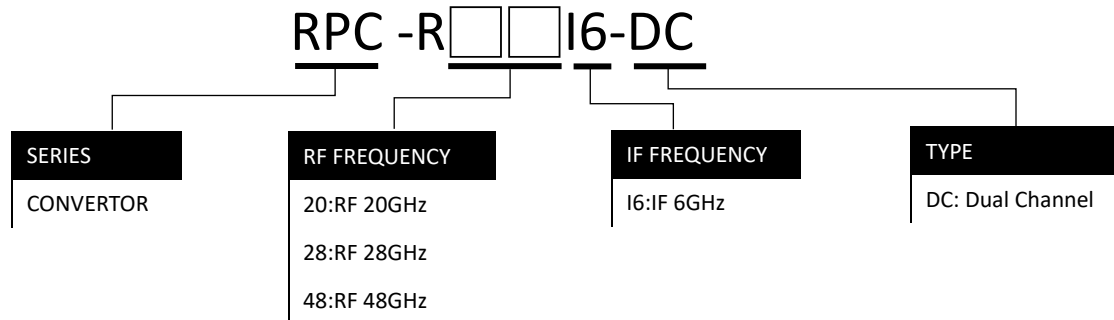


PART NUMBER DESCRIPTION



PRODUCT OVERVIEW

Rapidtek UDC Module is dual-channel with an integrated mixer & an internal local oscillator (LO). It can support Wifi6E, Wifi7, UWB Non Signaling & Signaling test.

FEATURE SPECIFICATIONS

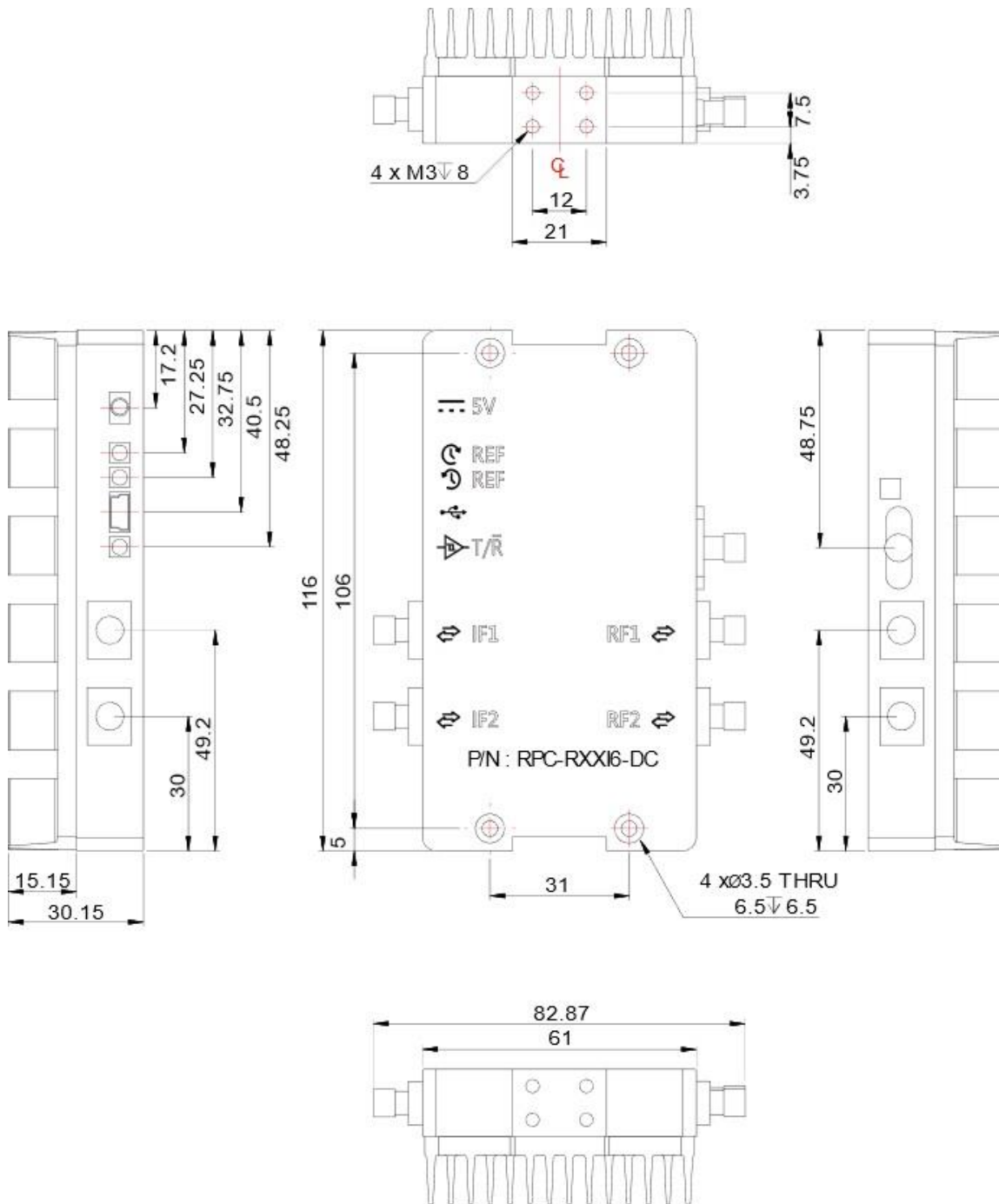
Rapidtek PN.		RPC-R20I6-DC	RPC-R28I6-DC	RPC-R48I6-DC
ITEM	CONDITION	APPEARANCE		
Power Supply Voltage	4.8V-5.5VDC	NA		
Power Supply Current	3A	NA		
Power Consumption	15W	NA		
Reference Clock Type	10MHz	MMCX(F)		
Control I/O Type	NA	Mini-USB 2.0(F)		
Trigger Signal(T/R) Type	High Level : 1.8V~3.3V Low Level : 0~0.8V	MMCX(F)		
Wight	350g	NA		
IF Port Type	NA	2.92mm(F)		
RF Port Type	NA	2.92mm(F)	2.4mm(F)	



FREQUENCY CONVERSION SPECIFICATIONS

PRODUC NAME			RPC-R2016-DC		RPC-R2816-DC		RPC-R4816-DC	
ITEM	CONVERSION TYPE		UP	DOWN	UP	DOWN	UP	DOWN
	UNIT							
IF Frequency	GHz	MIN.	1	1	2	2	2	2
		TYP.	--	--	--	--	--	--
		MAX.	6	6	6	6	6	6
IF Return Loss	dB	MIN.	--	--	--	--	--	--
		TYP.	10	10	10	10	10	10
		MAX.	--	--	--	--	--	--
RF Frequency	GHz	MIN.	2	2	20	20	30	30
		TYP.	--	--	--	--	--	--
		MAX.	20	20	30	30	48.2	48.2
RF Return Loss	dB	MIN.	--	--	--	--	--	--
		TYP.	10	10	10	10	10	10
		MAX.	--	--	--	--	--	--
LO Frequency	GHz	MIN.	1	1	18	18	28	28
		TYP.	--	--	--	--	--	--
		MAX.	14	14	24	24	42.2	42.2
Conversion Gain	dB	MIN.	--	--	--	--	--	--
		TYP.	10	8	18	0	20	10
		MAX.	--	--	--	--	--	--
Input Power	dBm	MIN.	--	--	-	--	--	--
		TYP.	--	--	--	--	--	--
		MAX.	-5	-10	-5	0	5	5
OP1dB	dBm		10	--	8	--	7	--
IP1dB	dBm		--	-5	--	0	--	0
LO Initial Accuracy	Hz		±100		±100		±100	
Gain Variation	dB		≤4		≤4		≤4	
Impedance	Ω		50		50		50	
Frequency Step	MHz		1		4		4	

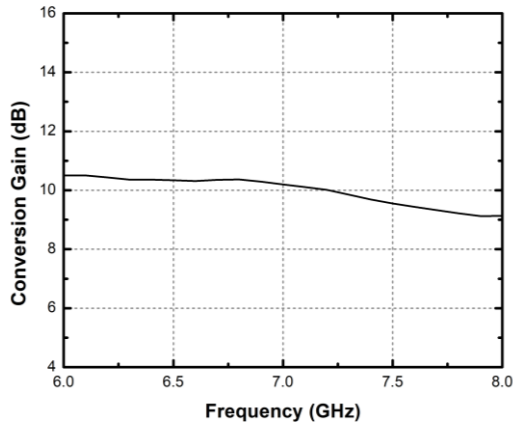
EXTERIOR DIMENSION (mm)



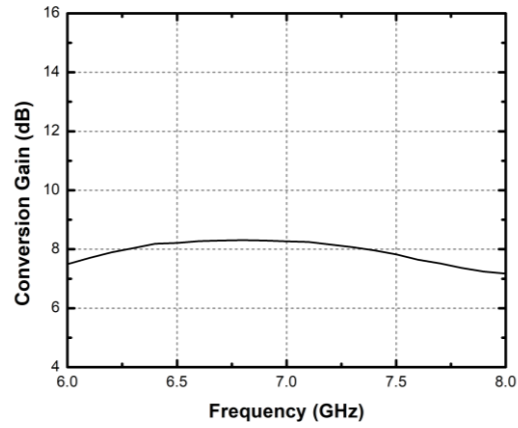
*Tolerance ±3mm

TYPICAL PERFORMANCE CHARACTERISTICS

RPC-R2016-DC



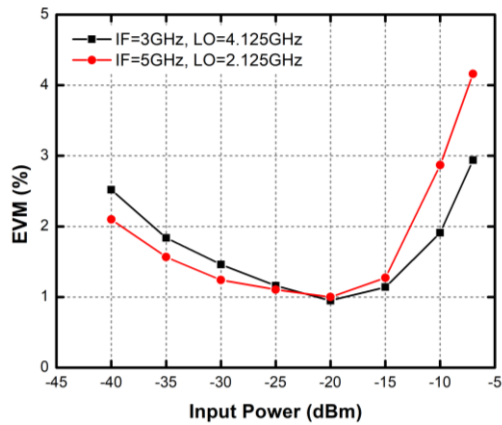
UP Convert Gain V.S. Frequency



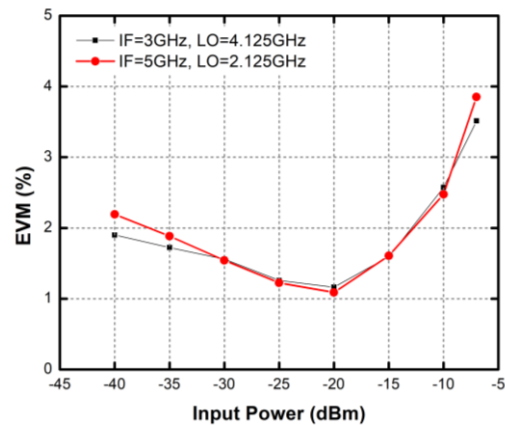
Down Convert Gain V.S. Frequency

Condition: IEEE 802.11ax

Band Width:160MHz, 1024QAM, RF=7.125GHz



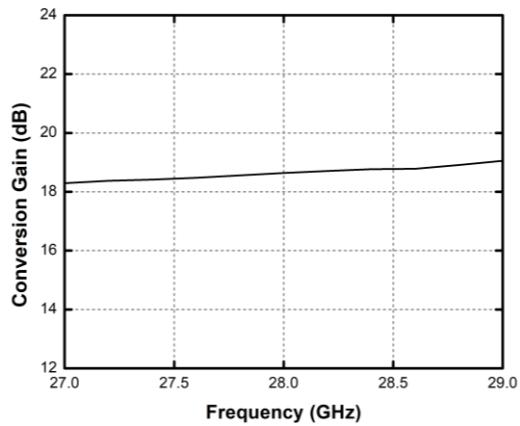
Input power V.S. EVM (Up Convert)



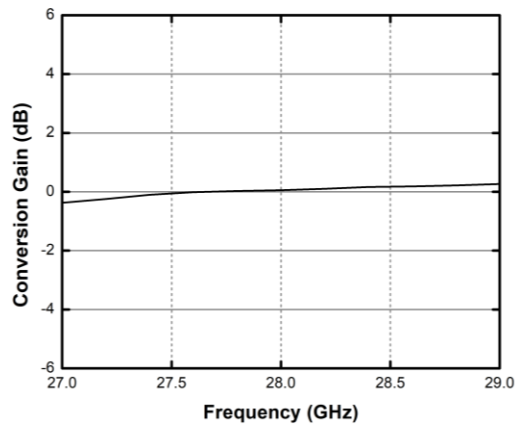
Input power V.S. EVM (Down Convert)



RPC-R28I6-DC



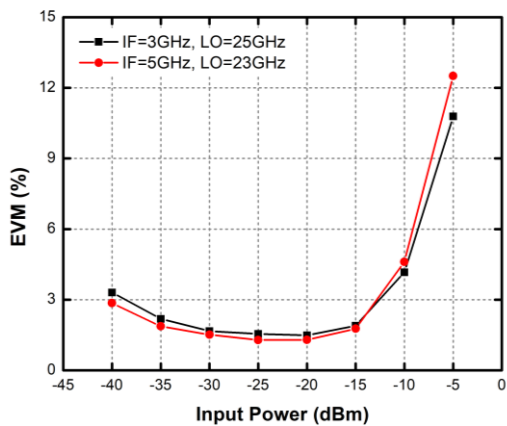
UP Convert Gain V.S. Frequency



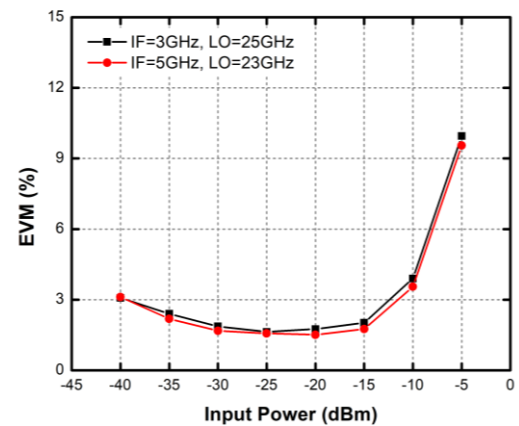
Down Convert Gain V.S. Frequency

Condition: 5GNR

Band Width:200MHz, 64QAM, RF 28GHz



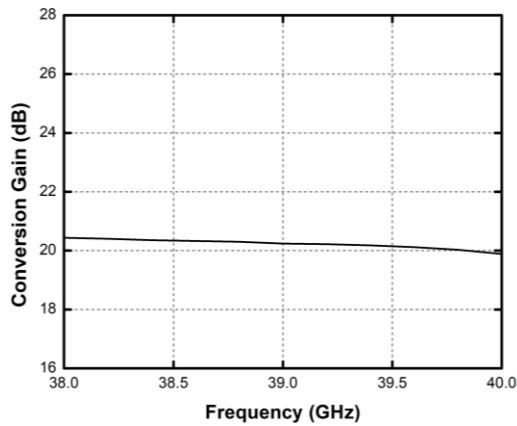
Input power V.S. EVM (Up Convert)



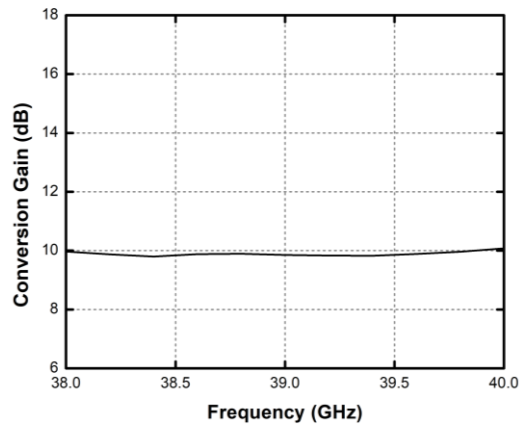
Input power V.S. EVM (Down Convert)



RPC-R48I6-DC



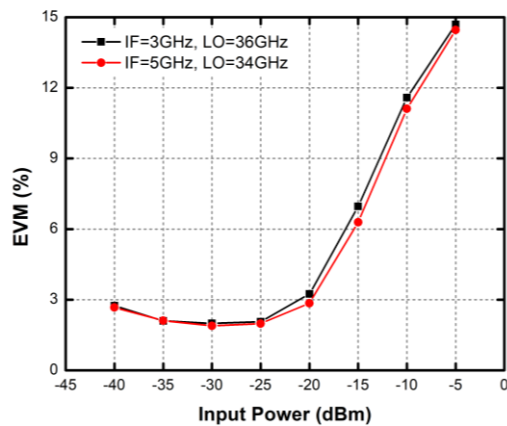
UP Convert Gain V.S. Frequency



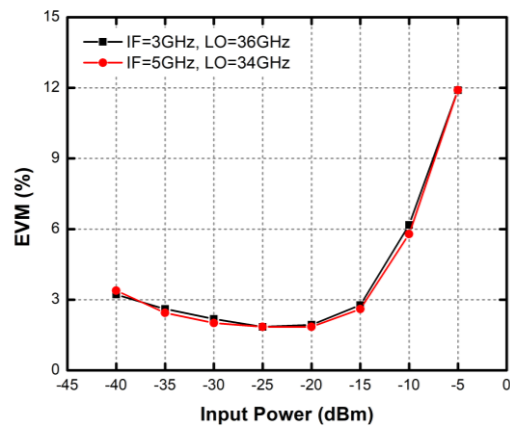
Down Convert Gain V.S. Frequency

Condition: 5GNR

Band Width:200MHz, 64QAM, RF 39GHz



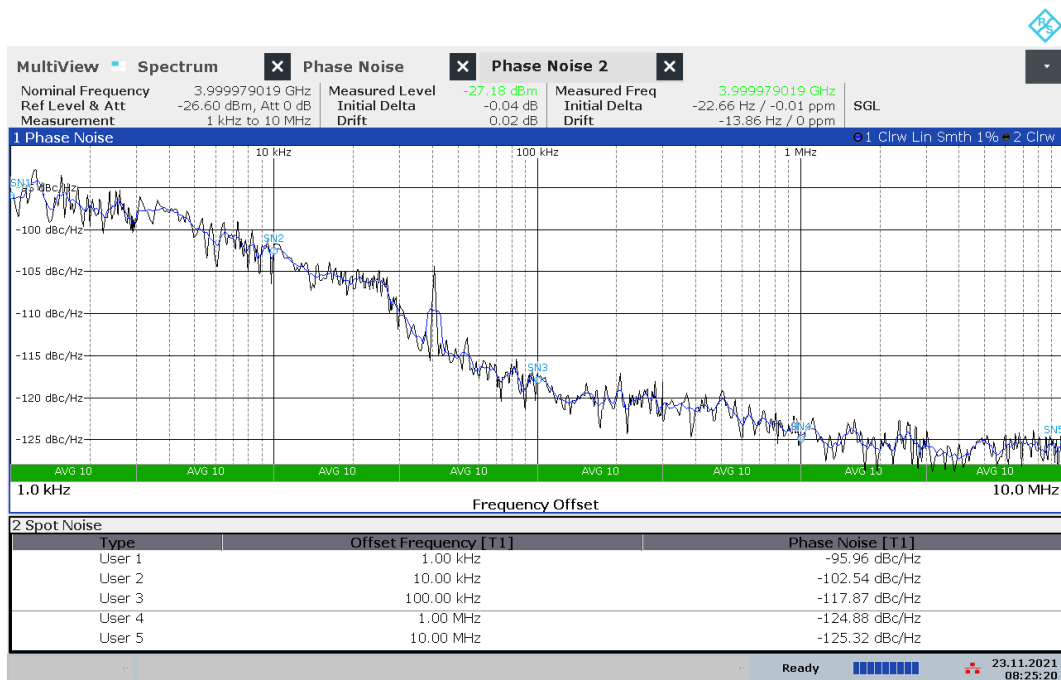
Input power V.S. EVM (Up Convert)



Input power V.S. EVM (Down Convert)

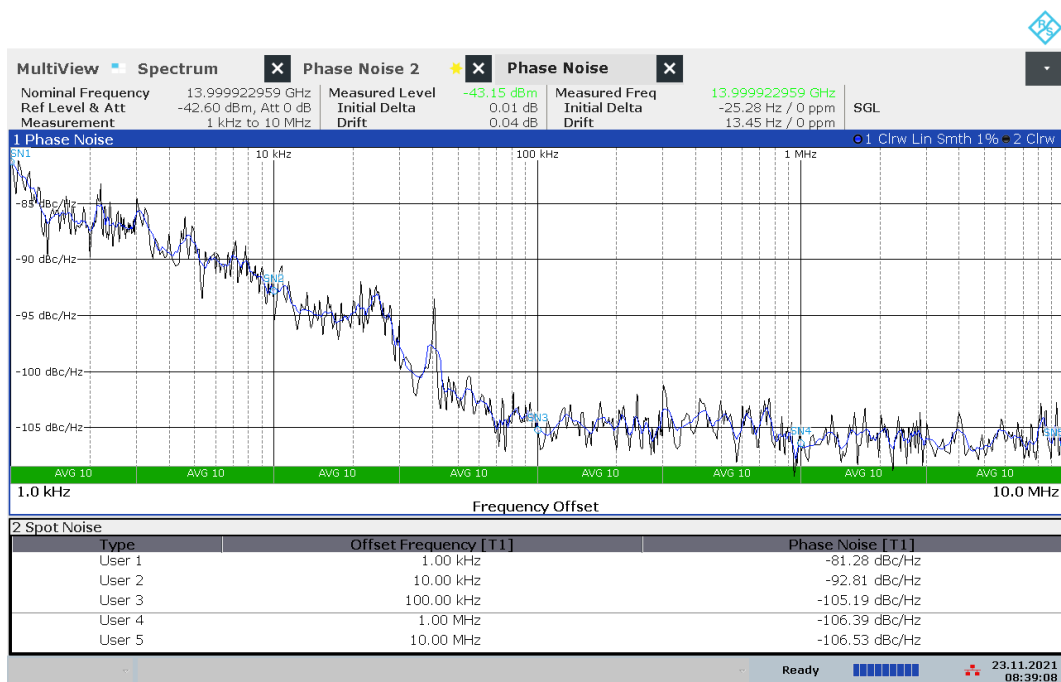


RPC-R2016-DC Phase noise



08:25:20 23.11.2021

LO 4GHz



08:39:08 23.11.2021

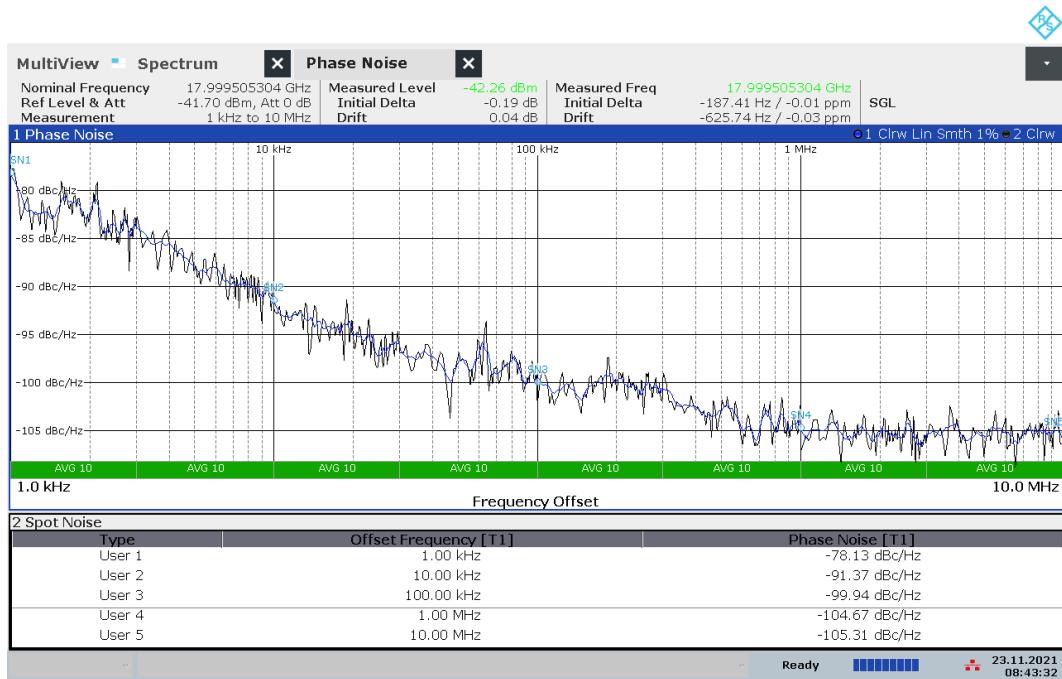
LO 14GHz



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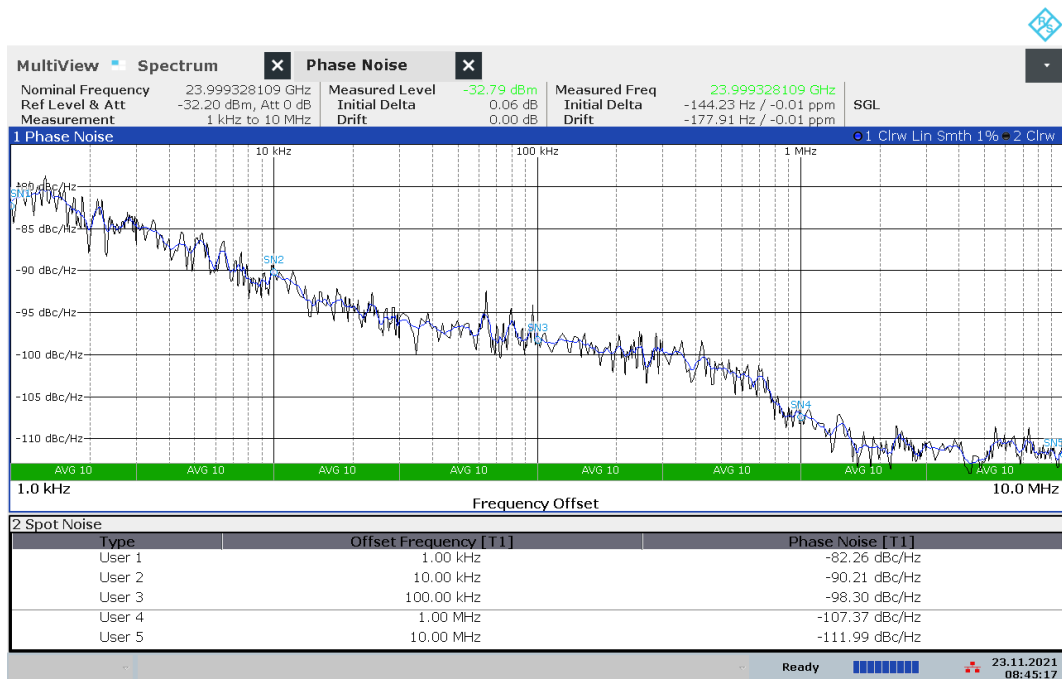
Rapidtek Technologies Inc.
<http://www.rapidtek.net>

RPC-R2816-DC



08:43:32 23.11.2021

LO 18GHz



08:45:18 23.11.2021

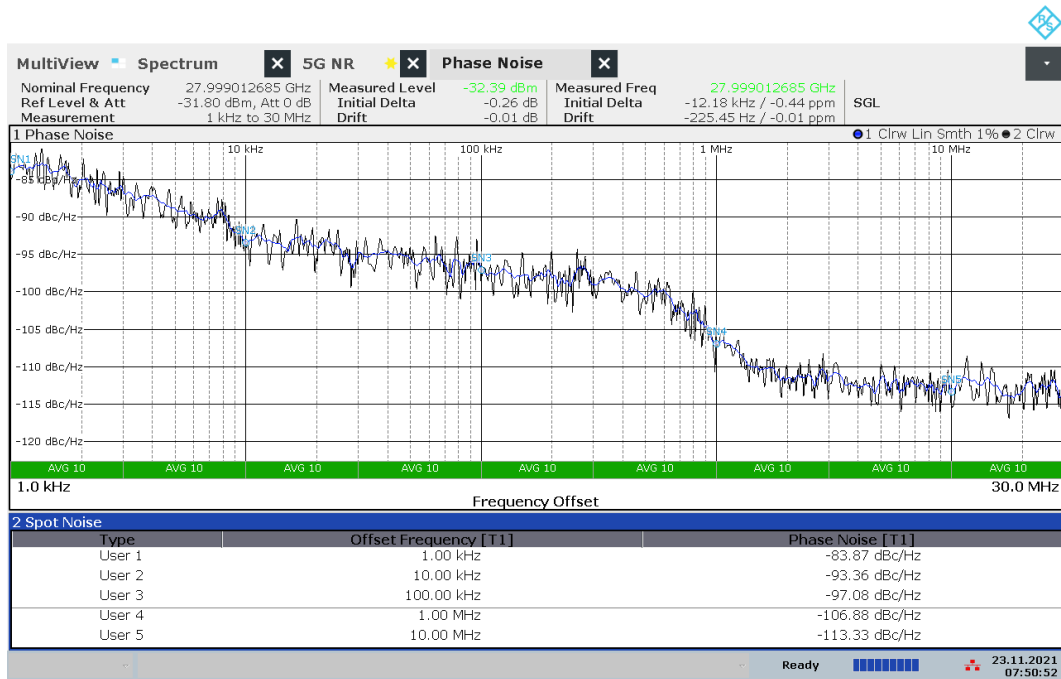
LO 24GHz



RAPIDTEK
RF COAXIAL PRODUCTS

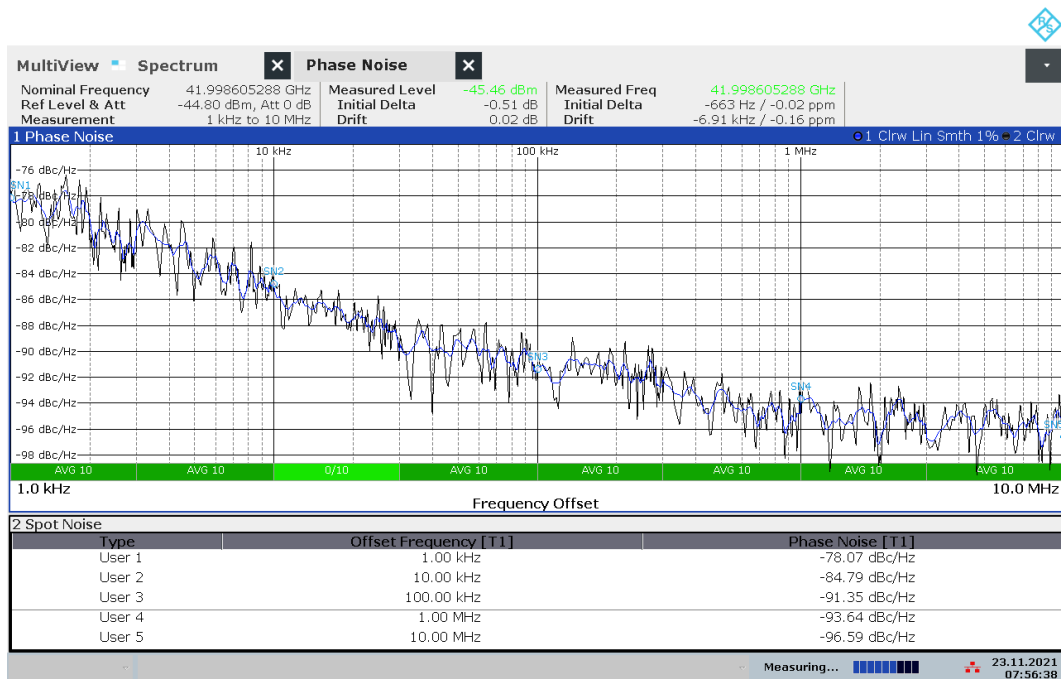
Rapidtek Technologies Inc.
<http://www.rapidtek.net>

RPC-R48I6-DC



07:50:53 23.11.2021

LO 28GHz



07:56:39 23.11.2021

LO 42GHz



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Rapidtek Technologies Inc.
<http://www.rapidtek.net>

COMMAND LIST

Model Setting Command		Channel Function Status
XMM 0		IF1-RF1: Stand by IF2-RF2: Stand by
XMM 1	T/R Low	IF1-RF1: Down conversion IF2-RF2: Down conversion
	T/R High	IF1-RF1: Up conversion IF2-RF2: Up conversion
XMM 2		IF1-RF1: Up conversion IF2-RF2: Down conversion
XMM 3		IF1-RF1: Down conversion IF2-RF2: Up conversion
XMM 4		IF1-RF1: Up conversion IF2-RF2: Up conversion
XMM 5		IF1-RF1: Down conversion IF2-RF2: Down conversion
XMM 6	T/R Low	IF1-RF1: Down conversion IF2-RF2: Up conversion
	T/R High	IF1-RF1: Up conversion IF2-RF2: Down conversion

Part name	LO Setting Command
RPC-R2016-DC	XF HEX(Frequency)
RPC-R2816-DC	XF HEX(Frequency/4)
RPC-R4816-DC	XF HEX(Frequency/4)

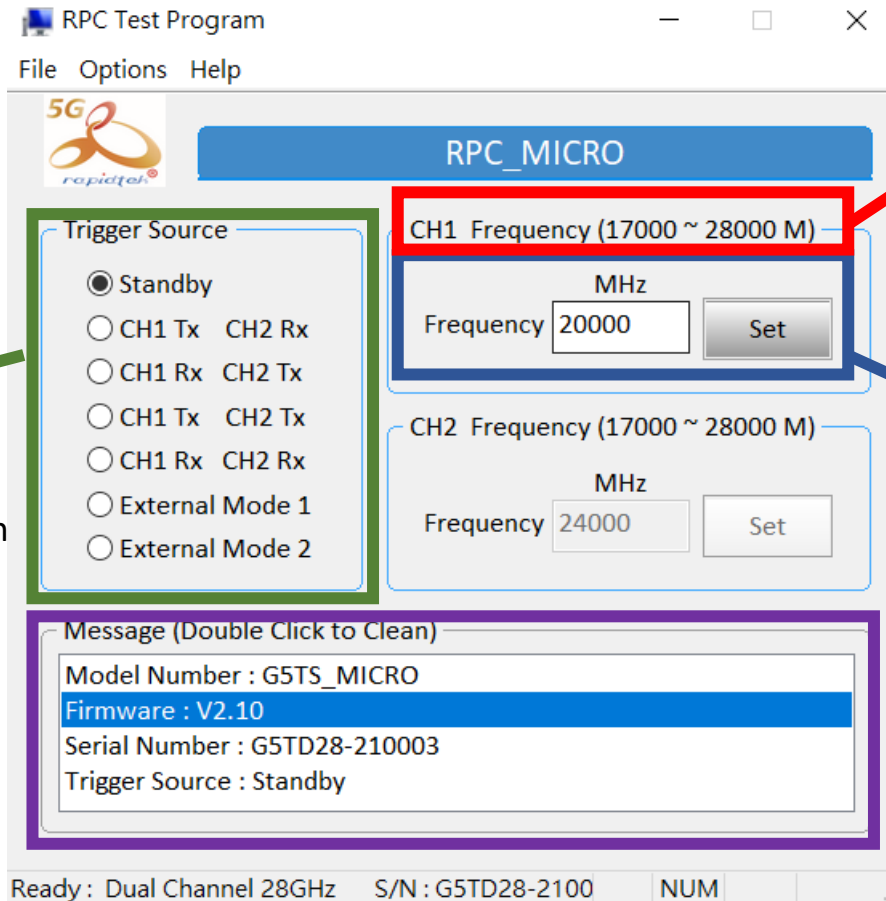
Example LO setting:

Part Name	RPC-R2016-DC	
LO(MHz)	HEX	Command
4000	FA0	XF FA0
6000	1770	XF 1770
8000	1F40	XF 1F40
10000	2710	XF 2710
12000	2EE0	XF 2EE0
14000	36B0	XF 36B0

Part Name	RPC-R2816-DC		
LO(MHz)	LO/4	HEX	Command
22000	5500	157C	XF 157C
23000	5750	1676	XF 1676
24000	6000	1770	XF 1770
25000	6250	186A	XF 186A
26000	6500	1964	XF 1964



CONTROL PROGRAM INTRODUCTION



ACCESSORIES

1. A to D Power Adapter *1pcs
AC Input: 100~240VAC/0.5A
DC Output: 5VDC/3A
2. USB Cable*1pcs
USB Type A to USB Mini Type B
3. Reference Clock Cable*1pcs
SMA(M) to MMCX(M) 20cm



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