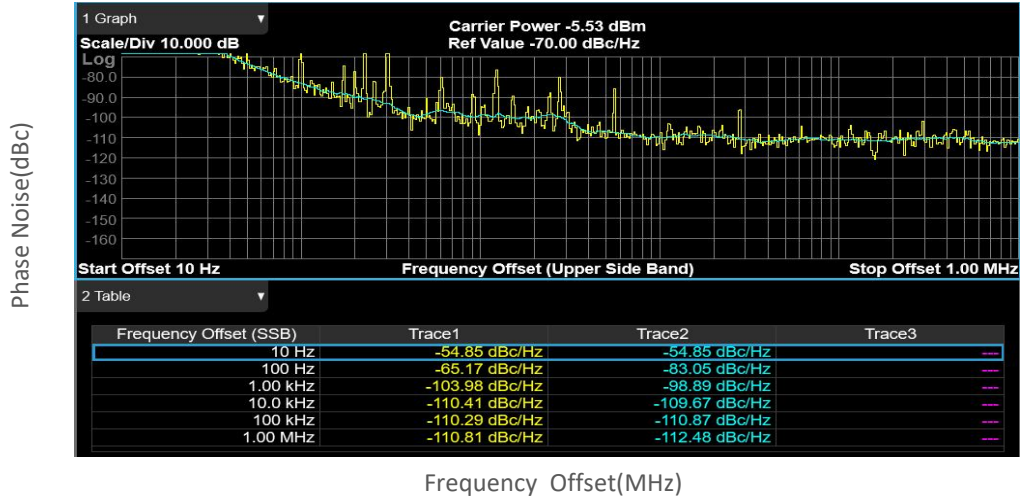
Phase Noise@29.5GHz



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Typical Performance Data:

Phase Noise@32GHz



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