# No.I18Z61350-WMD01 Page184of238



🊺 Kej	ysight Spectrum A	Analyzer - Swept SA								
<mark>LXI</mark> R Mar	L RF	50 Ω AC	70 647		SENSE:INT		ALIGN AUTO	RMS	05:42:19 TF	PM Aug 30, 2018
men	KCI 1 3.30	54151550		PNO: Fast 🕞 FGain:Low	Trig: Free #Atten: 6 d	Run IB			1	
10 dE	Ref B/div <b>Ref</b>	Offset 43.59 c 22.83 dBm	iB 1						Mkr1 3 -34	.959 GHz 4.43 dBm
12.8										
2.83										
-7.17										
-17.2										-19.02 dBm
-27.2		<u>, 1</u>								
-37.2										
-47.2	~~~									
67.7										
-37.2										
-67.2										
Star	t 3.000 GH	Z							Stop 1	0.000 GHz
#Re	s BW 1.0 N	/IHz		#VB	W 3.0 MHz		-	#Swe	ep 20.00 s	s (2000 pts)
MSG 🤇	↓File <cse·< p=""></cse·<>	2NB1G1L-1.4	I-QPSK-T-AF	ORT-1.png>	saved		STATUS			

∭ Key (XI RL Mark	sight Spec Ker 1	trum Ana RF 17.35	llyzer - Swept SA 50 Ω A0 3676838	419 GHz	PNO: Fast	SENSE:INT Trig: Free	A Run	LIGN AUTO #Avg Type:	RMS	05:42:44 TF	EPM Aug 30, 2018 ACE 1 2 3 4 5 6 TYPE WWWWWWW DET A N N N N N
10 dB	//div	Ref 0 Ref 2	ffset 48.23 o 2 <b>4.64 dB</b> n	dB n						Mkr1 17 -3	.354 GHz 5.08 dBm
14.6											
4.64											
-5.36											
-15.4											-19.02 dBm
-35.4 -									• <sup>1</sup>		~~~~
-45.4											
-55.4											
-65.4											
Start #Res Msg 🚺	10.00 BW 1	0 GH 1.0 MH CSE-2	z <b>iz</b> NB1G1L-1.4	4-QPSK-T-A	#VE PORT-2.png>	SW 3.0 MHz saved		STATUS	#Swe	Stop 2 ep 20.00 s	20.000 GHz (2000 pts)



### Port B, Channel Position B, LTE 3.0 MHz

🎉 Keysight Sp	ectrum Analyzer - Swept SA				- • • <b>•</b>
LXI RL	RF 50 Ω Λ DC		SENSE:INT	ALIGN AUTO	05:45:22 PM Aug 30, 2018
Warker	2.07403024402	PNO: Fast IFGain:Low	Trig: Free Run #Atten: 22 dB		TYPE WWWWWW DET A N N N N N
10 dB/div	Ref Offset 40.76 dE Ref 42.53 dBm	3			Mkr1 2.674 8 GHz -26.33 dBm
				h	
32.5					
22.5					
12.5					
2.53					
-7.47					
-17.5					-19.92 dBm
-27.5					1
-37.5					
47.5					
Start 3 kl #Res BW	Iz 1.0 MHz	#VB	W 3.0 MHz		Stop 3.000 GHz #Sweep 20.00 s (2000 pts)
мsg 🗼 File	<cse-2nb1g1l-1.4-< th=""><th>QPSK-T-APORT-3.png&gt;:</th><th>saved</th><th>To status 🚹 DC</th><th>Coupled</th></cse-2nb1g1l-1.4-<>	QPSK-T-APORT-3.png>:	saved	To status 🚹 DC	Coupled

🊺 Key	sight Spectr	um Analyzer - Sw	vept SA								
LX/RI		RF 50 G	2 AC			SENSE:INT		ALIGN AUTO	DMC	05:45:46	PM Aug 30, 2018
Mar	ker 1 3	.8999499	74987 G	HZ PNC IFGa	D:Fast 🖵	Trig: Free #Atten: 6 d	Run IB	#Ауд туре	RIVIS	1	DET A N N N N
10 dE	3/div	Ref Offset 43 Ref 22.83	3.59 dB dBm							Mkr1 3 -37	.900 GHz 7.90 dBm
12.8											
12.0											
2.83											
-7.17											
-17.2											-19.02 dBm
-27.2		<b>▲</b> 1									
-37.2	~~~~	-									
-47.2											
-57.2											
-67.2											
Star #Re:	t 3.000 s BW <u>1.</u>	GHz 0 MHz			#V <u>B</u>	W 3.0 M <u>Hz</u>			#S <u>we</u>	Stop 1 ep 20.0 <u>0 s</u>	0.000 GHz (2000 p <u>ts)</u>
MSG 🤇	File <c< p=""></c<>	SE-2NB1G1	L-3.0-QPS	K-B-APOF	RT-1.png> :	saved					



🊺 Ke	ysight Spe	ctrum Ar	nalyzer - Swept SA								
Mar	ker 1	<sup>R⊧</sup> 17.3	68684342	171 GHz	PNO: Fast G	Trig: Free #Atten: 0 c	Run IB	#Avg Type:	RMS	05:46:09 TF	PM Aug 30, 2018 ACE 1 2 3 4 5 6 TYPE WWWWWWW DET A NNNNN
10 di Log	B/div	Ref ( Ref	Offset 48.23 c <b>24.64 dBm</b>	IB 1						Mkr1 17 -3	.369 GHz 5.08 dBm
14.6											
4 6 4											
4.04 5.00											
-0.30											
-15.4											-19.02 dBm
-25.4									♦1		
-35.4										~~~~~	~~~~
-45.4											
-55.4											
-65.4											
Star #Re	t 10.00 s BW	00 GH 1.0 M	lz IHz		#VE	W 3.0 M <u>Hz</u>	<u> </u>		#Swe	Stop 2 ep 20.0 <u>0 s</u>	20.000 GHz 5 (2000 p <u>ts)</u>
MSG (	₽File <	CSE-2	2NB1G1L-3.0	)-QPSK-B-A	PORT-2.png>	saved		<b>I</b> STATUS			

Port B, Channel Position M, LTE 3.0 MHz

🎉 Keysight Sp	ectrum Analyzer - Swept SA								
(X) RL Morkor (	RF 50 Ω Λ DC			SENSE:INT	AL	IGN AUTO	e PMS	05:49:41 TR	PM Aug 30, 2018
Marker	2.00565175151	P IF	NO: Fast 😱 Gain:Low	Trig: Free #Atten: 22	Run dB			1	
10 dB/div	Ref Offset 40.76 d Ref 42.53 dBm	в						Mkr1 2.6 -26	65 8 GHz 5.46 dBm
209									
32.5									
22.5									
12.5									
2.53									
-7.47									
-17.5									-19.02 dBm
.07.5						d II		¢	1
-27.5									
-37.5									
-47.5									
Start 3 kl			#\/B)	W 2 0 MH-			#61110	Stop	3.000 GHz
#Res BW		ODSK B ADO	#VB	w 5.0 MHz		The STATUS	#Swe	ep 20.00 s	(2000 pts)
File	NUSE-ZINBIGIL-3.0	-QFSK-B-APC	JRT-3.phg> s	saveu		NO STATUS			

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ug 30, 2018											
123456	05:50:05 PM / TRACE	RMS	HAVG TVDE:	A	ENSE:INT	S		17 GHz	50 Ω AC	er 1 3 03	L <mark>XI</mark> RI Mar
ANNNN	TYPE DET			un S	Trig: Free   #Atten: 6 d	₽	PNO: Fast FGain:Low		04032340	01 1 3.30	men
8 GHz 1 dBm	Mkr1 3.93 -35.7							dB n	Offset 43.59 of 22.83 dBn	Ref div <b>Ref</b>	10 dE
											12.8
											2.83
											-7.17
-19.02 dBm											-17.2
											-27.2
									<b>\</b>		-37.2
											-47.2
											ET 0
											-37.2
											-67.2
00 GHz	Stop 10.0	#Swee			¥ 3.0 MHz	±\/B)	#		IZ /IH7	3.000 GH	Star #Rea
oo pts)	op 20.00 5 (2	"owce	STATUS		aved	ng> s	PORT-1.pr	)-QPSK-M-AF	-2NB1G1L-3.	File <cse< th=""><th>MSG</th></cse<>	MSG
19.0 00 C	Stop 10.0 ep 20.00 s (2	#Swee			<b>V 3.0 MHz</b> aved	¥VBV	# PORT-1.pr	D-QPSK-M-AF	IZ MHZ -2NB1G1L-3.	3.000 GH BW 1.0 M File <cse< th=""><th>-7.17 -17.2 -27.2 -37.2 -47.2 -67.2 -67.2 Star #Res</th></cse<>	-7.17 -17.2 -27.2 -37.2 -47.2 -67.2 -67.2 Star #Res

Keysight Spectrum Analyzer - Swept SA RL RF 50 Ω AC Marker 1 17.353676838419 GH	Z SENSE:INT Z PNO: Fast Trig: Free Run	ALIGN AUTO #Avg Type: RMS	05:50:29 PM Aug 30, 2018 TRACE 1 2 3 4 5 6 TYPE WWWWW DET A NNNN	
Ref Offset 48.23 dB 10 dB/div Ref 24.64 dBm	IFGain:High#Atten: 0 dB		Mkr1 17.354 GHz -35.11 dBm	
14.6				
4.64				
-5.36			.19.02 dBm	
-25.4				
-35.4				
-55.4				
-65.4				
Start 10.000 GHz #Res BW 1.0 MHz	#VBW 3.0 MHz	#Swi	Stop 20.000 GHz eep 20.00 s (2000 pts)	



### Port B, Channel Position T, LTE 3.0 MHz

🊺 Ke	/sight Spe	trum Ana	lyzer - Swept S	A										F ×
LXI R		RF	50 Ω 🚹 [	C			SENSE:INT		ALI	GN AUTO	-		05:52:33	PM Aug 30, 2018
Mar	ker 1	2.670	333997	999 GHz	PNO: Fas IFGain:Lo	t 🖵	Trig: Free #Atten: 22	Run dB		#Avg	Type:	RMS	16	ACE 1 2 3 4 5 6 TYPE WWWWWW DET A NNNNN
10 dE	3/div	Ref Of Ref 4	fset 40.76 2.53 dB	dB n									Mkr1 2.6 -26	70 3 GHz 6.36 dBm
LUg											J			
32.5														
22.5														
12.5														
2.53														
-7.47														
17 E														40.02 //2-
-17.5										_			•	1
-27.5														
-37.5														
-47.5														
Star	t 3 kH	7											Ston	3 000 GHz
#Re	BW	1.0 MH	z			#VB	W 3.0 MHz			_		#Swe	ep 20.00 s	(2000 pts)
MSG 🤇	PFile <	CSE-2	NB1G1L-3	.0-QPSK-N	1-APORT-3	png>	saved				us 🚹	DC Coupled		

🇾 Keysi	ight Spectrum A	Analyzer - Swept SA								
LXI RL	RF	50 Ω AC			SENSE:INT	A	LIGN AUTO	DMC	05:52:57	PM Aug 30, 2018
Mark	er 1 3.95	94797398	70 GHz	PNO: Fast 🕞 IFGain:Low	Trig: Free #Atten: 6 c	Run IB	#Avg Type:	RIVIS	1	DET A N N N N
10 dB/	Ref /div <b>Ref</b>	Offset 43.59 c 22.83 dBm	iB n						Mkr1 3 -34	.959 GHz I.73 dBm
12.8										
2.0										
2.03 -										
-7.17										
-17.2										-19.02 dBm
-27.2 -		<b>∮</b> <sup>1</sup>								
-37.2										
-47.2 —										
-57.2 —										
-67.2 —										
Start	3.000 GH	Z Aluz		#\/B	N/ 3 0 MHz			#Swo	Stop 1	0.000 GHz
	File <cse< th=""><th>2NB1G1L-3.0</th><th>)-QPSK-T-AF</th><th>PORT-1.png&gt;</th><th>saved</th><th></th><th><b>STATUS</b></th><th></th><th>op-20.00 S</th><th>(2000 pts)</th></cse<>	2NB1G1L-3.0	)-QPSK-T-AF	PORT-1.png>	saved		<b>STATUS</b>		op-20.00 S	(2000 pts)

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🊺 Ke	ysight Spec	trum An	alyzer - Swept SA										
LX/R	L	RF	50 Ω AC	672 CH			SENSE:INT		AL	IGN AUTO	DMS	05:53:21	PM Aug 30, 2018
War	Ker 1	17.37	8089344	072 GH	PNO: Fast IFGain:High	Ģ	Trig: Free #Atten: 0 d	Run IB		#Avg Type.	RM 3	i	
10 di	B/div	Ref 0 <b>Ref</b> 3	ffset 48.23 c 2 <b>4.64 dB</b> m	IB 1								Mkr1 17 -3	.379 GHz 5.09 dBm
9													
14.b													
4.64													
-5.36													
-15.4													-19.02 dBm
-25.4													
-35.4												~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~
-45.4						~							
66 A													
-65.4													
Star #Re	t 10.00 s BW	00 GH	lz Hz		#	VB	W 3.0 M <u>Hz</u>				#Swe	Stop 2 ep 20.0 <u>0 s</u>	20.000 GHz 5 (2000 p <u>ts)</u>
MSG 🤇	₽File <	CSE-2	NB1G1L-3.0	)-QPSK-T-	APORT-2.pn	ng> s	aved						

Port B, Channel Position B, LTE 5.0 MHz

🊺 Ke	ysight Spe	ctrum Anaļ	yzer - Swept SA								,			
Mar	ker 1	<sup>RF</sup> 2.668	50 Ω <u>Λ</u> DO 3332491	25 GHz		S	ENSE:INT		AL	IGN AUT #Avg	o g Type:	RMS	05:55:13 TR	PM Aug 30, 2018 ACE 1 2 3 4 5 6
					PNO: Fast IFGain:Low	₽	Trig: Free F #Atten: 22	Run dB					1	
10 di	B/div	Ref Off Ref 4	rset 40.76 o 2.53 dBm	IB									Mkr1 2.6 -26	68 8 GHz 6.45 dBm
LOg														
32.5														
22.5														
12.5														
2.53	<u> </u>													
-7.47														
-17.5														-19.02 dBm
77 E											íl.		<b>♦</b>	1
-27.3														
-37.5	<u> </u>													
-47.5														
Star	t3kH	z											Stop	3.000 GHz
#Re	s BW	1.0 MH	z		#	VBV	V 3.0 MHz					#Sw	ep 20.00 s	s (2000 pts)
MSG 🤇	₽File <	CSE-2N	IB1G1L-3.0	-QPSK-T-A	PORT-3.pn	g> sa	aved				TUS 🚹	DC Coupled		

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🊺 Ke	ysight Spectrum	Analyzer - Swept SA								
<mark>LXI</mark> R Mar	L R	F 50 Ω AC	87 GHz		SENSE:INT	1	ALIGN AUTO #Avg Type	RMS	05:55:37 TR	PM Aug 30, 2018
mea	KCI 1 3.0	555455145		PNO: Fast 🕞 FGain:Low	Trig: Free #Atten: 6 d	Run IB			1	
10 di	Re B/div <b>R</b> e	f Offset 43.59 c f 22.83 dBm	iB 1						Mkr1 3 -37	.900 GHz 7.75 dBm
10.0										
12.0										
2.83										
-7.17										
-17.2										-19.02 dBm
-27.2		<u> </u>								
-37.2	~~~~	, i								
-47.2										
-57.2										
-67.2										
Star	t 3.000 G	Hz							Stop 1	0.000 GHz
#Re	s BW 1.0	MHz		#VB	W 3.0 MHz			#Swe	ep 20.00 s	s (2000 pts)
MSG 🤇	File <cse< p=""></cse<>	E-2NB1G1L-5.0	)-QPSK-B-AF	ORT-1.png>	saved		<b>STATUS</b>			

🊺 Ke	ysight Spe	ctrum A	nalyzer - !	Swept SA										
LXI R	L	RF	50	Ω AC				S	ENSE:INT		ALIGN AUTO		05:56:02	PM Aug 30, 2018
Mar	ker 1	17.3	5867	9339	670 G	SHZ P	'NO: Fast Gain:High	Ţ	Trig: Free #Atten: 0 d	Run B	#Avg Type	RMS	TF	ACE 1 2 3 4 5 6 TYPE WWWWWW DET ANNNN
10 dE	3/div	Ref ( Ref	Offset 4 24.64	18.23 d dBm	в								Mkr1 17 -3	.359 GHz 5.10 dBm
14.6														
4 64														
-5.36														
-15.4														
-25.4														-19.02 dBm
-35.4												<b>↓</b> <sup>1</sup>	~~~~~	
-45.4				~~~				~						
-55.4														
Star #Re	t 10.0 s BW	00 GI 1.0 M	HZ IHZ				#	VBV	V 3.0 MHz			#Swe	Stop 2 ep 20.00 s	20.000 GHz 5 (2000 pts)
MSG 🤇	VFile <	CSE-	2NB1G	1L-5.0	-QPSK	-B-AP	ORT-2.pr	ng> sa	aved					



### Port B, Channel Position M, LTE 5.0 MHz

🊺 Key	/sight Spe	ctrum Anal	/zer - Swept S/	Α										- F ×	
LXI RI	_	RF	50 Ω 🥂 D				SENSE:INT		ALIG	N AUTO	_	DMC	05:57:23	PM Aug 30, 2018	
Mar	ker 1	2.682	399889	995 GH	Z PNO: Fa IFGain:L	ast 🖵 .ow	Trig: Free #Atten: 22	Run dB		#Avg	iype:	RWIS	1		
10 dE	3/div	Ref Off Ref 4	set 40.76 2 <b>.53 dB</b> r	dB n									Mkr1 2.6 -26	82 3 GHz 6.45 dBm	
209										,					
32.5										ĺ					
22.5										V					
12.5															
2.53															
-7.47															
-17.5														-19.02 dBm	
-27.5										ال				1	
27.5															
-37.5															
-47.5															
Star #Res	t 3 kH s BW	z 1.0 MH	z			#VB	W 3.0 MHz					#Swe	Stop ep 20.00 s	3.000 GHz (2000 pts)	
MSG 🤇	File <	CSE-2N	B1G1L-5.	0-QPSK-	B-APORT-:	3.png>	saved		Ľ,	STATU	IS 🔔 (	DC Coupled	1000 m 1 Stop 3.000 GHz ep 20.00 s (2000 pts)		

🊺 Ke	/sight Spectr	rum Analyzer - Swe	ept SA							- F ×
l <b>xi</b> R	L	RF 50 Ω	AC		SENSE:INT	AL	IGN AUTO		05:57:47	PM Aug 30, 2018
Mar	ker 1 3	.93846923	34617 GH	Z PNO: Fast IFGain:Low	Trig: Free F #Atten: 6 d	Run B	#Avg Type:	RMS	TR	ACE 1 2 3 4 5 6 YPE WWWWWWW DET A NNNNN
10 dE Log	3/div	Ref Offset 43. Ref 22.83 c	.59 dB IBm						Mkr1 3. -35	938 GHz .79 dBm
12.8										
2.83										
-7.17										
-17.2										-19:02 dBm
-27.2		.1								
-37.2	~~~	The second second								
-47.2										
-57.2										
-67.2										
Star #Re:	t 3.000 s BW 1.	GHz .0 MHz		#VE	SW 3.0 MHz			#Swee	Stop 1 p 20.00 s	0.000 GHz (2000 pts)
MSG 🤇	File <c< p=""></c<>	SE-2NB1G1	L-5.0-QPSK-	M-APORT-1.png>	saved		STATUS			

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🊺 Ke	ysight Spec	trum An	alyzer - Swept SA									- F ×
Mar	ker 1	R⊧ 17.37	3686843	422 GHz	PNO: Fast G IFGain:High	Trig: Free #Atten: 0	e Run dB	ALIG	#Avg Type:	RMS	05:58:11 TF	PM Aug 30, 2018 ACE 1 2 3 4 5 6 TYPE WWWWWW DET A NNNNN
10 dl Log	B/div	Ref 0 <b>Ref</b> 2	ffset 48.23 c 2 <b>4.64 dB</b> m	IB 1							Mkr1 17 -3	.374 GHz 5.10 dBm
14.6												
4.64												
-5.36												
-15.4												40.00 (0)
-25.4												-19.02 dbm
-35.4										<u>↓</u> 1		~~~~~
-45.4									~~~			
-55.4												
-65.4												
Star	1 10 00		7								Stop	
#Re	s BW 1	.0 M	Hz		#V	BW 3.0 MH:	z			#Swe	ep 20.00 s	(2000 pts)
MSG 🤇	₽File <	CSE-2	NB1G1L-5.0	-QPSK-M-	APORT-2.png	> saved		Ű,	STATUS			

Port B, Channel Position T, LTE 5.0 MHz

🎉 Keysight Sp	ectrum Analyzer - Swept SA									
LXI RL	RF 50 Ω ▲ DC			SENSE:INT	A	LIGN AUTO	DMS	05:59:18	PM Aug 30, 2018	
Marker	2.08233998899	95 GHZ P IF	NO: Fast 😱 Gain:Low	Trig: Free I #Atten: 22	Run dB	#Avg type	. KWS	т		
10 dB/div	Ref Offset 40.76 d Ref 42.53 dBm	В						Mkr1 2.6 -26	82 3 GHz 5.43 dBm	
32.5										
22.5										
12.5										
2.53										
-7.47										
-17.5									-19.02 dBm	
-27.5										
-37.5										
-47.5										
Start 3 kl #Res BW	Hz 1.0 MHz		#VB	W 3.0 MHz			#Swe	Stop ep 20.00 s	3.000 GHz (2000 pts)	
MSG 🧼 File	<cse-2nb1g1l-5.0< th=""><th>-QPSK-M-AP</th><th>ORT-3.png&gt;</th><th>saved</th><th></th><th></th><th>DC Coupled</th><th colspan="3">-1002-05m 1 Stop 3.000 GHz ep 20.00 s (2000 pts)</th></cse-2nb1g1l-5.0<>	-QPSK-M-AP	ORT-3.png>	saved			DC Coupled	-1002-05m 1 Stop 3.000 GHz ep 20.00 s (2000 pts)		

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🊺 Kej	ysight Spectrum A	Analyzer - Swept SA								
<mark>LXI</mark> R Mar	L RF	50 Ω AC	70 CH7		SENSE:INT		ALIGN AUTO	RMS	05:59:43 TR	PM Aug 30, 2018
Man	Kei 1 3.35	594797590	70 GHZ	PNO: Fast 🕞 FGain:Low	Trig: Free #Atten: 6 d	Run IB			I	
10 dE	Ref B/div <b>Re</b> f	Offset 43.59 c 22.83 dBm	IB I						Mkr1 3 -34	.959 GHz .58 dBm
12.8										
2.83										
-7.17										
-17.2										-19.02 dBm
-27.2		<b>▲</b> 1								
-37.2	~~~~									
-47.2										
-57.2										
-67.2										
Star	t 3.000 GH	Iz							Stop 1	0.000 GHz
#Re	s BW 1.0 N	/IHz		#VB	W 3.0 MHz			#Swe	ep 20.00 s	(2000 pts)
MSG 🤇	File <cse< th=""><th>-2NB1G1L-5.0</th><th>-QPSK-T-AP</th><th>ORT-1.png&gt;</th><th>saved</th><th></th><th><b>STATUS</b></th><th></th><th></th><th></th></cse<>	-2NB1G1L-5.0	-QPSK-T-AP	ORT-1.png>	saved		<b>STATUS</b>			

₩ Key Ø RI Mari	sight Spect	rum Ana RF 1 <b>7.36</b>	lyzer - Swept SA 50 Ω AC 8684342	171 GHz	PNO: Fast	SENSE:INT	Run	LIGN AUTO #Avg Type:	RMS	06:00:06	PM Aug 30, 2018 ACE 1 2 3 4 5 6 TYPE WWWWWWWW DET A N N N N N
10 dE	/div	Ref Of Ref 2	ffset 48.23 o 2 <b>4.64 dB</b> m	IB 1	FGain:rign	#Atten: 00				Mkr1 17 -3	.369 GHz 5.13 dBm
14.6											
4.64											
-5.36											
-25.4											-19.02 dBm
-35.4											
-45.4											
-55.4											
Star	10.00	0 GH	z							Stop 2	20.000 GHz
#Res мsg ц	BW 1	.0 MH	<b>iz</b> NB1G1L-5.0	)-QPSK-T-AI	#VE PORT-2.png>	SW 3.0 MHz saved		STATUS	#Swe	ep 20.00 s	(2000 pts)



### Port B, Channel Position B, LTE 10.0 MHz

🎉 Keysight	Spectrum Analyzer - Swept SA									
Marker	RF 50 Ω Λ DC	Hz	ENSE:INT	ALIGN AUTO #Avg Type:	10:05:2 RMS T	3 AM Aug 31, 2018 RACE 1 2 3 4 5 6				
in an ton		PNO: Fast 🖵 IFGain:Low	Trig: Free Run #Atten: 22 dB							
10 dB/div	Ref Offset 40.76 dB Ref 52.76 dBm				Mkr1 2.6 -2	81 1 GHz 5.96 dBm				
42.8										
32.8										
22.0										
22.8										
12.8										
2.76										
-7.24										
-17.2						-19.02 dBm				
-27.2				N.		1				
-37.2										
						2 000 011-				
#Res B	W 1.0 MHz	#VBV	V 3.0 MHz		#Sweep 20.00	s (2000 GHZ)				
MSG	з ILDC Coupled									

🊺 Ke	ysight Spect	rum Analyz	er - Swept SA										
L <mark>XI</mark> R	L	RF	50 Ω AC			SENSE	:INT		ALI	GN AUTO		10:05:47	AM Aug 31, 2018
Mar	ker 1 3	3.8999	499749	87 GHz	PNO: Fast ( IFGain:Low	→ <sup>T</sup>	rig: Free Atten: 6 c	Run IB		#Avg Type:	RMS	TH	ACE 1 2 3 4 5 6 TYPE WWWWWW DET A NNNNN
10 di	3/div	Ref Offs Ref 22	et 43.59 c .83 dBm	IB 1								Mkr1 3 -37	.900 GHz 7.71 dBm
12.8													
2.83													
-7 17													
-17.2													
17.2													-19.02 0511
-27.2			1										
47.0	~~~~	$\sim$											
-07.2													
Star #Re	t 3.000 s BW 1	GHz .0 MHz			#\	/BW <u>3</u>	.0 MHz				#Swe	Stop 1 ep 20.00 s	0.000 GHz (2000 pts)
MSG 🤇	↓ File <0	CSE-2N	31G1L-10	.0-QPSK-B	APORT-1.pr	ig> save	ed			to status			

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🊺 Ke	ysight Spec	trum An	alyzer - Swept SA								
Mar	ker 1	<sup>R⊪</sup> 17.35	50 Ω AC 58679339	670 GHz	PNO: Fast 🕞 IFGain:High	Trig: Free #Atten: 0 c	Run 1B	ALIGN AUTO #Avg Type	RMS	10:06:11 TF	AM Aug 31, 2018 ACE 1 2 3 4 5 6 TYPE WWWWWW DET A NNNNN
10 dl Log	B/div	Ref 0 <b>Ref</b> 2	ffset 48.23 c 2 <b>4.64 dB</b> m	IB 1						Mkr1 17 -3	.359 GHz 5.31 dBm
14.0											
4.04											
-5.36											
-15.4											-19.02 dBm
-25.4									▲1		
-35.4											~~~~
-45.4											
-55.4											
-65.4											
Star	t 10.00	0 GH	Z		#\/E				#0	Stop 2	20.000 GHz
#Re	i € File <	CSE-2	NB1G1L-10	.0-QPSK-B-/	APORT-2.png	> saved		STATUS	#5W6	Stop 20.000 GHz Sweep 20.00 s (2000 pts)	

Port B, Channel Position M, LTE 10.0 MHz

🎉 Keysight S	pectrum Analyzer - Swept SA								
L <mark>XI</mark> RL	RF 50 Ω ADC			SENSE:INT	AL	LIGN AUTO	DMS	10:08:39 TR	AM Aug 31, 2018
Marker	1 2.08233998899	95 GHZ PI	NO: Fast 🖵	Trig: Free #Atten: 22	Run dB	*rv9 i yp	E. RWS	Т	
10 dB/div	Ref Offset 40.76 dl Ref 42.53 dBm	В						Mkr1 2.6 -26	82 3 GHz 5.04 dBm
209									
32.5									
22.5									
12.5									
2.53									
-7.47									
17.5									10.00.40-
-17.5									1
-27.5						the second s			
-37.5									
-47.5									
Start 3 k	Hz							Stop	3.000 GHz
#Res BW	1.0 MHz		#VB	W 3.0 MHz			#Swe	ep 20.00 s	(2000 pts)
MSG 🗘 File	<cse-2nb1g1l-10.0< th=""><th>0-QPSK-B-AP</th><th>ORT-3.png&gt;</th><th>saved</th><th></th><th></th><th>DC Coupled</th><th></th><th></th></cse-2nb1g1l-10.0<>	0-QPSK-B-AP	ORT-3.png>	saved			DC Coupled		

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🊺 Keysi	ight Spectrum Analyzer - Swept SA					
<mark>LXI</mark> RL Mark	RF 50 Ω AC		SENSE:INT	ALIGN AUTO #Avg Type: F	RMS	10:09:04 AM Aug 31, 2018 TRACE 1 2 3 4 5 6
Mellik	er 1 3.330409234017	PNO: Fast IFGain:Low	Trig: Free Run #Atten: 6 dB			
10 dB/	Ref Offset 43.59 dB div Ref 22.83 dBm				N	lkr1 3.938 GHz -35.61 dBm
12.8						
2.83 —						
-7.17						
-17.2						-19.02 dBm
-27.2 —	1					
-37.2	m			~~~~		
-47.2 —						
-57.2 —						
-67.2						
Start	3.000 GHz					Stop 10.000 GHz
#Res	BW 1.0 MHz	#VB	W 3.0 MHz		#Sweep	20.00 s (2000 pts)
MSG 🤳	Alignment Completed			<b>I</b> status		

🊺 Key	/sight Spe	ctrum Ar	nalyzer - Swep	ot SA								- • • ×
<mark>lXI</mark> RI Mari	ker 1	RF	50 Ω	AC 39670 (	GHZ		SENSE:INT		ALIGN AUTO #Avg Type:	RMS	10:09:28 TF	AM Aug 31, 2018
11120			500735	55070	PN0 IFGa	D: Fast 🕞 in:High	Trig: Free #Atten: 0 d	Run 1B	0 ,1			
10 dE	3/div	Ref ( Ref	offset 48.2 <b>24.64 dl</b>	23 dB Bm							Mkr1 17 -3	.359 GHz 5.34 dBm
LOg												
14.6												
4.64												
4.04												
-5.36												
-15.4												
												-19.02 dBm
-25.4										4		
-35.4										<b>,</b>		
					~							
-45.4												
-55.4												
CE 4												
-00.4												
Star	t 10. <u>0</u>	00 GI	lz								Stop 2	20.000 GHz
#Res	s BW	1.0 M	Hz			#VE	3W 3.0 MHz			#Swe	ep 20.00 s	s (2000 pts)
MSG 🤇	VFile <	CSE-2	2NB1G1L	-10.0-QP	SK-M-APO	ORT-2.png	> saved					

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### Port B, Channel Position T, LTE 10.0 MHz

💓 Keysight Spectrum Analyzer - Swept SA			
XI     RF     50 Ω     Δ     C       Morkor 4 2 690920240420     CH=     CH=	SENSE:INT	ALIGN AUTO	10:11:17 AM Aug 31, 2018
Marker 1 2.080639240120 GHZ	PNO: Fast Trig: Free I IFGain:Low #Atten: 22	Run dB	
Ref Offset 40.76 dB 10 dB/div Ref 42.53 dBm			Mkr1 2.680 8 GHz -25.94 dBm
32.5			
22.5			
12.5			
2.53			
-7.47			
-17.5			-19.02 dBm
-27.5		h	
-37.5			
.47.5			
Start 3 kHz #Res BW 1.0 MHz	#VBW 3.0 MHz		Stop 3.000 GHz #Sweep 20.00 s (2000 pts)
MSG 🕹 File <cse-2nb1g1l-10.0-qpsk-m< th=""><th>-APORT-3.png&gt; saved</th><th>🚺 status 🚹</th><th>DC Coupled</th></cse-2nb1g1l-10.0-qpsk-m<>	-APORT-3.png> saved	🚺 status 🚹	DC Coupled

🊺 Key	ysight Spect	rum Ana	ilyzer - Swept SA		_						
LX/RI		RF	50 Ω AC			SENSE:INT	4	HAVG TYPE	DMS	10:11:42	AM Aug 31, 2018
Wan	Ker 1 a	5.959	4797390	70 GHZ	PNO: Fast GIFGain:Low	⊃ Trig: Free #Atten: 6 c	Run IB	mitg type.			
10 dE	3/div	Ref Of Ref 2	ffset 43.59 c 2 <b>2.83 dBr</b> r	IB 1						Mkr1 3 -34	.959 GHz 4.98 dBm
12.0											
2.83											
-7.17											
-17.2											-19.02 dBm
-27.2			<u>, 1</u>								
-37.2		~									
-47.2	~~~~										
-57.2											
07.0											
-67.2											
Star #Res	t 3.000 s BW 1	GHz .0 MH	łz	1	#VE	SW 3.0 MHz			#Swe	Stop 1 ep 20.00 s	0.000 GHz (2000 pts)
MSG 🤇	↓ File <0	CSE-2	NB1G1L-10	.0-QPSK-T-	APORT-1.png	> saved		STATUS			

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🊺 Keysight S	pectrum Analyzer - Swept SA							
LXI RL	RF 50 Ω AC		SENSE:IN	П	ALIGN AUTO		10:12:06	AM Aug 31, 2018
Marker '	1 17.3636818409	PNO: Fas IFGain:Hig	st 😱 Trig gh #Att	: Free Run en: 0 dB	#Avg Type	: RMS	T	ACE 1 2 3 4 5 6 YPE WWWWWW DET A NNNNN
10 dB/div	Ref Offset 48.23 dE Ref 24.64 dBm	3					Mkr1 17. -35	364 GHz 39 dBm
14.6								
14.0								
4.64								
-5.36								
-15.4								-19.02 dBm
-25.4								
-35.4			~~~				~~~~	~~~~
-45.4								
-55.4								
-65.4								
Start 10. #Res BW	000 GHz ( 1.0 MHz		#VBW 3.0	MHz		#Swe	Stop 2 ep 20.00 s	0.000 GHz (2000 pts)
MSG 🧼 Alig	nment Completed							

Port B, Channel Position B, LTE 15.0 MHz

颠 Keysight Sp	ectrum Analyzer - Swept SA								
LXI RL	RF 50 Ω Λ DC			SENSE:INT		ALIGN AUTO	o: DMS	10:15:52	AM Aug 31, 2018
Marker 1	2.6808392401	ZU GHZ	PNO: Fast 🖵 FGain:Low	Trig: Free #Atten: 22	Run dB	#AV9 19P	e. Ring		
10 dB/div	Ref Offset 40.76 c Ref 42.53 dBm	iB 1						Mkr1 2.6 -26	80 8 GHz 6.47 dBm
32.5									
22.5									
12.5									
2.53									
-7.47									
-17.5									-1 <u>0.02 dBm</u> 1
-27.5									
-37.5									
-47.5									
Start 3 k⊦ #Res BW	IZ 1.0 MHz		#VB	W 3.0 MHz			#Sw	Stop eep 20.00 s	3.000 GHz (2000 pts)
<mark>мsg</mark> 🧼 Aligr	nment Completed						DC Coupled	1	

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Keysight Spectrum Analyzer - Swept SA			- F <b>-</b>
X     RL     RF     50 Ω     AC       Marker 1 3 899949974987 GHz	SENSE:INT	ALIGN AUTO #Avg Type:	10:16:16 AM Aug 31, 2018 RMS TRACE 123456
	PNO: Fast Trig: Free F	Run B	DET A N N N N
Ref Offset 43 59 dB	in dumieon		Mkr1 3.900 GHz
10 dB/div Ref 22.83 dBm			-37.86 dBm
12.8			
2.83			
2.00			
-7.17			
.17.2			
			-19.02 dbm
-27.2			
.37.2			
-47.2			
-57.2			
-67.2			
Start 3.000 GHz #Res BW 1.0 MHz	#VBW 3.0 MHz		Stop 10.000 GHz #Sween 20.00 s (2000 pts)
Msg 🤳 File <cse-2nb1g1l-15.0-qpsk-b-< th=""><th>-APORT-1.png&gt; saved</th><th>STATUS</th><th>"onoop 20.00 5 (2000 pt3)</th></cse-2nb1g1l-15.0-qpsk-b-<>	-APORT-1.png> saved	STATUS	"onoop 20.00 5 (2000 pt3)

🊺 Kej	/sight Spe	ctrum Ar	nalyzer - Swe	ept SA									
LXI R		RF	50 Ω	AC			SE	ENSE:INT		ALIGN AUTO	DMS	10:16:40	AM Aug 31, 2018
Mar	ker 1	17.3	586793	539670	GHZ F	PNO: Fast Gain:High	₽	Trig: Free F #Atten: 0 d	Run B	#Avg type	. King	1	
10 dE	3/div	Ref ( Ref	Offset 48. <b>24.64</b> d	23 dB I <b>Bm</b>								Mkr1 17 -3	.359 GHz 5.45 dBm
LUg													
14.6													
4.64													
-5.36													
-15.4													40.02 dBm
-25.4													-19.02 (18/1
20.4											<b>≜</b> 1		
-35.4				<u></u>			-		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~			~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	
-45.4													
-55.4													
-65.4													
Star #Re:	t 10.0 s BW	00 GI 1.0 M	lz Hz			#	VBV	/ 3.0 MHz			#Swe	Stop 2 ep 20.00 s	20.000 GHz 5 (2000 pts)
MSG 🤇	File <	CSE-2	2NB1G1L	15.0-QF	PSK-B-AP	PORT-2.pi	ng> s	saved		<b>STATUS</b>			

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### Port B, Channel Position M, LTE 15.0 MHz

🊺 Key	sight Spe	ctrum Analyz	ter - Swept SA	۱.										- F X
Mark	ker 1	<sup>RF</sup> 2.6838	50 Ω 🚹 DO 407378	: 69 GHz	_		SENSE:INT		ALIG	N AUTO #Avg T	ype: RMS	;	10:18:23 TR	AM Aug 31, 2018 ACE 1 2 3 4 5 6
			Tororo		PNO: Fas IFGain:Lo	t w	Trig: Free #Atten: 22	Run dB					T	
10 dE	3/div	Ref Offs Ref 42	et 40.76 d .53 dBn	dB N									Mkr1 2.6 -26	83 8 GHz 5.42 dBm
LUg														
32.5														
22.5														
12.5														
2.52														
2.55														
-7.47														
-17.5														-19.02 dBm
-27.5										ļ				1
-37.5														
-47.5														
Star	2 1 1	_											Ston	2 000 CHz
#Res	BW	2 1.0 MHz	-			#VB	W 3.0 MHz					#Swe	ep 20.00 s	(2000 GH2
MSG 🤙	Stori	ng Hardw	are Statis	tics					ų	STATUS	LDC 0	Coupled		

🊺 Kej	ysight Spectrum Analyzer - Swept	t SA							
LXI R	L RF 50 Ω	AC		SENSE:INT	AL	IGN AUTO		10:18:48	AM Aug 31, 2018
Mar	ker 1 3.938469234	4617 GHz	PNO: Fast 🕞 IFGain:Low	Trig: Free #Atten: 6 d	Run IB	#Avg Type:	RMS	TR	ACE 1 2 3 4 5 6 TYPE WWWWWWW DET A NNNNN
10 dE Log	Ref Offset 43.5 B/div Ref 22.83 dE	9 dB 3m						Mkr1 3 -36	.938 GHz 5.27 dBm
12.8									
2.83									
-7.17									
-17.2									-19:02 dBm
-27.2									
-37.2	mph								
-47.2									
-67.2									
Star	t 3 000 CHz							Stop 1	0.000 CH2
#Re:	s BW 1.0 MHz		#VB	W 3.0 MHz		~	#Swe	ep 20.00 s	(2000 GH2
MSG 🤇	File <cse-2nb1g1l-< p=""></cse-2nb1g1l-<>	15.0-QPSK-M-	APORT-1.png	> saved					

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🊺 Ke	ysight Spe	ctrum Ar	nalyzer - Swept S	A									
LXI R	L	RF	50 Ω A				SENSE:INT		ALI	GN AUTO	DMC	10:19:12	2 AM Aug 31, 2018
Mar	ker 1	17.3	5867933	9670 GH	Z PNO: Fast IFGain:High	<b>,</b> •	Trig: Free #Atten: 0 d	Run IB		#Avg Type:	RIVIS	1	
10 di	B/div	Ref ( <b>Ref</b>	offset 48.23 <b>24.64 dB</b> r	dB M								Mkr1 17 -3	.359 GHz 5.40 dBm
LOg													
14.6													
4.64													
-5.36													
-15.4													
													-19.02 dBm
-25.4											<b>♦</b> <sup>1</sup>		
-35.4					~	~		~~~		~~~			~~~~
-45.4													
-55.4													
-65.4													
Star #Re	t 10.0 s BW	00 GH 1.0 M	lz Hz			#VB	W 3.0 MHz				#Swe	Stop 2 ep 20.00 s	20.000 GHz 5 (2000 pts)
MSG 🤇	🎝 File <	CSE-2	2NB1G1L-1	5.0-QPSK-	M-APORT-2	.png>	> saved			STATUS			

Port B, Channel Position T, LTE 15.0 MHz

颠 Keysight	Spectrum Analyzer - Swept SA					
L <mark>XI</mark> RL	RF 50 Ω 🚹 DC		SENSE:INT	ALIGN AUTO	5.44	10:21:31 AM Aug 31, 2018
Marker	1 2.682339988995	PNO: Fast IFGain:Low	Trig: Free Run #Atten: 22 dB	#Avg iyp	e: RIVIS	TYPE WWWWWW DET A NNNNN
10 dB/div	Ref Offset 40.76 dB Ref 42.53 dBm				М	kr1 2.682 3 GHz -26.42 dBm
209						
32.5				ì		
22.5						
12.5						
2.53						
-7.47						
-17.5						-19.02 dBm
-27 5						1
-37.5						
-47.5						
Start 3 I #Res Bl	kHz N 1.0 MHz	#VB	W 3.0 MHz		#Sweep	Stop 3.000 GHz 20.00 s (2000 pts)
MSG 🗼 Ali	gnment Completed				DC Coupled	

# No.I18Z61350-WMD01 Page202of238



📁 Keysight Spectrum Analyzer - Swept SA			- F ×
X     RL     RF     50 Ω     AC       Marker 1 3 959/79739870 GHz	SENSE:INT	ALIGN AUTO #Avg Type: RMS	10:21:55 AM Aug 31, 2018 TRACE 1 2 3 4 5 6
	PNO: Fast Trig: Free Run IFGain:Low #Atten: 6 dB	• ,,	DET A NNNN
Ref Offset 43.59 dB 10 dB/div Ref 22.83 dBm			Mkr1 3.959 GHz -35.01 dBm
12.8			
2.83			
-7,17			
-17.2			-19.02 dBm
-27.2			
-37.2			
-47.2			
<i>ET</i> 2			
-67.2			
Start 3.000 GHz #Res BM 1.0 MHz	#\/B\M 3.0 MHz	#\$\\\\	Stop 10.000 GHz
MSG JFile <cse-2nb1g1l-15.0-qpsk-t-a< th=""><th>PORT-1.png&gt; saved</th><th>To STATUS</th><th></th></cse-2nb1g1l-15.0-qpsk-t-a<>	PORT-1.png> saved	To STATUS	

∭ Kej <b>(XI</b> R Mar	/sight Spe	ctrum Ar RF	alyzer - Swept S 50 Ω A	A IC   1021 CH	z	SENSE:INT	A	LIGN AUTO	RMS	10:22:20 TF	AM Aug 31, 2018
Men	KGI I		0500104	552 T GH	PNO: Fast G	Trig: Free #Atten: 0 c	Run IB				
10 dE	3/div	Ref ( Ref	offset 48.23 <b>24.64 dB</b> r	dB M						Mkr1 17 -3	.364 GHz 5.23 dBm
3											
4.64											
-5.36											
-15.4											
-25.4											-19.02 dBm
-35.4									<b>↓</b> <sup>1</sup>		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
-45.4											
-55.4											
-65.4											
Star	f 10 0	00 GI	7							Stop 2	20.000 GHz
#Re:	s BW	1.0 M	Hz		#VE	3W 3.0 MHz		f	#Swe	ep 20.00 s	(2000 pts)
MSG	>File <	CSE-2	2NB1G1L-1	5.0-QPSK-1	-APORT-2.png	> saved		STATUS			



### Port B, Channel Position B, LTE 20.0 MHz

🊺 Keysight	Spectrum Analyzer - Swept SA					
<mark>(X)</mark> RL Marker	RF 50 Ω ADC	H7	ENSE:INT	ALIGN AUTO #Avg Type:	10:32:53 RMS TF	AM Aug 31, 2018 RACE 1 2 3 4 5 6
in an ton		PNO: Fast 😱 IFGain:Low	Trig: Free Run #Atten: 22 dB			
10 dB/div	Ref Offset 40.76 dB Ref 42.53 dBm				Mkr1 2.6 -20	77 8 GHz 6.28 dBm
32.5						
22.5						
12.5						
2.53						
-7 47						
-17.5					4	-19.02 dBm
-27.5						
-37.5						
-47.5						
Start 3 #Res B\	KHZ N 1.0 MHz	#VBV	V 3.0 MHz		#Sweep 20.00 s	3.000 GHz s (2000 pts)
MSG				🚺 STATUS 🚺	DC Coupled	

🊺 Key	sight Spectrum Analyzer - Sv	vept SA							
L <mark>XI</mark> RI	- RF 50 S	2 AC		SENSE:INT	A	IGN AUTO		10:33:17	AM Aug 31, 2018
Mar	ker 1 3.8999499	74987 GHz	PNO: Fast 🕞	Trig: Free   #Atten: 6 d	Run IB	#Avg Type:	RMS	TR	ACE 1 2 3 4 5 6 TYPE WWWWWW DET A NNNNN
10 dE	Ref Offset 43 3/div Ref 22.83	3.59 dB dBm						Mkr1 3. -38	.900 GHz 3.17 dBm
12.8									
2.83									
-7.17									
-17.2									-19.02 dBm
-27.2	1								
-37.2	m h								
-47.2									
-67.2									
Star	t 3.000 GHz							Stop 1	0.000 GHz
#Res	SBW 1.0 MHz		#VE	W 3.0 MHz			#Swe	ep 20.00 s	s (2000 pts)
mod	Prile SCOE-2NBTG1	12-20.0-QP3K-	-b-AFORT-T.phg-	Saved		Noral05			

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🊺 Ke	ysight Spe	ctrum An	alyzer - Swept SA										
LXI R	L	RF	50 Ω AC				SENSE:INT		ALI	GN AUTO	DMC	10:33:41	AM Aug 31, 2018
Mar	ker 1	17.3	58679339	670 GHz	PNO: Fast IFGain:High	₽	Trig: Free #Atten: 0 d	Run IB		#Avg Type:	RIVIS	1	
10 di	B/div	Ref C <b>Ref</b>	offset 48.23 o 24.64 dBn	iB n								Mkr1 17 -3	.359 GHz 5.16 dBm
LOg													
14.6													
4.64													
-5.36													
-15.4													40.00 10-
-25.4													-19.02 dBm
-36.4						~		~~~~		~~~		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	
-45.4													
-55.4													
-65.4													
Star #Re	t 10.0 s BW	00 GH 1.0 M	z Hz		#	VB	W 3.0 MHz				#Swe	Stop 2 ep 20.00 s	20.000 GHz 5 (2000 pts)
MSG 🤇	🎝 File <	CSE-2	2NB1G1L-20	.0-QPSK-E	B-APORT-2.p	ong>	saved			to status			

Port B, Channel Position M, LTE 20.0 MHz

💓 Keysight Sp	ectrum Analyzer - Swept SA								
Marker 1	2.68384073780	69 GHz		SENSE:INT	AL	#Avg Typ	e:RMS	10:35:27 TR	AM Aug 31, 2018 ACE 1 2 3 4 5 6
		P IF	NO: Fast 🖵 Gain:Low	#Atten: 22	dB				
10 dB/div	Ref Offset 40.76 d Ref 42.53 dBm	в						Mkr1 2.6 -26	83 8 GHz 5.32 dBm
209						1			
32.5									
22.5						L			
12.5									
2.53									
-7.47									
-17.5									-19.02 dBm
-27.5									1
-21.5									
-37.5									
-47.5									
Start 3 kl	lz							Stop	3.000 GHz
#Res BW	1.0 MHz		#VB	W 3.0 MHz		T- CTATIO	#Swe	ep 20.00 s	(2000 pts)
	iment Completed					10 STATUS			

# No.I18Z61350-WMD01 Page205of238



🊺 Key	sight Spectrum Analyzer - Swept SA					o đ
LXI RL	- RF 50 Ω AC		SENSE:INT	ALIGN	AUTO	10:35:51 AM Aug 31, 2018 TRACE 1 2 3 4 5 6
mean	(6) 1 5.5504052540	PNO: Fast IFGain:Low	Trig: Free #Atten: 6 c	Run IB		DET A N N N N
10 dE	Ref Offset 43.59 c 3/div Ref 22.83 dBm	iB 1				Mkr1 3.938 GHz -35.72 dBm
10.0						
12.8						
2.83						
-7.17						
-17.2						-19.02 dBm
-27.2						
-37.2			~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	
-47.2						
-57.2						
-67.2						
Start #Res	t 3.000 GHz s BW 1.0 MHz	#	VBW 3.0 MHz		#Swe	Stop 10.000 GHz ep 20.00 s (2000 pts)
MSG 🤕	File <cse-2nb1g1l-20< th=""><th>.0-QPSK-M-APORT-1.p</th><th>ong&gt; saved</th><th></th><th>STATUS</th><th></th></cse-2nb1g1l-20<>	.0-QPSK-M-APORT-1.p	ong> saved		STATUS	

🊺 Key:	sight Spe	trum Ar	alyzer - Swe	pt SA									
LXI RL		RF	50 Ω		CHE		S	ENSE:INT		ALIGN AUTO	PMS	10:36:15 TE	AM Aug 31, 2018
Man	ter 1	17.3	000010	5409Z1	GHZ F	PNO: Fast Gain:High	Ŧ	Trig: Free F #Atten: 0 d	Run B	mang type.			
10 dB	/div	Ref ( Ref	offset 48. <b>24.64 d</b>	23 dB I <b>Bm</b>								Mkr1 17 -3	.364 GHz 5.25 dBm
14.6													
4.64 -													
-5.36													
-15.4 -													-19.02 dBm
-25.4													
35 A											<b>∮</b> <sup>1</sup>		
-33.4													
-45.4													
-55.4													
-55.4													
-65.4													
Start #Res	10.00 BW	00 GH	lz Hz			#	VBV	V 3.0 MHz			#Sw	Stop 2 eep 20.00 s	20.000 GHz 5 (2000 pts)
MSG 🤙	File <	CSE-2	NB1G1L	20.0-QF	PSK-M-A	PORT-2.p	ong>	saved					



### Port B, Channel Position T, LTE 20.0 MHz

🎉 Keysight Sp	ectrum Analyzer - Swept SA					- F 💌
IXI RL Marker 1	RF 50 Ω Δ DC	CH7	SENSE:INT	ALIGN AUTO #Avg Type:	10:37: RMS	48 AM Aug 31, 2018 TRACE 1 2 3 4 5 6
marker		PNO: Fast IFGain:Low	Trig: Free Run #Atten: 22 dB			
10 dB/div	Ref Offset 40.76 dB Ref 42.53 dBm				Mkr1 2.0 -2	680 8 GHz 26.29 dBm
32.5						
22.5						
12.5						
2.53						
-7.47						
-17.5						-10.02 dBm
27.6				k,		<b>↓</b> <sup>1</sup>
-27.5						
-37.5						
-47.5						
Start 3 kl #Res BW	lz 1.0 MHz	#VB	W 3.0 MHz		Sto #Sweep <u>20.00</u>	p 3.000 GHz s (2000 pts)
мsg 🔱 Aligi	nment Completed			🚺 status 🚹	DC Coupled	

🊺 Ke	ysight Spect	rum Ana	ilyzer - Swept SA										
LXI R	L	RF	50 Ω AC			SE	NSE:INT		ALIG	IN AUTO		10:38:12	AM Aug 31, 2018
Mar	ker 1 3	3.959	4797398	70 GHz	PNO: Fast IFGain:Low	⊋	Trig: Free I #Atten: 6 d	Run B		#Avg Type:	RMS	TH	ACE 1 2 3 4 5 6 TYPE WWWWWW DET A NNNNN
10 di	B/div	Ref Of Ref 2	ffset 43.59 d 2 <b>2.83 dBn</b>	iB n								Mkr1 3 -3	.959 GHz 5.03 dBm
12.8													
2.0													
-7.17													
.17.0													
-17.2													-19.02 dBM
			• <sup>1</sup>										
-37.2	~~~~	~			~~~~				~		~~~~	·	
-67.2													
Star #Re	t 3.000 s BW 1	GHz .0 MH	lz		#\	/BW	/ 3.0 MHz				#Swe	Stop 1 ep 20.00 s	0.000 GHz (2000 pts)
MSG	₽File <0	CSE-2	NB1G1L-20	.0-QPSK-T-	APORT-1.pr	ng> si	aved		۵	STATUS			



🊺 Kej	ysight Spe	ctrum A	nalyzer - Swept SA								
Mar	ker 1	R⊧ 17.3	73686843	422 GHz	PNO: Fast 🕞 FGain:High	Trig: Free #Atten: 0 c	Run IB	#Avg Type:	RMS	10:38:36 TF	AM Aug 31, 2018 ACE 1 2 3 4 5 6 TYPE WWWWWW DET A NNNNN
10 dE	B/div	Ref ( <b>Ref</b>	Offset 48.23 o <b>24.64 dBn</b>	iB n						Mkr1 17 -3	.374 GHz 5.05 dBm
14.0											
4.64											
-5.36											
-15.4											-19.02 dBm
-25.4									.1		
-35.4									~ <u>·</u>	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~
-45.4											
-55.4											
-65.4											
Star #Re:	t 10.0 s BW	00 GI 1.0 M	Hz IHz		#VE	W 3.0 MHz			#Swe	Stop 2 ep 20.00 s	20.000 GHz 5 (2000 pts)
MSG 🤇	🎝 File <	CSE-	2NB1G1L-20	.0-QPSK-T-A	PORT-2.png>	> saved		<b>STATUS</b>			

Configuration NB-IoT-GB+GSM+LTE-MIMO-MC-1(1GB QPSK +1GSM GMSK +1LTE QPSK)

Channel Bandwidth	RBW	Limit	
	(MHz)	(dBm)	
GB: 10.0 MHz			
G: 250 KHz	1.0	-19.02	
L:10.0 MHz			

Port B, Channel Position M

🊺 Ke	ysight Spectru	um Analyzer - S	Swept SA									
LXI R	L	RF 50	Ω 🚹 DC			SENSE:INT	A	LIGN AUT	0		10:47:59	AM Aug 31, 2018
Mar	ker 1 2.	.683840	737869	GHz	PNO: Fast 🕞 FGain:Low	Trig: Free #Atten: 22	Run dB	#Av	g Type:	RMS	TR	ACE 1 2 3 4 5 6 TYPE WWWWWWW DET A NNNNN
10 di	B/div	Ref Offset 4 <b>Ref 42.53</b>	10.76 dB d <b>Bm</b>							I	Mkr1 2.6 -26	83 8 GHz 5.27 dBm
32.5												
22.5									<u></u>			
12.5												
2.53												
-7.47												
-17.5									$\parallel$			-19.02 dBm
-27.5									,] [			
-37.5												
-47.5												
Star #Re	t3 kHz sBW 1.	0 MHz			#VE	3W 3.0 MHz				#Swee	Stop ep 20.00 s	3.000 GHz (2000 pts)
MSG 🤇	Alignme	ent Comple	eted						TUS 🚺	DC Coupled		

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🊺 Keysig	ht Spectrum Analyzer - Swept SA					– đ <mark>×</mark>
Marke	er 1 3.959479739870 €	GHz PNO: Fast IFGain:Low	Trig: Free Run #Atten: 6 dB	ALIGN AUTO #Avg Type: I	RMS	10:48:23 AM Aug 31, 2018 TRACE 1 2 3 4 5 6 TYPE WWWW DET A N N N N N
10 dB/d	Ref Offset 43.59 dB liv Ref 22.83 dBm					/lkr1 3.959 GHz -38.17 dBm
12.8						
2.83 —						
-7.17						
-17.2						-19.02 dBm
-27.2						
-37.2						
-47.2						
-57.2						
-67.2						
Start 3 #Res E	3.000 GHz BW 1.0 MHz	#VBV	V 3.0 MHz		#Sweep	Stop 10.000 GHz 20.00 s (2000 pts)
MSG 🧼 F	File <cse-1gb1g1l-qpsk-< th=""><th>M-APORT-1.png&gt; save</th><th>d</th><th>STATUS</th><th></th><th></th></cse-1gb1g1l-qpsk-<>	M-APORT-1.png> save	d	STATUS		

🊺 Keys	ight Spectrum	Analyzer - Swept S	A							
LXI RL	R 1 17	F 50 Ω A			SENSE:INT		ALIGN AUTO	PMS	10:48:48	AM Aug 31, 2018
Mark	er 1 17.	505001040		PNO: Fast 🕞 FGain:High	Trig: Free #Atten: 0 d	Run IB	with the			
10 dB	Re /div <b>R</b> e	f Offset 48.23 ef 24.64 dBr	dB n						Mkr1 17 -3	.364 GHz 5.04 dBm
209										
14.6										
4.64										
-5.36										
-15.4										-19.02 dBm
-25.4										
-35.4								. ♦1		
-45.4										
-55.4										
-65.4										
Start	10 000 0	2H7							Stop	0 000 CHz
#Res	BW 1.0	MHz		#VB	W 3.0 MHz			#Swe	ep 20.00 s	(2000 gHz)
MSG							<b>STATUS</b>			

Configuration NB-IoT-GB+GSM+LTE-MIMO-MC-2(1GB QPSK +4GSM GMSK +1LTE QPSK)

Channel Bandwidth	RBW	Limit
	(MHz)	(dBm)
GB: 10.0 MHz		
G: 250 KHz	1.0	-19.02
L:10.0 MHz		



Port B, Channel Position M

🊺 Ke	ysight Spec	trum Analy	zer - Swept SA					_					
Mar	ker 1 2	<sup>RF</sup> 2.6808	50 Ω <u>A</u> DC 3392401	20 GHz		SENSE:INT	- D	ALI	GN AUTO #Avg	Type:	RMS	10:52:23 TF	AM Aug 31, 2018 ACE 1 2 3 4 5 6
					PNO: Fast C IFGain:Low	Atten: 2	2 dB						DETANNNN
10 di	3/div	Ref Off Ref 42	set 40.76 c 2 <b>.53 dBm</b>	B								Mkr1 2.6 -20	80 8 GHz 3.25 dBm
109													
32.5													
22.5													
12.5													
2.53										Í			
-7.47													
-17.5													-19.02 dBm
													1
-27.5										- Leener			
-37.5													
-47.5													
Star #Re	t3 kHz sBW_1	O MH	7		#\/	BW 3.0 MH	7				#Swe	Stop	3.000 GHz
MSG 🤇	↓ File <0	CSE-1G	B1G1L-QF	SK-M-APC	RT-3.png> sa	aved				us 🚺	DC Coupled	op 20100 .	-(2000-p13)

🊺 Kej	ysight Spe	ctrum A	nalyzer - Swept S	A								
l <mark>XI</mark> R	L	RF	50 Ω A			S	ENSE:INT		ALIGN AUTO	DMC	10:52:47	AM Aug 31, 2018
Mar	ker 1	3.62	6813406	703 GHz	PNO: Fast IFGain:Low	₽	Trig: Free   #Atten: 6 d	Run B	#Avg Type:	RIVIS	T T	
10 dE	3/div	Ref ( Ref	Offset 43.59 22.83 dBi	dB m							Mkr1 3. -38	.627 GHz 3.48 dBm
Log												
12.0												
12.0												
2.83												
2.00												
-7 17												
-17.2												-19.02 dBm
												-10.02 (10)
-27.2												
			1									
-37.2		_										
	$\sim\sim$	$\sim$	the			~						
-47.2												
-57.2												
-67.2												
Star	t 3.00	GH	z								Stop 1	0.000 GHz
#Re	s BW	1.0 N	Hz		#	VBV	V 3.0 MHz			#Swe	ep 20.00 s	(2000 pts)
MSG 🤇	€ File >	CSE-	1GB4G1L-C	PSK-M-APC	ORT-1.png> s	save	d		<b>I</b> STATUS			



🊺 Keys	ight Spectrum	Analyzer - Swept SA								
Mark	er 1 17.3	50 Ω AC 373686843	422 GHz	PNO: Fast 🕞 FGain:High	Trig: Free #Atten: 0 d	Run IB	ALIGN AUTO #Avg Type:	RMS	10:53:11 TF	AM Aug 31, 2018 ACE 1 2 3 4 5 6 TYPE WWWWW DET A NNNNN
10 dB.	Ref /div <b>Re</b>	f Offset 48.23 c f <b>24.64 dB</b> m	iB n						Mkr1 17 -3	.374 GHz 5.01 dBm
14.6										
4.64										
-5.36										
-15.4										-19.02 dBm
-25.4										
-35.4								<b>♦</b> <sup>1</sup>		
-45.4										
-55.4										
05.4										
-60.4										
Start #Res	10.000 G BW 1.0	GHz MHz		#VB	W 3.0 MHz	<u> </u>		#Swe	Stop 2 ep 20.00 s	20.000 GHz 5 (2000 pts)
MSG 🤳	File <cse< th=""><th>-1GB4G1L-QF</th><th>PSK-M-APOF</th><th>₹T-2.png&gt; sav</th><th>ed</th><th></th><th><b>I</b>STATUS</th><th></th><th></th><th></th></cse<>	-1GB4G1L-QF	PSK-M-APOF	₹T-2.png> sav	ed		<b>I</b> STATUS			

Configuration NB-IoT+WCDMA+LTE-MIMO-MC-2 (2SA QPSK +1WCDMA QPSK +1LTE QPSK)

Channel Bandwidth	RBW	Limit
	(MHz)	(dBm)
SA: 250 KHz		
W: 5.0 MHz	1.0	-19.02
L:1.4 MHz		
SA: 250 KHz		
W: 5.0 MHz	1.0	-19.02
L:3.0 MHz		
SA: 250 KHz		
W: 5.0 MHz	1.0	-19.02
L:5.0 MHz		
SA: 250 KHz		
W: 5.0 MHz	1.0	-19.02
L:10.0 MHz		
SA: 250 KHz		
W: 5.0 MHz	1.0	-19.02
L:15.0 MHz		
SA: 250 KHz		
W: 5.0 MHz	1.0	-19.02
L:20.0 MHz		



### Port B, Channel Position B, LTE 1.4 MHz

🊺 Keys	sight Spect	rum Analyzer - Swept SA	4	_						- ē 🗙
L <mark>XI</mark> RL Mark		RF 50 Ω A DO	22 CH7		SENSE:INT		ALIGN AUTO #Avg Tv	pe: RMS	10:56:18 TF	AM Aug 31, 2018
Meth	CGI I Z			PNO: Fast G	Trig: Free #Atten: 22	Run dB			1	
10 dB	//div	Ref Offset 40.76 o Ref 42.53 dBn	dB N						Mkr1 2.6 -26	74 8 GHz 6.16 dBm
LUg							1			
32.5 -										
22.5 -										
12.5 -										
2.53 -										
-7.47 -										
-17.5 -										-10.02 dBm
07.5										1
-27.5 -										
-37.5 -										
-47.5 -										
Start	3 kHz								Stop	3.000 GHz
#Res	BW 1	O MHZ		#VB	W 3.0 MHz		el	#Swe	eep 20.00 s	s (2000 pts)
MSG 1	Prile <c< th=""><th>SE-IGB4G1L-Q</th><th>PSK-M-APOI</th><th>RI-3.png&gt; sav</th><th>ea</th><th></th><th>STATUS .</th><th>DC Coupled</th><th></th><th></th></c<>	SE-IGB4G1L-Q	PSK-M-APOI	RI-3.png> sav	ea		STATUS .	DC Coupled		

🊺 Ke	ysight Spec	trum Ana	alyzer - Swept SA								
l <mark>xi</mark> R	L	RF	50 Ω AC			SENSE:INT	A	LIGN AUTO		10:56:42	AM Aug 31, 2018
Mar	ker 1	3.626	8134067	03 GHz	PNO: Fast G	□ Trig: Free #Atten: 6 c	Run IB	#Avg Type:	RMS	TR	ACE 1 2 3 4 5 6 TYPE WWWWWWW DET A NNNNN
10 dE	3/div	Ref 0 Ref 2	ffset 43.59 c 2 <b>2.83 dB</b> m	IB 1						Mkr1 3 -38	.627 GHz 3.47 dBm
12.8											
2.83											
-7.17											
-17.2											-19.02 dBm
-27.2											
-37.2			Mar +								
-47.2											
-57.2											
-67.2											
Star #Re:	t 3.000 s BW 1	GHz	Hz		#VE	SW 3.0 MHz			#Swe	Stop 1 ep 20.00 s	0.000 GHz (2000 pts)
MSG 🤇	₽File <	CSE-2	NB1W1L-1.	4-QPSK-B-A	PORT-1.png>	• saved		STATUS			

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🊺 Ke	ysight Spe	ctrum Ar	nalyzer - Swept S	A								
LXI R	L	RF	50 Ω A	C		SE	ENSE:INT	AL	LIGN AUTO		10:57:06	AM Aug 31, 2018
Mar	ker 1	17.3	53676838	3419 GH	Z PNO: Fast IFGain:High	P	Trig: Free F #Atten: 0 d	Run B	#Avg Type:	RMS	IR I	DET A NNNNN
10 di	B/div	Ref C <b>Ref</b>	offset 48.23 <b>24.64 dB</b> r	dB n							Mkr1 17. -35	.354 GHz 5.05 dBm
LUg												
14.0												
4.64												
-5.36												
-15.4												-19.02 dBm
-25.4										▲1		
-35.4										~~~~	~~~~~	~~~~
-45.4												
-55.4												
-65.4												
Star #Po	t 10.0	00 GH	iz		-44		( 2 0 MH=			#0	Stop 2	20.000 GHz
#Re	o ⊑un i Pile <	CSE-2	2NB1W1L-1	.4-QPSK-B	# APORT-2.pn	g> sa	aved		<b>STATUS</b>	#5W6	ep 20.00 s	r (zooo prs)

Port B, Channel Position M, LTE 1.4 MHz

🎉 Keysight	Spectrum Analyzer - Swept SA						(	
Marker	RF 50 Ω <u>A</u> DC 1 2.67633699349	7 GHz PNO: Fast IFGain:Low	Trig: Free F #Atten: 22 of	Run dB	IGN AUTO #Avg Type:	RMS	TRACE 1 2 3 4 5 TYPE WWWWW DET A NNNN	
10 dB/div	Ref Offset 40.76 dE Ref 42.53 dBm	3				N	/kr1 2.67 -26	6 3 GHz 18 dBm
32.5								
22.5								
12.5								
2.53								
-7.47								
-17.5					L.		1	-19.02 dBm
-37.5								
-47.5								
Start 3 I	KHZ						Stop 3	.000 GHz
#Rès Bi Msg 🗼 Fil	W 1.0 WIHŻ e <cse-2nb1w1l-1.4-< td=""><td>#\ QPSK-M-APORT-3.pn</td><td>7BW 3.0 MHz g&gt; saved</td><td></td><td></td><td>#Swee DC Coupled</td><td>p 20.00 s</td><td>(2000 pts)</td></cse-2nb1w1l-1.4-<>	#\ QPSK-M-APORT-3.pn	7BW 3.0 MHz g> saved			#Swee DC Coupled	p 20.00 s	(2000 pts)

# No.I18Z61350-WMD01 Page213of238



🊺 Ke	ysight Spectrum	Analyzer - Swept SA	·							
Mar	ker 1 3.9	F 50 Ω AC 244622311	16 GHz	PNO: Fast 🕞 FGain:Low	Trig: Free #Atten: 6 d	Run IB	#Avg Type:	RMS	11:02:02 TR 1	AM Aug 31, 2018 ACE 1 2 3 4 5 6 TYPE WWWWWW DET A NNNNN
10 di Log	Rei B/div <b>Re</b>	f Offset 43.59 o f 22.83 dBn	iB n						Mkr1 3 -36	.924 GHz 3.32 dBm
12.8										
2.83										
-7.17										
-17.2										-19.02 dBm
-27.2		<b>▲</b> 1								
-37.2	~~~~									
-47.2										
-57.2										
-67.2										
Star #Re	t 3.000 GI s BW 1.0	Hz MHz		#VB	W 3.0 MHz			#Swe	Stop 1 ep 20.00 s	0.000 GHz (2000 pts)
MSG 🤇	↓File <cse< p=""></cse<>	E-2NB1W1L-1.	4-QPSK-M-A	PORT-1.png>	saved					

W Keysight Spectrum Analyzer - Swept SA W RL RF 50 Ω AC Marker 1 17.358679339670 GH		ALIGN AUTO #Avg Type: RMS	11:02:26 AM Aug 31, 2018 TRACE 1 2 3 4 5 6 TYPE WWWWWWW
Ref Offset 48.23 dB	IFGain:High #Atten: 0 dB		Mkr1 17.359 GHz
14.6			
4.64			
-5.36			
-15.4			
.25 A			-19.02 dBm
		<b>1</b>	
-35.4			
-45.4			
-55.4			
-65.4			
Start 10.000 GHz			Stop 20.000 GHz
#Res BW 1.0 MHz	#VBW 3.0 MHz	#Swe	eep 20.00 s (2000 pts)



### Port B, Channel Position T, LTE 1.4 MHz

🊺 Keysig	ht Spectrum Analyzer - Swept SA					
Marke	RF 50 Ω ▲ DC F 1 2 68684223561	18 GHz	SENSE:INT	ALIGN AUTO #Avg Type:	11:05:1 RMS T	6 AM Aug 31, 2018 RACE 1 2 3 4 5 6
		PNO: Fast FGain:Low	Trig: Free Run #Atten: 22 dB			DET A NNNN
10 dB/d	Ref Offset 40.76 di liv Ref 42.53 dBm	В			Mkr1 2.6 -2	86 8 GHz 6.26 dBm
				li		
32.5						
22.5 —						
12.5						
12.5						
2.53 —						
-7.47 —						
-17.5						10.02 48m
						1
-27.5						
-37.5						
-47.5						
Start 3 #Res I	3 kHz 3W 1.0 MHz	#VE	3W 3.0 MHz		Stop #Sweep 20.00	3.000 GHz s (2000 pts)
MSG 🤳	ile <cse-2nb1w1l-1.4< th=""><th>-QPSK-M-APORT-3.png&gt;</th><th>▶ saved</th><th>🚺 status 🚺</th><th>DC Coupled</th><th></th></cse-2nb1w1l-1.4<>	-QPSK-M-APORT-3.png>	▶ saved	🚺 status 🚺	DC Coupled	

🊺 Ke	ysight Spect	trum Anal	vzer - Swept SA									o đ 🗙
LXI R	L	RF	50 Ω AC			S	ENSE:INT		ALIGN AUTO	5.40	11	:05:40 AM Aug 31, 2018
Mar	ker 1 3	3.9699	9849924	96 GHz	PNO: Fast IFGain:Low	P	Trig: Free F #Atten: 6 d	Run B	#Avg Ty	/pe: RMS		TRACE 1 2 3 4 5 6 TYPE WWWWWW DET A N N N N N
10 di	B/div	Ref Off Ref 2	set 43.59 d 2.83 dBm	B							Mkr	1 3.970 GHz -35.43 dBm
LUg												
12.8												
2.83												
-7.17												
-17.2												-19.02 dBm
-27.2			<b>♦</b> <sup>1</sup>									
-37.2	~~~~	~				~				~~~~	~	
-47.2												
-57.2												
-67.2												
Star #Re	t 3.000 s BW <u>1</u>	GHz .0 MH	z		#	VBV	₩ 3.0 MHz			#\$	St Sweep <u>20</u>	op 10.000 GHz .00 s (2000 <u>pts)</u>
MSG 🤇	₽File <0	CSE-2N	IB1W1L-1.4	1-QPSK-T-A	PORT-1.pn	g> s	aved					

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🊺 Ke	ysight Spe	ctrum Ar	nalyzer - Swept S	A								
LXI R	L	RF	50 Ω A	C			SENSE:INT		ALIGN AUTO		11:06:04	AM Aug 31, 2018
Mar	ker 1	17.3	6368184	0921 GF	IZ PNO: Fa IFGain:Hi	ist 🖵	Trig: Free #Atten: 0 c	Run IB	#Avg Type	RMS	16	ACE     1     2     3     4     5     6       TYPE     WWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWW
10 di	B/div	Ref ( <b>Ref</b>	offset 48.23 <b>24.64 dB</b> I	dB n							Mkr1 17 -3	.364 GHz 5.03 dBm
146												
14.0												
4.04												
-0.30												
-15.4												-19.02 dBm
-25.4										♦1		
-36.4					~							~~~~
-45.4												
-55.4												
-65.4												
Star #Re	t 10.0 s BW	00 GH 1.0 M	lz Hz			#VB	W 3.0 MHz			#Swe	Stop 2 ep 20.00 s	20.000 GHz 5 (2000 pts)
MSG 🤇	🎝 File <	CSE-2	2NB1W1L-1	.4-QPSK-	T-APORT-2	2.png>	saved		<b>STATUS</b>			

Port B, Channel Position B, LTE 3.0 MHz

🎉 Keysight Sp	ectrum Analyzer - Swept SA									
LXI RL	RF 50 Ω 🚹 DC			SENSE:INT		ALIGN AL	ТО	DMC	11:09:17	AM Aug 31, 2018
Marker 1	2.68834298449	92 GHz	PNO: Fast 🖵 Gain:Low	Trig: Free #Atten: 22	Run dB	#4	vg iype	RIVIS	1	
10 dB/div	Ref Offset 40.76 d Ref 42.53 dBm	в							Mkr1 2.6 -26	88 3 GHz 5.27 dBm
209							Li.			
32.5							ľ.			
22.5										
12.5										
2.53										
-7.47										
17.5										
-17.5										-19.02 dBm
-27.5							/ N			
-37.5										
-47.5										
Start 3.kk	7								Ston	3 000 CHz
#Res BW	1.0 MHz		#VB	W 3.0 MHz				#Sw	eep 20.00 s	5.000 GH2 5 (2000 pts)
<mark>мsg</mark> 🧼 Aligr	nment Completed						ratus 🚺	DC Coupled		

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🊺 Key	sight Spectrum	Analyzer - Swept SA								- F ×
Mari	ker 1 3.63	50 Ω AC 303151575	79 GHz	PNO: Fast G	Trig: Free #Atten: 6 d	Run IB	HAVg Type:	RMS	11:09:41 TR 1	AM Aug 31, 2018 ACE 1 2 3 4 5 6 TYPE WWWWWW DET A NNNNN
10 dE	Ref 3/div <b>Ref</b>	Offset 43.59 of 22.83 dBn	iB n						Mkr1 3 -38	.630 GHz 3.46 dBm
12.8										
2.83										
-7.17										
-17.2										-19.02 dBm
-27.2										
-37.2										
-47.2										
-57.2										
-67.2 :										
Star	3.000 GH	17							Stop 1	0.000 GHz
#Res	5 BW 1.0 M	ИНz		#VB	W 3.0 MHz			#Swe	ep 20.00 s	(2000 pts)
MSG 🤙	File <cse< th=""><th>-2NB1W1L-3.</th><th>0-QPSK-B-A</th><th>PORT-1.png&gt;</th><th>saved</th><th></th><th></th><th></th><th></th><th></th></cse<>	-2NB1W1L-3.	0-QPSK-B-A	PORT-1.png>	saved					

Marker 1	RF 50 Ω AC 17.368684342	171 GHz	SENSE:INT	AL	IGN AUTO #Avg Type:	RMS	11:10:05 TR 1	AM Aug 31, 2018 ACE 1 2 3 4 5 6 YPE
10 dB/div	Ref Offset 48.23 d Ref 24.64 dBm	IFGain:High _ IB	#Atten: 0 d	В			Mkr1 17. -34	369 GHz .97 dBm
14.6								
4.64								
-5.36								-19.02 dBm
-25.4						<b>▲</b> 1		
-35.4				~~~~~		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		~~~~
-55.4								
-65.4								
Start 10.0 #Res BW	000 GHz 1.0 MHz <cse-2nb1w1l-3.0< th=""><th>#V D-QPSK-B-APORT-2.png</th><th>BW 3.0 MHz &gt; saved</th><th></th><th>STATUS</th><th>#Swe</th><th>Stop 2 ep 20.00 s</th><th>0.000 GHz (2000 pts)</th></cse-2nb1w1l-3.0<>	#V D-QPSK-B-APORT-2.png	BW 3.0 MHz > saved		STATUS	#Swe	Stop 2 ep 20.00 s	0.000 GHz (2000 pts)



### Port B, Channel Position M, LTE 3.0 MHz

🊺 Key	/sight Spe	ctrum An	alyzer - Swept	SA					_					
LXI RI		RF	50 Ω 🚹	DC			SENSE:INT		ALI	GN AUTO	<b>T</b>	DMC	11:11:59	AM Aug 31, 2018
Mar	ker 1	2.67	1837742	371 GF	TZ PI IFC	NO: Fast Gain:Low	Trig: Free #Atten: 22	Run dB		#Avg	Type.	RWIS	1	
10 dE	3/div	Ref C <b>Ref</b> 4	offset 40.76 42.53 dB	dB m									Mkr1 2.6 -26	77 8 GHz 6.17 dBm
LUg														
32.5										f				
22.5														
12.5														
2.53														
-7.47														
-17.5														-10.02 dBm
07.5										ļ				1
-27.5				_							<b>\</b>			
-37.5														
-47.5														
Star #Res	t3 kH sBW	z 1.0 M	Hz			#VI	BW 3.0 MHz	<u> </u>				#Swe	Stop	3.000 GHz (2000 pts)
MSG 🤇	File <	CSE-2	NB1W1L-	3.0-QPSK	K-B-APC	ORT-3.png	> saved			<b>Ilo<mark>statu</mark></b>	us 🚹	DC Coupled		

🊺 Ke	ysight Spec	trum An	alyzer - Swept SA								
l <mark>xi</mark> R	L	RF	50 Ω AC			SENSE:INT	A	LIGN AUTO		11:12:23	AM Aug 31, 2018
Mar	ker 1	3.924	14622311	16 GHz	PNO: Fast G	⊃ Trig: Free #Atten: 6 c	Run IB	#Avg Type:	RMS	TR	ACE 1 2 3 4 5 6 TYPE WWWWWW DET A NNNNN
10 dE Log	3/div	Ref 0 Ref 1	ffset 43.59 c 2 <b>2.83 dBm</b>	B						Mkr1 3. -36	.924 GHz 6.03 dBm
12.8											
2.83											
-7.17											
-17.2											-19.02 dBm
-27.2											
		~	↓ <sup>1</sup>								
	~~~~										
-67.2											
Star	1 3 000	GHZ								Stop 1	0.000 GHz
#Re:	s BW 1	.0 M	Hz		#VE	3W 3.0 MHz			#Swe	ep 20.00 s	s (2000 pts)
MSG 🤇	₽File <	CSE-2	NB1W1L-3.0	)-QPSK-M-A	APORT-1.png>	saved		STATUS			

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🊺 Ke	ysight Spec	trum An	alyzer - Swept SA								
L <mark>XI</mark> R	L	RF	50 Ω AC			SENSE:INT		ALIGN AUTO	DMS	11:12:47	AM Aug 31, 2018
Mar	Keri	17.30	05001040	921 GHZ	PNO: Fast ⊂ IFGain:High	Trig: Free #Atten: 0	Run dB	mitig Type.		1	
10 di	B/div	Ref C Ref 1	offset 48.23 o 24.64 dBn	1B N						Mkr1 17 -3	.364 GHz 5.01 dBm
109											
14.6											
4.64											
-5.36											
-15.4											-19.02 dBm
-25.4											
-35.4									<b>↓</b> <sup>1</sup>		
15 A											
-40.4											
-55.4											
-65.4											
Star	t 10.00	0 GH	İz						<i>"</i> °	Stop 2	20.000 GHz
#Re	i) File <	CSE-2	NB1W1L-3	0-QPSK-M-	#V	EW Sturivier		STATUS	#SWe	ep 20.00 s	(2000 pts)
	4 1 110 1	202-2			ortr z.prig	Survu		-0			

Port B, Channel Position T, LTE 3.0 MHz

🎉 Keysight Sp	ectrum Analyzer - Swept SA								
Marker 1	RF 50 Ω ▲ DC 2.67633699349	17 GHz PN IFG	NO: Fast 😱 Gain:Low	SENSE:INT Trig: Free F #Atten: 22	Run dB	LIGN AUTO #Avg Type	RMS	11:15:07 TR T	AM Aug 31, 2018 ACE 1 2 3 4 5 6 YPE WWWWWWW DET A NNNN
10 dB/div	Ref Offset 40.76 dE Ref 42.53 dBm	3						Mkr1 2.6 -26	76 3 GHz .10 dBm
32.5						4			
22.5									
12.5									
2.53									
-7.47									
-17.5									- <u>19.02</u> dBm
-27.5									
-37.5									
-47.5									
Start 3 kl #Res BW	Iz 1.0 MHz		#VB	W 3.0 MHz			#Swee	Stop ep 20.00 s	3.000 GHz (2000 p <u>ts</u> )
мsg 🔱 File	<cse-2nb1w1l-3.0-< td=""><td>-QPSK-M-APC</td><td>ORT-3.png&gt;</td><td>saved</td><td></td><td></td><td>DC Coupled</td><td></td><td></td></cse-2nb1w1l-3.0-<>	-QPSK-M-APC	ORT-3.png>	saved			DC Coupled		

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🊺 Ke	ysight Spectrum	Analyzer - Swept SA	1							- F ×
( <mark>X</mark> R Mar	ker 130	F 50 Ω AC	96 GHz		SENSE:INT	1	ALIGN AUTO #Avg Type:	RMS	11:15:32 TR	AM Aug 31, 2018
men		0000-1002-1		PNO: Fast	Trig: Free #Atten: 6 d	Run IB	• //		1	
	R	5 Offeret 42 50 /	, 10						Mkr1 3	.970 GHz
10 di	B/div Re	of 22.83 dBn	1 1						-35	5.58 dBm
LOg										
12.8										
2.83										
-7.17										
-17.2										-19.02 dBm
-27.2	<u> </u>									
		↓ ↓ <sup>1</sup>								
-37.2		n L								
-47.2										
-57.2										
-67.2										
Star	L 1 3.000 G	Hz							Stop 1	0.000 GHz
#Re	s BW 1.0	MHz		#VB	W 3.0 MHz			#Swe	ep 20.00 s	s (2000 pts)
MSG 🤇	File <csi< p=""></csi<>	E-2NB1W1L-3.	0-QPSK-T-AF	PORT-1.png>	saved		<b>STATUS</b>			

∭ Key: (XI RL Mark	sight Spec	trum Ar RF 17.3	alyzer - Swept S 50 Ω A 5867933	a ©   9670 GH:	IZ SENSE:INT A			ALIGN AUTO #Avg Type:	RMS	11:15:56	11:15:56 AM Aug 31, 2018 TRACE 1 2 3 4 5 6 TYPE	
40.15		Ref C	offset 48.23	dB	IFGain:High	#Atten: 0	dB			Mkr1 17	.359 GHz	
		Rei	24.04 UBI									
14.6												
4.64 -												
5 96												
-3.36												
-15.4											-19.02 dBm	
-25.4												
-35.4									, <b>, , , , , , , , , ,</b>	- <u></u> -		
-45.4					~~~~							
-55.4 -												
-65.4												
Start #Res	10.00 BW 1	0 GH	iz Hz		#V	BW 3.0 MHz	2		#Swe	Stop 2 ep 20.00 s	20.000 GHz 5 (2000 pts)	
MSG 🤙	File <	CSE-2	NB1W1L-3	.0-QPSK-T	-APORT-2.png	> saved						



### Port B, Channel Position B, LTE 5.0 MHz

🊺 Keys	Keysight Spectrum Analyzer - Swept SA										
L <mark>XI</mark> RL	RF 50 Ω AD		SENSE:INT	A	LIGN AUTO	11:18 2MS	13 AM Aug 31, 2018				
Mark	er 1 2.0795564912	PNO: Fa IFGain:L	st 😱 Trig: Fre ow #Atten: :	e Run 22 dB	with the second						
10 dB/	Ref Offset 40.76 Idiv Ref 42.53 dBr	dB N				Mkr1 2. -2	679 3 GHz 26.17 dBm				
32.5											
22.5											
12.5											
2.53											
-7.47											
17.5											
-17.5							↓ 1 10.02 dBm				
-27.5											
-37.5											
-47.5											
Start	3 kHz					Sto	n 3.000 GHz				
#Res	BW 1.0 MHz		#VBW 3.0 MH	Iz	1	#Sweep 20.00	s (2000 pts)				
MSG 🤳	File <cse-2nb1w1l-3< th=""><th>.0-QPSK-T-APORT-3</th><th>3.png&gt; saved</th><th></th><th></th><th>C Coupled</th><th></th></cse-2nb1w1l-3<>	.0-QPSK-T-APORT-3	3.png> saved			C Coupled					

🊺 Kej	ysight Spec	trum Ana	ilyzer - Swept SA								
L <mark>XI</mark> R	L	RF	50 Ω AC			SENSE:INT	A	LIGN AUTO	DMS	11:18:37	AM Aug 31, 2018
Mar	ker 1 .	3.633	8169084	54 GHZ	PNO: Fast G	☐ Trig: Free #Atten: 6 c	Run IB	#Avg Type.	RIVIS	1	DET A N N N N
10 dE	3/div	Ref Of Ref 2	ffset 43.59 d 2 <b>2.83 dBn</b>	lB n						Mkr1 3 -38	.634 GHz 3.44 dBm
42.0											
12.0											
2.83											
-7.17											
-17.2											-19.02 dBm
-27.2											
-37.2	~~~~	<b>_</b>	r								
-47.2											
-57.2											
-67.2											
Star	t 3.000	GHz								Stop 1	0.000 GHz
#Re	SBW 1	.0 MI	IZ		#VI	SW 3.0 MHz		1	#Swe	ep 20.00 s	s (2000 pts)
MSG 🤇	₽File <	CSE-2	NB1W1L-5.	0-QPSK-B-A	PORT-1.png>	saved		STATUS			

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🊺 Keysigh	t Spectrum Analyzer - Swept SA							
Marker	r 1 17.3586793390	670 GHz PNO: Fast IFGain:Hig	t Trig: Free h #Atten: 0	e Run dB	IGN AUTO #Avg Type:	RMS	11:19:01 TR. T	AM Aug 31, 2018 ACE 1 2 3 4 5 6 YPE WWWWWW DET A NNNNN
10 dB/di	Ref Offset 48.23 d Ref 24.64 dBm	В					Mkr1 17. -34	359 GHz .98 dBm
14.6								
4.64								
-5.36								
-15.4								-19.02 dBm
-25.4								
-35.4						<b>♦</b> <sup>1</sup>		
-33.4			~~~~					~~~~
-45.4								
-55.4								
-65.4								
Start 1 #Res B	0.000 GHz W 1.0 MHz		#VBW 3.0 MH	z		#Swe	Stop 2 ep 20.00 s	0.000 GHz (2000 pts)
MSG					STATUS			

Port B, Channel Position M, LTE 5.0 MHz

🎉 Keysight Sp	ectrum Analyzer - Swept SA					– F <mark>×</mark>	
Marker 1	RF 50 Ω <u>Λ</u> DC 2.683840737869 G	Hz PNO: Fast ⊂ IFGain:Low	SENSE:INT Trig: Free Run #Atten: 22 dB	ALIGN AUTO #Avg Type	RMS	TRACE 1 2 3 4 5 6 TYPE WWWWWW DET A N N N N N	
10 dB/div	Ref Offset 40.76 dB Ref 42.53 dBm				MI	kr1 2.683 8 GHz -26.24 dBm	
32.5				<mark> </mark>			
22.5							
12.5							
2.53							
-7.47							
-17.5						-19.02 dBm	
-27.5							
-47.5							
Start 3 kl						Stop 3 000 CHz	
#Res BW	1.0 MHz	#VB	W 3.0 MHz		#Sweep	20.00 s (2000 pts)	
MSG				🚺 status 🚹	DC Coupled		

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🊺 Ke	ysight Spectrum	Analyzer - Swept SA								
<mark>IXI</mark> R Mar	kor 130'	50 Ω AC	16 GHz		SENSE:INT	4	ALIGN AUTO #Avg Type:	RMS	11:22:22 TR	AM Aug 31, 2018
intea		022011		PNO: Fast 🖵 FGain:Low	Trig: Free #Atten: 6 d	Run B	•		1	
10 di	Ref B/div <b>R</b> e	Offset 43.59 c 7 22.83 dBm	iB 1						Mkr1 3. -37	.924 GHz 7.02 dBm
9										
12.8										
2.83										
-7.17										
-17.2										-19.02 dBm
-27.2										
		∳1								
-37.2	~~~	h								
-47.2										
-57.2										
-67.2										
star #Re	t 3.000 GI s BW 1.0 I	1Z VIHz		#VB	W 3.0 MHz			#Swe	Stop 1 ep 20.00 s	6 (2000 GHz
MSG 🤇	↓ File <cse< p=""></cse<>	-2NB1W1L-5.0	0-QPSK-M-A	PORT-1.png>	saved					

∭ Key <b>(XI</b> RL Marl	sight Spe	ctrum Ar RF	alyzer - Swept 50 Ω	SA AC   9670 (	247		SEI	NSE:INT		ALI	GN AUTO	RMS	11:22:46 TF	AM Aug 31, 2018
meon			5007555	3070	PI IFC	NO:Fast C Gain:High	₽	Trig: Free #Atten: 0 d	Run B		0 ,1			
10 dE	3/div	Ref ( Ref	)ffset 48.23 <b>24.64 dB</b>	3 dB ∙m									Mkr1 17 -3	.359 GHz 5.01 dBm
_03														
14.0														
4.64 -														
-5.36														
-15.4														-19.02 dBm
-25.4												▲1		
-35.4					~						~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~	~~~~
-45.4														
-55.4														
-65.4														
Stari #Res	t 10.0 5 BW	00 GH 1.0 M	iz Hz			#\	/BW	3.0 MHz				#Swe	Stop 2 ep 20.00 s	20.000 GHz 5 (2000 pts)
мsg 🔱 File <cse-2nb1w1l-5.0-qpsk-м-а< td=""><td>ORT-2.pn</td><td>g&gt; sa</td><td>ived</td><td></td><td>1</td><td>STATUS</td><td></td><td></td><td></td></cse-2nb1w1l-5.0-qpsk-м-а<>						ORT-2.pn	g> sa	ived		1	STATUS			



### Port B, Channel Position T, LTE 5.0 MHz

🊺 Key	/sight Spec	trum Analyzer - Swept S	A							F ×
LXI RI	L	RF 50 Ω 🚹 D	C		SENSE:INT	1	ALIGN AUTO		11:26:22	AM Aug 31, 2018
Mar	ker 1	2.6883429844	492 GHz	PNO: Fast 🕞 IFGain:Low	Trig: Free #Atten: 22	Run dB	#Avg Typ	e: RMS	TH	ACE 1 2 3 4 5 6 TYPE WWWWWWWW DET A NNNNN
10 dE	3/div	Ref Offset 40.76 Ref 42.53 dBr	dB n						Mkr1 2.6 -26	88 3 GHz 5.27 dBm
LUg							h.			
32.5										
22.5										
12.5										
2.53										
-7.47										
-17.5										-10.02 dBm
-27.5										1
-37.5										
.47.5										
-47.0										
Star #Res	t3 kH: sBW ′	z I.0 MHz		#VB	W 3.0 MHz			#Swe	Stop ep 20.00 s	3.000 GHz (2000 pts)
MSG 🤇	File <	CSE-2NB1W1L-5	.0-QPSK-M-A	PORT-3.png>	saved			DC Coupled		

🊺 Ke	ysight Spect	rum Analyzer - Swe	ept SA							
<b>lxi</b> R	L	RF 50 Ω	AC		SENSE:INT		ALIGN AUTO		11:26:45	AM Aug 31, 2018
Mar	ker 1 3	.96998499	92496 GHz	PNO: Fast 🕞	Trig: Free   #Atten: 6 d	Run B	#Avg Type:	RMS	TH	ACE 1 2 3 4 5 6 TYPE WWWWWWWW DET A NNNNN
10 di	B/div	Ref Offset 43. <b>Ref 22.83 d</b>	59 dB I <b>Bm</b>						Mkr1 3 -36	.970 GHz 3.31 dBm
LUg										
12.8										
2.83										
-7.17										
-17.2										-19.02 dBm
-27.2		1								
-37.2	~~~~	st.								
-47.2										
-57.2										
-67.2										
Star #Re	t 3.000 s BW 1	GHz		#\/B	W 3.0 MHz			#Swe	Stop 1	0.000 GHz
MSG 🤇	₽ File <c< th=""><th>SE-2NB1W1</th><th>L-5.0-QPSK-1</th><th>-APORT-1.png&gt;</th><th>saved</th><th></th><th>STATUS</th><th></th><th>op=20.00 t</th><th>-(Eero pro)</th></c<>	SE-2NB1W1	L-5.0-QPSK-1	-APORT-1.png>	saved		STATUS		op=20.00 t	-(Eero pro)

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🊺 Ke	ysight Spec	trum Ar	alyzer - Swept SA								
Mar	ker 1	R⊧ 17.3:	58679339	670 GHz	PNO: Fast 🕞 IFGain:High	Trig: Free #Atten: 0 c	Run IB	#Avg Type	RMS	TRACE 1 2 3 4 5 6 TYPE WWWWW DET A N N N N	
10 di Log	B/div	Ref C <b>Ref</b>	offset 48.23 c 24.64 dBm	IB 1						Mkr1 17 -34	.359 GHz 4.99 dBm
14.6											
4 64											
-5.36											
-15.4											
-25.4											-19.02 dBm
-35.4									↓ <sup>1</sup>		
-45.4									<u> </u>		
-55.4											
-65.4											
Star #Re	1 10.00 s BW 1	10 GH	lz Hz		#VE	3W 3.0 MHz			#Swe	Stop 2 ep 20.00 s	20.000 GHz 5 (2000 pts)
MSG 🤇	₽File <	CSE-2	NB1W1L-5.	0-QPSK-T-A	PORT-2.png>	saved		<b>STATUS</b>			

Port B, Channel Position B, LTE 10.0 MHz

🊺 Keysight Sp	ectrum Analyzer - Swept SA								
Marker 1	2.6868422356	18 GHz		SENSE:INT	A	#Avg Type	RMS	11:31:03 TR	AM Aug 31, 2018 ACE 1 2 3 4 5 6
		F	NO: Fast Gain:Low	#Atten: 22	Run dB				
10 dB/div	Ref Offset 40.76 d Ref 42.53 dBm	B						Mkr1 2.6 -26	86 8 GHz 6.24 dBm
32.5									
22.5									
12.5									
2.53									
7.47									
-7.47									
-17.5									-19.02 dBm
-27.5									<u>'</u>
-37.5									
-47.5									
Start 3 kl #Res BW	IZ 1.0 MHz		#VB	W 3.0 MHz			#Swe	Stop	3.000 GHz
MSG 🗼 File	<cse-2nb1w1l-5.0< td=""><td>)-QPSK-T-AP</td><td>ORT-3.png&gt;</td><td>saved</td><td></td><td></td><td>DC Coupled</td><td></td><td></td></cse-2nb1w1l-5.0<>	)-QPSK-T-AP	ORT-3.png>	saved			DC Coupled		

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🊺 Ke	ysight Spectrum	Analyzer - Swept SA								- F ×
Mar	ker 1 3.6	F 50 Ω AC 338169084	54 GHz	PNO: Fast	SENSE:INT Trig: Free #Atten: 6 d	Run IB	LIGN AUTO #Avg Type:	RMS	11:31:27 TR 1	AM Aug 31, 2018 ACE 1 2 3 4 5 6 TYPE WWWWW DET A NNNNN
10 di	Re B/div <b>R</b> e	f Offset 43.59 d f 22.83 dBn	dB n						Mkr1 3 -38	.634 GHz 3.42 dBm
12.8										
2.83										
-7.17										
-17.2										-19.02 dBm
-27.2										
-37.2	~~~~	1								
-47.2										
-57.2										
-67.2										
Star #Re	t 3.000 G s BW 1.0	Hz MHz		#VB	W 3.0 MHz			#Swe	Stop 1 ep 20.00 s	0.000 GHz (2000 pts)
MSG 🤇	File <cse< th=""><th>E-2NB1W1L-10</th><th>).0-QPSK-B-/</th><th>APORT-1.png</th><th>&gt; saved</th><th></th><th><b>STATUS</b></th><th></th><th></th><th></th></cse<>	E-2NB1W1L-10	).0-QPSK-B-/	APORT-1.png	> saved		<b>STATUS</b>			

〕 Key 🚺 RI Mari	/sight Spe L ker 1	RF <b>17.3</b>	nalyzer - Swep 50 Ω 636818	AC 40921	GHz		S	ENSE:INT		ALIGN AL	лто vg Туре:	RMS	11:31:51 TF	AM Aug 31, 2018 ACE <b>1 2 3 4 5 6</b>
		_			F	NO: Fast Gain:High	•	Trig: Free I #Atten: 0 d	Run B					
10 dE	3/div	Ref ( <b>Ref</b>	Offset 48.2 <b>24.64 di</b>	⊠dB Bm									Mkr1 17 -34	.364 GHz 4.96 dBm
209														
14.6														
4.64														
-5.36														
-15.4														-19.02 dBm
-25.4														
05.4												<b>♦</b> <sup>1</sup>		
-30.4		,-		~	~		~~				~~~/			~~~~
-45.4														
-55.4														
-65.4														
		~~ ~												
star #Res	t 10.0 s BW	1.0 M	HZ IHZ			#	VBV	V 3.0 MHz				#Swe	ep 20.00 s	(2000 GHZ
MSG 🤇	VFile •	CSE-	2NB1W1L	-10.0-QF	PSK-B-A	PORT-2.p	ng>	saved		t 🔊 s	TATUS			



### Port B, Channel Position M, LTE 10.0 MHz

🊺 Keysig	ht Spectrum Analyzer - Swept SA					d 💌
LXI RL	RF 50 Ω Λ DC		SENSE:INT	ALIGN AUTO	11:34:53 AM Au	ig 31, 2018
Marke	1 2.07955649124	PNO: Fast IFGain:Low	Trig: Free Run #Atten: 22 dB	mang type.	TYPE DET	
10 dB/d	Ref Offset 40.76 dE liv Ref 42.53 dBm	3			Mkr1 2.679 -26.14	3 GHz I dBm
				U		
32.5						
22.5 —						
12.5						
2.53						
-7.47						
-17.5						- <del>19.02 dBm</del>
-27.5 —						
-37.5	······					
-47.5						
Start 3 #Res I	3 kHz 3W 1.0 MHz	#VB	W 3.0 MHz		Stop 3.0 #Sweep 20.00 s (20	00 GHz 00 pts)
<mark>msg</mark> 連 F	File <cse-2nb1w1l-10.< th=""><th>0-QPSK-B-APORT-3.png&gt;</th><th>&gt; saved</th><th>🚺 status 🚹 D</th><th>C Coupled</th><th></th></cse-2nb1w1l-10.<>	0-QPSK-B-APORT-3.png>	> saved	🚺 status 🚹 D	C Coupled	

🊺 Kej	ysight Spec	trum Ana	ilyzer - Swept SA								
L <mark>XI</mark> R	L	RF	50 Ω AC			SENSE:INT	A	LIGN AUTO	DMS	11:35:16	AM Aug 31, 2018
Mar	ker 1 .	3.924	4622311	16 GHZ	PNO: Fast G	Trig: Free #Atten: 6 c	Run 1B	#Avg Type.	RIVIS	1	DET A N N N N
10 dE	3/div	Ref Of Ref 2	ffset 43.59 c 2 <b>2.83 dB</b> m	IB 1						Mkr1 3 -37	.924 GHz 7.22 dBm
42.0											
12.0											
2.83											
-7.17											
-17.2											-19.02 dBm
-27.2			<u>1</u>								
-37.2	~~~~	$\overline{}$	<u> </u>								
-47.2											
-57.2											
-67.2											
Star	t 3.000	GHz								Stop 1	0.000 GHz
#Re	s BW 1	.0 MH	Iz		#VE	3W 3.0 MHz			#Swe	ep 20.00 s	s (2000 pts)
MSG 🤇	File <	CSE-2	NB1W1L-10	.0-QPSK-M	APORT-1.png	<pre>&gt; saved</pre>					

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🊺 Ke	ysight Spec	trum An	alyzer - Swept SA								
Mar	ker 1	R⊧ 17.3	58679339	670 GHz	PNO: Fast G	Trig: Free #Atten: 0 c	Run 1B	#Avg Type:	RMS	11:35:40 TF	AM Aug 31, 2018 ACE 1 2 3 4 5 6 TYPE WWWWWW DET A NNNNN
10 dl Log	B/div	Ref C Ref 3	offset 48.23 c 24.64 dBm	IB 1						Mkr1 17 -34	.359 GHz 4.99 dBm
14.6											
4.64											
-5.36											
-15.4											-19.02 dBm
-25.4											
-35.4	<u> </u>								• <sup>1</sup>		~~~~
-45.4		_									
-55.4											
-65.4											
Star #Re	t 10.00	00 GH	lz Hz		#VE	W 3.0 MHz			#Swe	Stop 2	20.000 GHz
MSG	Ĵ)File <	CSE-2	NB1W1L-10	.0-QPSK-M	-APORT-2.png	> saved		STATUS			-(

Port B, Channel Position T, LTE 10.0 MHz

🊺 Key	/sight Spe	ectrum A	nalyzer - Swept	SA										
LXI RI	L	RF	50 Ω 🚹	DC			SENSE:INT		ALI	IGN AUTO	-		11:50:56	AM Aug 31, 2018
Mar	ker 1	2.67	9338491	246 GH	Z PNO: IFGai	:Fast 🖵	Trig: Free #Atten: 22	Run dB		#Avg	iype:	RWS	1	TYPE WWWWWW DET A NNNNN
10 dE	3/div	Ref ( Ref	Offset 40.76 <b>42.53 dB</b>	idB m									Mkr1 2.6 -26	79 3 GHz 5.27 dBm
209														
32.5														
22.5														
12.5														
2.53														
-7.47														
-17.5														-19 02 dBm
														1
-27.5														
-37.5														
-47.5														
Star	t 3 kH	z											Stop	3.000 GHz
#Res	s BW	1.0 N	1Hz			#VE	W 3.0 MHz			1 aren		#Swe	ep 20.00 s	s (2000 pts)
mSG C	Align	ment	completed							10 STATU	<u>s</u> Tr	JC Coupled		

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🊺 Ke	ysight Spectrun	n Analyzer - Swept SA								
I <mark>XI</mark> R Mar	ker 130	RF 50 Ω AC	96 GHz		SENSE:INT	1	ALIGN AUTO #Avg Type:	RMS	11:51:20 TR	AM Aug 31, 2018
intea				PNO: Fast 🖵 FGain:Low	Trig: Free #Atten: 6 d	Run IB				
10 di	Re B/div <b>R</b> e	ef Offset 43.59 o ef 22.83 dBn	1B n						Mkr1 3 -36	.970 GHz 6.49 dBm
Log										
12.8										
2.83										
-7.17										
-17.2										-19.02 dBm
27.0										
-21.2		▲1								
-37.2		r L _								
-47.2	· · · · · ·									
-67.2										
-67.2										
Star #Re	t 3.000 G s BW 1 <u>.0</u>	Hz MHz		#VB	W 3.0 MHz			#Swe	Stop 1 ep 20.00 s	0.000 GHz (2000 p <u>ts)</u>
MSG 🤇	↓File <cs< p=""></cs<>	E-2NB1W1L-10	).0-QPSK-T-A	PORT-1.png	> saved					

∭ Key (XI RI Mari	/sight Spe -   ker 1	ctrum Ar RF <b>17.3</b>	nalyzer - Swept S 50 Ω 5367683	a ac 8419 GH	z	SENSE:INT		ALIGN AUTO #Avg Type:	RMS	11:51:44 TF	AM Aug 31, 2018 ACE 1 2 3 4 5 6
					PNO:Fast ⊂ IFGain:High	Trig: Free #Atten: 0	Run dB				
10 dE	3/div	Ref ( Ref	Offset 48.23 <b>24.64 dB</b>	dB m						Mkr1 17 -34	.354 GHz 4.96 dBm
209											
14.6											
4.64											
-5.36											
-15.4											-19.02 dBm
-25.4											
05.4									<b>♦</b> <sup>1</sup>		
-35.4										~~~~~	
-45.4											
-55.4											
-65.4											
Star #Res	t 10.0 s BW	00 GH 1.0 M	HZ HZ		#V	BW 3.0 MHz			#Swe	Stop 2 ep 20.00 s	20.000 GHz (2000 pts)
MSG 🤇	File <	CSE-2	2NB1W1L-1	0.0-QPSK-	T-APORT-2.pn	g> saved		<b>STATUS</b>			



### Port B, Channel Position M, LTE 15.0 MHz

🎉 Keysight Sp	ectrum Analyzer - Swept SA					
LXI RL	RF 50 Ω Λ DC		SENSE:INT	ALIGN AUTO	11:55:2 PMS T	7 AM Aug 31, 2018
Marker	2.079536491240	PNO: Fast IFGain:Low	Trig: Free Run #Atten: 22 dB	wrig type.		
10 dB/div	Ref Offset 40.76 dB Ref 42.53 dBm				Mkr1 2.6 -2	6.30 dBm
209						
32.5						
22.5						
12.5						
2.53						
-7.47						
-17.5						-19.02 dBm
-27.5						1
-37.5						
47.5						
Start 3 kl #Res BW	iz 1.0 MHz	#VB	W 3.0 MHz		Stop #Sweep 20.00	o 3.000 GHz s (2000 pts)
мsg 🔱 File	<cse-2nb1w1l-10.0-< th=""><th>-QPSK-T-APORT-3.png&gt;</th><th>▶ saved</th><th></th><th>DC Coupled</th><th></th></cse-2nb1w1l-10.0-<>	-QPSK-T-APORT-3.png>	▶ saved		DC Coupled	

🊺 Kej	ysight Spec	trum An	alyzer - Swept SA								
L <mark>XI</mark> R	L	RF	50 Ω AC			SENSE:INT	1	ALIGN AUTO	DMS	11:55:51	AM Aug 31, 2018
Mar	ker 1 .	3.630	3151575	79 GHZ	PNO: Fast G	□ Trig: Free #Atten: 6 d	Run 1B	#Avg Type.	RIVIS	1	DET A N N N N
10 dE	3/div	Ref 0 Ref 2	ffset 43.59 c 2 <b>2.83 dB</b> m	lB n						Mkr1 3 -38	.630 GHz 3.41 dBm
42.0											
12.0											
2.83											
-7.17											
-17.2											-19:02 dBm
-27.2											
-37.2		-	~ Ilm-								
-47.2	~~~~										
-57.2											
-67.2											
Star #Re	t 3.000 s BW 1	GHz .0 M	Hz		#VI	3W 3.0 MHz			#Swe	Stop 1 ep 20.00 s	0.000 GHz (2000 pts)
MSG 🤇	₽File <	CSE-2	NB1W1L-15	5.0-QPSK-M	-APORT-1.pn	g> saved					

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🊺 Ke	ysight Spectr	um Analyzer - Swe	pt SA							
Mar	ker 1 1	R <sup>■</sup> 50 Ω 7.3636818	40921 GH	Z PNO: Fast IFGain:High	Trig: Free l #Atten: 0 d	Run IB	#Avg Type:	RMS	11:56:14 TR 1	AM Aug 31, 2018 ACE 1 2 3 4 5 6 TYPE WWWWWW DET A NNNNN
10 dl Log	B/div	Ref Offset 48. Ref 24.64 d	23 dB Bm						Mkr1 17. -34	.364 GHz 4.92 dBm
14.6										
4.64										
-5.36										
-15.4										
-25.4										-19.02 dBm
-35.4								• <sup>1</sup>		
-45.4			~~~~	~						
-55.4										
-65.4										
star #Re	s BW 1.	0 MHz		#VB	W 3.0 MHz			#Swe	ep 20.00 s	6 (2000 GHZ
MSG 🤇	₽File <c< th=""><th>SE-2NB1W1L</th><th>-15.0-QPSK</th><th>-M-APORT-2.png</th><th>&gt; saved</th><th></th><th></th><th></th><th></th><th></th></c<>	SE-2NB1W1L	-15.0-QPSK	-M-APORT-2.png	> saved					

Port B, Channel Position M, LTE 20.0 MHz

🎉 Keysight S	pectrum Analyzer - Swept SA									
Marker '	RF 50 Ω <u>A</u> DC 1 2.67633699349	7 GHz PNO IFGai	: Fast 🖵	Trig: Free F #Atten: 22	Run dB	ALIGN AUT	o g Type:	RMS	11:58:23 TR T	AM Aug 31, 2018 ACE 1 2 3 4 5 6 YPE WWWWWW DET A NNNNN
10 dB/div	Ref Offset 40.76 dB Ref 42.53 dBm	3						l	Mkr1 2.6 -26	76 3 GHz .25 dBm
32.5										
22.5										
12.5										
2.53										
-7.47										
-17.5										-19.02 dBm
-27.5							.			1
-37.5										
-47.5										
Stort 2 k									Ston	2 000 CH3
#Res BW	1.0 MHz		#VBV	N 3.0 MHz				#Swe	ep 20.00 s	(2000 GH2
MSG 🔱 File	<cse-2nb1w1l-15.0< td=""><td>)-QPSK-M-APC</td><td>ORT-3.png&gt;</td><td>saved</td><td></td><td><mark>Гю</mark> sta</td><td>TUS 🚺</td><td>DC Coupled</td><td></td><td></td></cse-2nb1w1l-15.0<>	)-QPSK-M-APC	ORT-3.png>	saved		<mark>Гю</mark> sta	TUS 🚺	DC Coupled		

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🊺 Kej	ysight Spectrum	Analyzer - Swept SA								
Mar	ker 1 3.62	50 Ω AC 233116558	28 GHz	PNO: Fast Gain:Low	Trig: Free #Atten: 6 d	Run	ALIGN AUTO #Avg Type	RMS	11:58:47 TR	AM Aug 31, 2018 ACE 1 2 3 4 5 6 TYPE DET A NNNNN
10 dE	Ref 3/div <b>R</b> ef	Offset 43.59 of 22.83 dBm	iB n						Mkr1 3 -38	.623 GHz 3.34 dBm
12.8										
2.83										
-7.17										
-17.2										-19.02 dBm
-27.2										
-37.2		1 Jult								
-47.2										
-57.2										
-67.2										
Star #Re	t 3.000 GH s BW 1.0 I	iz MHz		#VB	W 3.0 MHz			#Swe	Stop 1 ep 20.00 s	0.000 GHz (2000 pts)
MSG 🤇	File <cse< th=""><th>-2NB1W1L-20</th><th>).0-QPSK-M-/</th><th>APORT-1.png</th><th>&gt; saved</th><th></th><th><b>STATUS</b></th><th></th><th></th><th></th></cse<>	-2NB1W1L-20	).0-QPSK-M-/	APORT-1.png	> saved		<b>STATUS</b>			

∭ Key Ø RL Marl	sight Spect	rum Anal RF 7.351	yzer - Swept SA 50 Ω AC 8679339	670 GHz	PNO: Fast	SENSE:INT	Run	ALIGN AUTO #Avg Type:	RMS	11:59:11 TF	AM Aug 31, 2018
10 dE	/div	Ref Off Ref 2	rset 48.23 o 4.64 dBm	iB 1	IFGain:High	#Atten: 0 c	IB			Mkr1 17 -34	.359 GHz I.94 dBm
14.6											
4.64											
-15.4											-19.02 dBm
-25.4									<b>↓</b> 1		
-35.4											
-55.4											
-65.4 Star	10.00	0 GHz	,							Stop	20 000 GHz
#Res	BW 1 File <0	.0 MH	<b>z</b> IB1W1L-20	0.0-QPSK-M	#VE APORT-2.pn	<b>3W 3.0 MHz</b> g> saved		<b>STATUS</b>	#Swe	ep 20.00 s	(2000 pts)



### A.5 Radiated Spurious Emission

#### A.5.1 Reference

FCC CFR 47 Part 2, Clause 2.1046 FCC CFR 47 Part 24, Clause 24.232 (a) (d) RSS-133, Clause 6.4

### A.5.2Method of measurement

The measurements procedures in TIA-603-E: 2016 are used. This measurement is carried out in semi-anechoic chamber.

A preliminary profile of the Spurious Radiated Emissions was obtained by operating the EUT on a remotely controlled turntable within the chamber. Measurements of emissions from the EUT were obtained with the measurement antenna in both horizontal and vertical polarizations.

Emissions identified within the range 30MHz to 18GHz were then formally measured using a peak detector as the worst case.

The limits for outside a licensee's frequency band(s) of operation the power of the spurious emissions have been calculated, as shown below using the following formula:

Field Strength of Carrier - (43 + 10Log (P)) dB

Where:

Field Strength is measured in  $dB\mu V/m$ 

P is measured Transmitter Power in Watts

The EUT was measured with the antenna height varied between 1 and 4 m with the turn table rotated between 0 and 360 degrees. The emission of any outside a licensee's frequencies within 20dB of the limit were measured with the substitution method used according to the standard. The measurements were performed at a 3m distance unless otherwise stated.

#### A.5.3 Measurement limit

The field strength of the carrier has been calculated assuming that the power is to be fed to a half-wave tuned dipoles as per 2.1053 (a).

E<sub>(v/m)</sub>=(30 x G<sub>i</sub> x P<sub>o</sub>)<sup>0.5</sup> / d

Where

Gi is the antenna gain of ideal half-wave dipoles,

 $P_o$  is the power out of the transceiver in W,

d is the measurement distance in meter.

Therefore at 3m measurement distance the field strength using the lowest transceiver output power would be:

E<sub>(v/m)</sub>=(30 x 1.64 x 16.56)<sup>0.5</sup> / 3 = 9.51V/m = 139.57 dBµV/m

As per 24.238 (a) the spurious emission must be attenuated by  $43 + 10\log(Po) dB$  this gives:  $43 + 10\log(16.56) = 55.19 dB$ 

Therefore the limit at 3m measurement distance is:

139.57 – 55.19 = 84.4 dBµV/m

These limits have been used to determine Pass or Fail for the harmonics measured and detailed in the following results.



### A.5.4 Measurement results

Configuration NB-IoT-GuardBand-1C :

Maximum Output Power 52.0 dBm ;

Channel Position	Channel Frequencies
Channel Position B	1935.0MHz
Channel Position M	1962.5MHz
Channel Position T	1990.0MHz

**Channel Position B** 

No emissions were detected within 20dB of the limit.

Channel Position M

No emissions were detected within 20dB of the limit.

Channel Position T

No emissions were detected within 20dB of the limit.

#### Configuration NB-IoT-GB+GSM-MC-1:

Maximum Output Power 46.0dBm

Channel Position	Channel Frequencies
Channel Position M	(G)1930.4 MHz + (GB)1985.0 MHz

**Channel Position M** 

No emissions were detected within 20dB of the limit.

#### Configuration NB-IoT-GB+GSM-MC-3:

Maximum Output Power 46.0dBm

Channel Position	Channel Frequencies		
Channel Position M	(G)1930.4 MHz +1931.6 MHz+1931		
	MHz +(GB)1985.0 MHz		

Channel Position M

No emissions were detected within 20dB of the limit.

#### Configuration NB-IoT-GB+WCDMA-MC-1:

Maximum Output Power 46.0dBm

Channel Position	Channel Frequencies
Channel Position M	(W) 1932.4 MHz + (GB)1990.0 MHz

#### Configuration NB-IoT-GB+WCDMA-MC-3:

Maximum Output Power 46.0dBm

Channel Position	Channel Frequencies		
	(W)1932.4 MHz +1967.6 MHz +1972.6		
Channel Position M	MHz +1977.6 MHz +1982.6 MHz +		
	(GB)1990.0 MHz		

**Channel Position M** 

No emissions were detected within 20dB of the limit.



Configuration NB-IoT-GB+LTE- MIMO-MC-1:

Maximum Output Power 46.0dBm;

Channel Position	Channel Frequencies
Channel Position M	(L)1935.0 MHz + (GB)1990.0 MHz

Channel Position M

No emissions were detected within 20dB of the limit.

Configuration NB-IoT-GB+LTE- MIMO-MC-3 :

#### Maximum Output Power 46.0dBm

•		
Channel Position	Channel Frequencies	
	(L)1950.0 MHz +1960.0 MHz +1970.0	
Channel Position M	MHz +1980.0 MHz +1990.0 MHz +	
	(GB)1935.0 MHz	

Channel Position M

No emissions were detected within 20dB of the limit.

#### Configuration NB-IoT+GSM+LTE-MIMO-MC-2 :

#### Maximum Output Power 46.0dBm

-	
Channel Position	Channel Frequencies
Channel Position T	(G)1970.2MHz +(W)1980.0MHz +
	(NB)1989.2 MHz+1989.8MHz

Channel Position T

No emissions were detected within 20dB of the limit.

#### Channel Position T–30MHz-1GHz







#### Channel Position T-1GHz-18GHz



### Remarks

The EUT does not exceed -13dBm / 84.4dB $\mu\text{V/m}$  at the measured frequencies.



### A.6 Frequency Stability

A.6.1 Reference FCC CFR 47 Part 2, Clause 2.1055 FCC CFR 47 Part 24, Clause 24.235 RSS-133, Clause 6.3

### A.6.2 Method of measurement

### **Temperature Variation**

The EUT was tested over the temperature range -30°C to +50°C in 10°C steps with -48 VDC Power Supply. At each temperature step, the Base Station was configured to transmit an[RAT]\* at maximum power on the middle channel of the operating band. After achieving thermal balance, the averages of 200 transmission bursts were measured and the result recorded.

### Voltage Variation

The EUT was tested at the supplied voltages varied from 85 to 115 percent of the nominal values of -48 VDC. At +20°C, the Base Station was configured to transmit an [RAT]\* at maximum power on the bottom, middle and top channel of the operating band. The average of200 transmission bursts was measured and the result recorded.

[RAT]\*:

NB-IoT - QPSK modulation

### A.6.3 Measurement limit

FCC: The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized frequency block.

ISED: ±1.0 ppm



### A.6.4 Measurement results

Frequency Error – Temperature Variation

### Configuration NB-IoT-GuardBand-1C

Maximum Output Power 46.02dBm per port, Channel Bandwidth 10MHz

		Frequency Stability (Hz)				
Supply Voltage	Temperature	Channel	Channel	Channel		
DC(V)		position B	position M	position T		
	-30	1.88	-1.23	1.26		
	-20	-1.73	1.85	1.13		
	-10	-1.27	-1.14	1.17		
	0	-1.87	1.53	-1.61		
-48	10	-1.24	1.44	2.32		
	20	1.35	-2.23	1.92		
	30	1.09	1.55	1.72		
	40	-1.29	1.18	-1.19		
	50	1.21	1.15	-1.53		

#### Frequency Error – Voltage Variation

### Configuration NB-IoT-GuardBand-1C

Maximum Output Power 46.02dBm per port, Channel Bandwidth 10MHz

		Frequency Stability (Hz)			
Supply Voltage	Temperature(°C)	Channel	Channel	Channel	
DC(V)		position B	position M	position T	
-40.8	20	-1.48	1.08	1.39	
-48	20	-1.15	-1.73	1.32	
-55.2	20	-1.16	1.51	1.64	



# ANNEX B: Accreditation Certificate



\*\*\*END OF REPORT\*\*\*