

Figure 8.2-43: CCDF, 256QAM, Port A, low channel, configuration 1

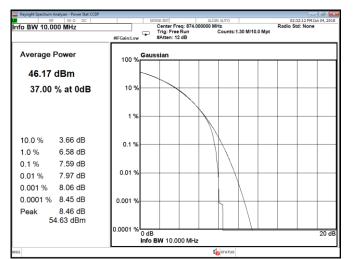


Figure 8.2-45: CCDF, 256QAM, Port C, low channel, configuration 1

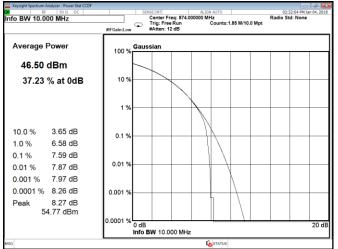


Figure 8.2-44: CCDF, 256QAM, Port B, low channel, configuration 1

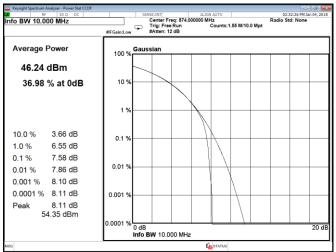


Figure 8.2-46: CCDF, 256QAM, Port D, low channel, configuration 1



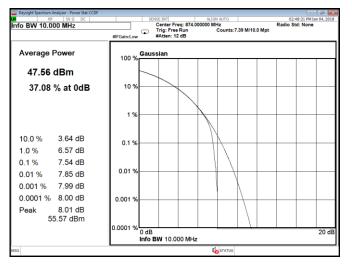


Figure 8.2-47: CCDF, QPSK, Port A, low channel, configuration 2

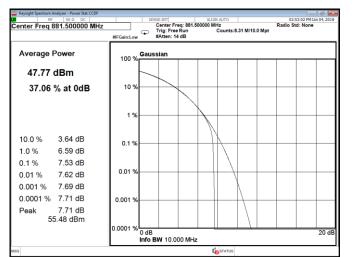


Figure 8.2-49: CCDF, QPSK, Port A, mid channel, configuration 2

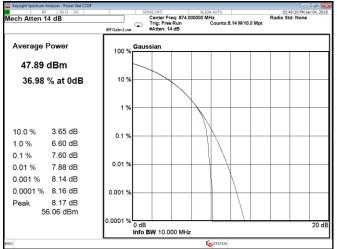


Figure 8.2-48: CCDF, QPSK, Port D, low channel, configuration 2

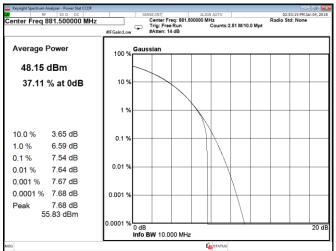


Figure 8.2-50: CCDF, QPSK, Port D, mid channel, configuration 2



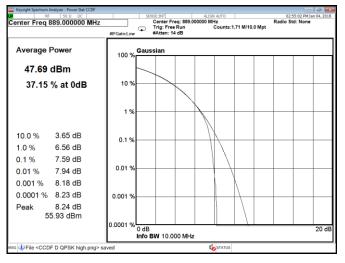


Figure 8.2-51: CCDF, QPSK, Port A, high channel, configuration 2

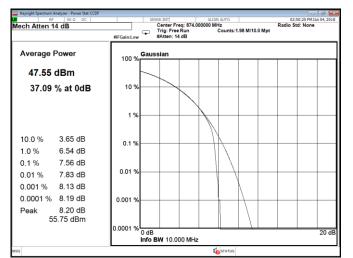


Figure 8.2-53: CCDF, 16QAM, Port A, low channel, configuration 2

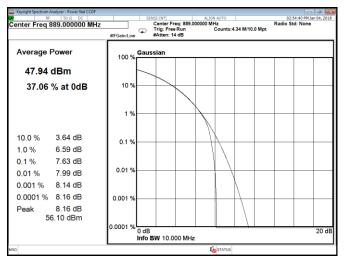


Figure 8.2-52: CCDF, QPSK, Port D, high channel, configuration 2

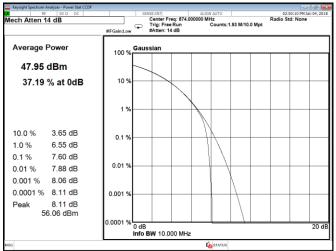


Figure 8.2-54: CCDF, 16QAM, Port D, low channel, configuration 2



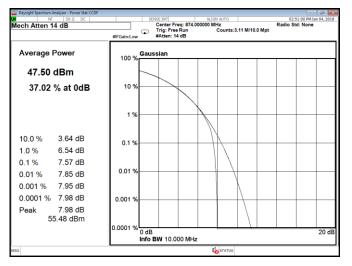


Figure 8.2-55: CCDF, 64QAM, Port A, low channel, configuration 2

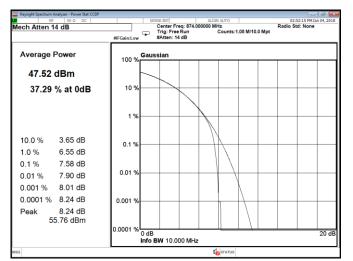


Figure 8.2-57: CCDF, 256QAM, Port A, low channel, configuration 2

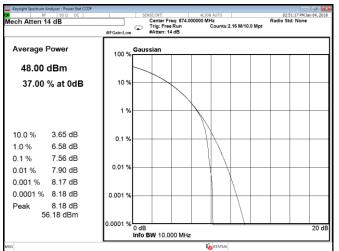


Figure 8.2-56: CCDF, 64QAM, Port D, low channel, configuration 2

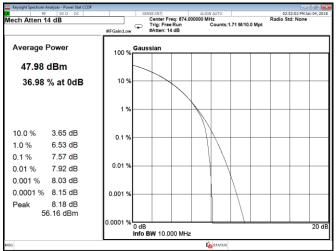


Figure 8.2-58: CCDF, 256QAM, Port D, low channel, configuration 2



8.3 FCC 27.53 Spurious emissions at RF antenna connector

8.3.1 Definitions and limits

(c) For operations in the 746–758 MHz band and the 776–788 MHz band, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following: (1) On any frequency outside the 746–758 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB;

(2) On any frequency outside the 776–788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB;

(3) On all frequencies between 763–775 MHz and 793–805 MHz, by a factor not less than 76 + 10 log (P) dB in a 6.25 kHz band segment, for base and fixed stations;

(4) On all frequencies between 763–775 MHz and 793–805 MHz, by a factor not less than 65 + 10 log (P) dB in a 6.25 kHz band segment, for mobile and portable stations;

(5) Compliance with the provisions of paragraphs (c)(1) and (c)(2) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed;

(6) Compliance with the provisions of paragraphs (c)(3) and (c)(4) of this section is based on the use of measurement instrumentation such that the reading taken with any resolution bandwidth setting should be adjusted to indicate spectral energy in a 6.25 kHz segment.

8.3.2 Test summary

Test date	January 5, 2018
Test engineer	Andrey Adelberg
Verdict	Pass

8.3.3 Observations, settings and special notes

The spectrum was searched from 30 MHz to the 10th harmonic.

All measurements were performed using a RMS detector.

For compensation of MIMO 4×4 application (configuration 1) limit lines were adjusted by 6 dB ($10 \times Log_{10}(4)$)

For compensation of MIMO 2×2 application (configuration 2) limit lines were adjusted by 3 dB ($10 \times Log_{10}(2)$)

RBW within 30–1000 MHz was 100 kHz and 1 MHz above 1 GHz. VBW was wider than RBW.

Configuration 1: Port A with 40 W power, Port B with 40 W power, Port C with 40 W power, Port D with 40 W power.

Configuration 2: Port A with 60 W power, Port D with 60 W power.



8.3.4 Test data

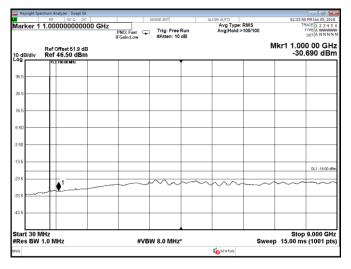
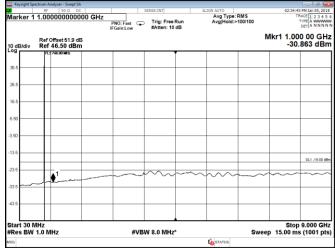
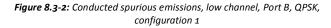


Figure 8.3-1: Conducted spurious emissions, low channel, Port A, QPSK, configuration 1

arker 1	RF 50 Ω DC) GHz PNO: Far IFGain:Lo		ig: Free Run Atten: 10 dB	ALIGN AUTO Avg Ty Avg Ho	pe: RMS d:>100/100	02:35	TRACE 1 2 3 4 5 TYPE A WWW DET A NNNN
dB/div	Ref Offset 51.9 dB Ref 46.50 dBm							00 00 GH 0.626 dBr
5.5								
								-
1.5								
50							_	
50								
.6								
_								DL1 -19.00 dB
.5	1. 1 ·····		\sim	\sim	\sim			
1.5								-
.6								
art 30 M	/Hz						Sto	p 9.000 GH
	1.0 MHz		#VBW 8.	0 MHz*		Swe		ns (1001 pt

Figure 8.3-3: Conducted spurious emissions, low channel, Port C, QPSK, configuration 1





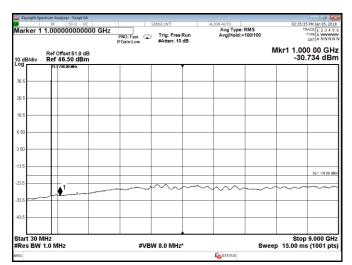


Figure 8.3-4: Conducted spurious emissions, low channel, Port D, QPSK, configuration 1



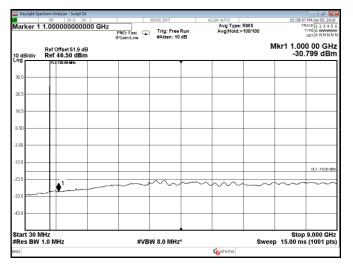


Figure 8.3-5: Conducted spurious emissions, high channel, Port A, QPSK, configuration 1

Keysight Sp	RF 50 Ω			SENSE:INT	ALIGN	AUTO		03:27:	👝 🕼 💽
larker 1	1.00000000		PNO: Fast IFGain:Low			Avg Type: F Avg Hold:>1	RMS 100/100	02.37.	TYPE A WWWW DET A NNNN
0 dB/div	Ref Offset 51.9 Ref 46.50 dE	dB Bm					N	/lkr1 1.0 -30	00 00 GHz 0.714 dBm
J	FL2 746.00 MHz			l I					
36.5									
26.5									
16.5									
6.50			_						
3.50									
13.5	_								_
									DL1 -19.00 dBr
23.5	1			$\sim\sim\sim$	mh	\sim	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		
33.5									
43.5									
Start 30 I								Sto	p 9.000 GHz
	1.0 MHz		#VB	W 8.0 MHz*	4		Swee	p 15.00 m	s (1001 pts
sg					4	STATUS			

Figure 8.3-7: Conducted spurious emissions, high channel, Port C, QPSK, configuration 1

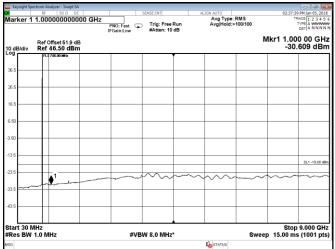


Figure 8.3-6: Conducted spurious emissions, high channel, Port B, QPSK, configuration 1

Keysight Spectrum Anal RF Marker 1 1.000	50 Ω DC 000000000 GHz	PNO: Fast	SENSE:INT		IGN AUTO Avg Type: I Avg Hold:>	RM S	TR	PM Jan 05, 201 ACE 1 2 3 4 5 TYPE A WWWW DET A N N N
10 dB/div Ref 4	rset 51.9 dB 6.50 dBm	FGain:Low	#Atten: 10	dB			lkr1 1.00	
36.5	16.00 MHz							
26.5								
16.5								
6.50								
3.50								
13.5								DL1 -19.00 d
23.5	1		$\sim \sim$	~~~~	$\sim\sim$		~~~	
33.5								
43.5								
Start 30 MHz #Res BW 1.0 MH	z	#VB	W 8.0 MHz			Sweep	Stop 15.00 ms	9.000 GH
nsg					K STATUS			

Figure 8.3-8: Conducted spurious emissions, high channel, Port D, QPSK, configuration 1



Image: Non-Solution Solution Extension Link arrow Radio Stati Non- Radio Stati Non- Radio Davise: BT 0 dB/div Ref 53.90 dBm Mkr1 744 -34.747 0 dB/div Ref 53.90 dBm -34.747 Span 1 Res BW 10 kHz WBW 300 kHz	
Purification Trig: Free Run #FGain.low Avgi/Held>100/100 0 dBd/w Ref 53.90 dBm Mkr1 745 0 dBd/w Ref 53.90 dBm -34.747 0 d	n 05, 20
0 dB/div Ref 53.90 dBm -34.747 0 dB/div Ref 53.90 dBm -34.747 0 dB/div diversion diversion 0 dB/div diversion diversion 0 dB/div diversion diversion 0 dB/diversion diversion divers	s
Image: Signal System Image: Signal System Image: Signal System Ima	
39 1 1 1 30 1 1 1 30 1 1 1 31 1 1 1 31 1 1 1 31 1 1 1 31 1 1 1 31 1 1 1 31 1 1 1 31 1 1 1 31 1 1 1 31 1 1 1 31 1 1 1 31 1 1 1 31 1 1 1 31 1 1 1 31 1 1 1 31 1 1 1 31 1 1 1 32 #VBW 300 kHz \$	
Image: Span in the system Image: Span in the system Image: Span in the system Image: Span in the system <td></td>	
Image: Spectral Density -29.91 dBm / 30 kHz	
onter 746 MHz es BW 10 kHz se BW 10 kHz -29.91 dBm / 30 kHz -74.68 dBm /Hz	~~~~~
Image: Control of the second secon	
nter 746 MHz sweep 11 Channel Power Power Spectral Density -29.91 dBm / 30 kHz -74.68 dBm /Hz	
Ther 746 MHz Span 1 se BW 10 kHz #VBW 300 kHz Span 1 Channel Power Power Spectral Density -29.91 dBm / 30 kHz -74.68 dBm /Hz	
nter 746 MHz es BW 10 kHz #VBW 300 kHz Sweep 11 Channel Power Power Spectral Density -29.91 dBm / 30 kHz -74.68 dBm /Hz	
Span ter 746 Mtz Span tes BW 10 kHz #VBW 300 kHz Sweep 11 Channel Power Power Spectral Density -29.91 dBm / 30 kHz -74.68 dBm /Hz	
tes BW 10 kHz #VBW 300 kHz Sweep 11 Channel Power Power Spectral Density -29.91 dBm / 30 kHz -74.68 dBm /Hz	
Channel Power Power Spectral Density -29.91 dBm / 30 kHz -74.68 dBm /Hz	
-29.91 dBm / 30 kHz -74.68 dBm /Hz	
4	
Lo STATUS	

Figure 8.3-9: Conducted band edge emission at 746 MHz, Port A, low channel, QPSK, configuration 1

Keysight Spectre	um Analyzer - Channel RF 50 Ω DC			SENSE:INT		LIGN AUTO		10.21.4	9 AM Jan 05, 201
pan 10.00		-		Center Fr	eq: 745.985000	00/100	Radio Std: None		
			#IFGain:Low	Trig: Free #Atten: 16		Radio Device: BTS			
0 dB/div	Ref 53.90 d	Bm						Mkr1 -35	746 MH 031 dBr
og 3.9									
3.9									
3.9									
3.9					~~~~~		Y		
90									
10									
3.1					/				
5.1					U1				
6.1					•				
			manufrating						
enter 746 Res BW 1				#\/	BW 300 KH	2			oan 10 MH p 118.8 m
Les DW 1	V KHZ			# 1	599 300 KH	12		Swee	9 110.011
Channe	el Power			Powe	r Spectra	I Density			
20					75.65	dBm /на	_		
-30	-30.88 dBm / 30 kHz								
a						STATUS			

Figure 8.3-11: Conducted band edge emission at 746 MHz, Port B, low channel, QPSK, configuration 1

Keysight Spectre	um Analyzer - Channel Power				- 6		
arker 17	RF 50 Ω DC		SENSE:INT Center Freg: 745.850	ALIGN AUTO	10:59:31 AM Jan 05, 201 Radio Std: None		
arker 17	45.90 mm12		Trig: Free Run	Avg Hold:>100/100			
		#FGain:Low	#Atten: 16 dB		Radio Device: BTS		
					Mkr1 745.9 MH		
0 dB/div	Ref 53.90 dBm				-31.050 dBn		
og 3.9							
3.9							
3.9							
3.9			ſ				
90							
5.1							
			L I				
6.1							
6.1							
enter 745					Span 10 MH		
Res BW 3	80 kHz		#VBW 3001	kHz	Sweep 13.27 m		
Channe	el Power		Power Spect	ral Density			
				·····			
-25	5.88 dBm /	100 kHz	-75 88	B dBm /Hz			
-20		00 1112	-70.00				
g				STATUS			
				~			

Figure 8.3-10: Conducted band edge emission at 745.9 MHz, Port A, low channel, QPSK, configuration 1

Keysight Spectrum Analyzer - Channe RF 50 Q D		SENSE:INT ALIGN AUTO	10:59:22 AM Jan 05, 20
arker 1 745.90 MHz		Center Freq: 745.850000 MHz	Radio Std: None
	#IFGain:Low	#Atten: 16 dB	Radio Device: BTS
0 dB/div Ref 53.90 d	Bm		Mkr1 745.9 MH -31.349 dB
og			
3.9			
3.9			
3.9			
3.9			
.90			
10			
6.1		41	
6.1		mana P	
6.1			
enter 745.9 MHz Res BW 30 kHz		#VBW 300 kHz	Span 10 Mi Sweep 13.27 n
Res BW JU KHZ		#VBW 300 kHz	Sweep 13.27 h
Channel Power		Power Spectral Density	/
-26.72 dBr	n / 100 kHz	-76.72 dBm //	łz
a		I NSTATUS	

Figure 8.3-12: Conducted band edge emission at 745.9 MHz, Port B, low channel, QPSK, configuration 1



	ım Analyzer - Channel									
pan 10.00	RF 50 Ω DC			SENSE:INT	eg: 745.985	ALIGN AUTO		10:35:0 Radio Std:	5 AM Jan 05, 201 None	
pun 10.00	0 11112		#IFGain:Low	Toley Free	Run	Avg Hold:>1	00/100	Radio Devic	A BTS	
			#IFGain:Low	#Atten: 1	o db					
	Ref 53.90 dl								746 MH 848 dBr	
odB/div	Ref 53.90 di	sm			-			-04	040 001	
3.9	_				-					
3.9	_									
3.9										
1.9			-		-					
90										
10					1/					
3.1					1					
51					Ľ1					
3.1)					
5.1			*****	A	1					
enter 746									oan 10 MH	
Res BW 10	0 kHz			#V	BW 300	kHz		Sweep 118.8 r		
				_						
Channe	Power			Powe	r Spect	ral Density				
20					75.00					
-30.61 dBm / 30 kHz			Hz		-/5.38	3 dBm /на	2			
DElla al D	BE B QPSK low	0000	and a second			STATUS				

Figure 8.3-13: Conducted band edge emission at 746 MHz, Port C, low channel, QPSK, configuration 1

Keysight Spectru	m Analyzer - Channel			SENSE:INT		LIGN AUTO		10:25:1	8 AM Jan 05, 201
pan 10.00		* 1		Center Fre	eq: 745.985000	00/100	Radio Std: I		
		1	#FGain:Low	#Atten: 16	dB	Angli Mid I	00,100	Radio Devic	e: BTS
0 dB/div	Ref 53.90 d	Bm			-				746 MH 950 dBr
og 3.9									
3.9					L				
3.9	_								
1.9	_								
90									1
10			-		/			-	
.1					4				
6.1					∛ 1				
p. 1			***********	1.1 april 1.	1				
enter 746 Res BW 10				#VE	300 kH	z			oan 10 MH p 118.8 m
Channe				Powe	r Spectra	I Density			
onanne					opeour	Denony			
-30	-30,45 dBm / 30 kHz				75.22	dBm /н	z		

Figure 8.3-15: Conducted band edge emission at 746 MHz, Port D, low channel, QPSK, configuration 1

Keysight Spectr	um Analyzer - Channel Power				- 6				
larkar 17	RF 50 Ω DC		SENSE:INT Center Freq: 745.850	ALIGN AUTO	10:59:14 AM Jan 05, 201 Radio Std: None				
arker 17	45.90 MHZ		Trig: Free Run	Avg Hold:>100/100					
		#IFGain:Low	#Atten: 16 dB		Radio Device: BTS				
					Mkr1 745.9 MH				
0 dB/div	Ref 53.90 dBm				-31.706 dBr				
og 3.9									
13.9									
3.9									
13.9									
.90									
10									
6.1			/						
6.1			i						
6.1									
enter 745 Res BW 3			#VBW 3001	k 11 7	Span 10 MH Sweep 13.27 m				
Kes DW J	JO KHZ		#4844 3001	NF12	Sweep 13.27 h				
Channe	el Power		Power Spect	ral Density					
Channe			rower opeer	rai Density					
.27	7.15 dBm /	100 641-	-77 15	5 dBm /Hz					
-21		100 KHZ	-77.15						
-									
ig l									

Figure 8.3-14: Conducted band edge emission at 745.9 MHz, Port C, low channel, QPSK, configuration 1

Keysight Spectrum	Analyzer - Channel Power		SENSE:INT	ALIGN A	UTO	10-58-5	6 AM Jan 05, 20		
larker 1 745			Center Freq: 1		Radio Std:				
		#IFGain:Low	Trig: Free Run #Atten: 16 dB	Radio Devid	e: BTS				
	Def 60.00 dDm						45.9 MH .161 dB		
0 dB/div I og	Ref 53.90 dBm					-00			
3.9									
3.9									
3.9						~~~~~			
3.9									
.90				/					
.10									
6.1			1						
6.1			and a second sec						
6.1	- and a state of the state of t	, And a state of the state of t							
enter 745.9							pan 10 Mi		
Res BW 30	kHz		#VBW	Sweep 13.27 r					
Channel	Power		Power S	ensity					
-25.	24 dBm /	100 kHz	-7	-75.24 dBm /Hz					
a				1	STATUS				
				<u> </u>					

Figure 8.3-16: Conducted band edge emission at 745.9 MHz, Port D, low channel, QPSK, configuration 1



Keysight Spe	ctrum Analyzer - Chan					ALIGN AUTO		- 6
nan 10 (RF 50 Ω	DC		SENSE:INT	10:39: Radio Std:	11 AM Jan 05, 201		
Jan 10.				Trig: Free				
			#IFGain:Low	#Atten: 16	dB		Radio Devi	ce: BTS
dB/div	Ref 53.90	dBm				Mkr1 756 MH -37.092 dB		
9								
9								
9					<u> </u>			
9		1			<u> </u>			
₀ /					—			
/								
1/								
					<u>ا</u>			
'I					hermon			
nter 7	56 MHz						S	pan 10 Mi
es BW 10 kHz				#VE	Sweep 118.8 r			
Chanr	nel Power			Powe	Spect	al Density		
-32.10 dBm / 30 kHz			u.,					
			HZ		10.01	dBm /Hz		
						STATUS		

Figure 8.3-17: Conducted band edge emission at 756 MHz, Port A, high channel, QPSK, configuration 1

Keysight Spectrum Analyzer - RF 50	Channel Power		SENSE:INT	4	LIGN AUTO	10:38	47 AM Jan 05, 201
oan 10.000 MHz		·	Center Free	Radio Std:	Radio Std: None Radio Device: BTS		
		#IFGain:Low	Trig: Free F #Atten: 16 d	00 Radio Dev			
	.90 dBm					Mkr1 -34	756 MH 4.833 dBr
9 9							
.9							_
9							
9							
•		-					_
/							
1			Į į	1			
				A CONTRACTOR OF A CONTRACTOR		the second s	
enter 756 MHz tes BW 10 kHz			#\/B	W 300 kH	-		Span 10 MH ep 118.8 m
CS BW TO KHZ			#10	W 300 KH	2	Swee	ep 116.011
Channel Powe	er		Power	Spectra	I Density		
-30.42 d							
-30.42 0	юпі / 30 к	HZ	-	15.19	dBm /Hz		
					-4		
					STATUS		

Figure 8.3-19: Conducted band edge emission at 756 MHz, Port B, high channel, QPSK, configuration 1

		S	ENSE:INT Center Fi	ea: 75		IGN AUTO		10:5 Radio St	i6:56 AM Jan 05, 201 d: None	
MHz	#IFGain:Lo	┘ Trig: Free Run Avg Hold:>100/100 :Low #Atten: 16 dB					00/100	Radio Device: BTS		
tef 53.90 dBm									756.1 MH 0.993 dBr	
				₩						
	·~····									
				11						
			1							
				1						
				7	~~~~		The of the local diversion of the local diver	~~~~		
MH7				111					Span 10 MH	
			#V	BW :	300 kH:	z			ep 13.27 m	
Power			Powe	r Sp	ectra	I Density				
57 dBm	/ 100 kHz			-76	.57 (dBm /н	z			
						STATUS				
	MHz Hz Power	tef 53.90 dBm	MHz Hz Sower	All and a second a	MHz Hz #VBW :	MHz Hz #VBW 300 kH	Lef 53.90 dBm Image: State of the stat	Power Power Spectral Density 57 dBm / 100 kHz -76.57 dBm /Hz	Mkr1 	

Figure 8.3-18: Conducted band edge emission at 756.1 MHz, Port A, high channel, QPSK, configuration 1

Keysight Spectrum Analyzer - Channel RF 50 Ω DC		SENSE:INT A	LIGN AUTO	10:57:18 AM Jar	6
oan 10.000 MHz		Center Freq: 756.150000	MHz	Radio Std: None	105,20
	#FGain:Low	Trig: Free Run #Atten: 16 dB	Avg Hold:>100/100	Radio Device: BT	s
	WI Gam.cow			Mkr1 756.1	-
dB/div Ref 53.90 dl	Bm			-30.856	
g		l li			
3.9					
3.9					
3.9	~~~,p				
1.9					
90		\			
10					
1					
1		1			
1		Annun and a second			
			and the standard st	and a source and a	
enter 756.2 MHz				Span 1	
Res BW 30 kHz		#VBW 300 kH	z	Sweep 13	.27 r
Channel Power		Dawar Spaatra	Density		
Channel Power		Power Spectra	Density		
-26.51 dBn		76 51	dBm /Hz		
-26.51 000	1 / 100 KHZ	-/0.51			
3			STATUS		

Figure 8.3-20: Conducted band edge emission at 756.1 MHz, Port B, high channel, QPSK, configuration 1



Res BW 10 kHz #VBW 300 kHz Sweep 118. Channel Power Power Spectral Density	Keysight Spectrum Analyzer - Cha RF 50 Ω	nnel Power DC		SENSE:INT	A	LIGN AUTO	10:38:	25 AM Jan 05, 20
Antien: 16 dB Radio Device: BTS Mkr 756 J Alter: 756 MHz Res BW 10 kHz #VBW 300 kHz Span 10 Sweep 118: Channel Power Spectral Density	an 10.000 MHz			Toley Freed			Radio Std:	None
ublickly Ref 53.90 dBm -34.945 c 09						Avginoid:>100/100	Radio Devi	ce: BTS
1 1 1 </th <th></th> <th>) dBm</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th>) dBm						
Image: spanning of the spanni								
Image: spectral logs Image: spectral logs Image: spectral logs Image: spectral logs Image: spectral logs Image: spectral logs	1.9							
Image: Constraint of the second se	.9							
es BW 10 kHz #VBW 300 kHz Span 10 Sweep 118. Channel Power Power Spectral Density	.9						_	
Image:	~ /							
nter 756 MHz \$\$pan 10 es BW 10 kHz \$\$vBW 300 kHz \$\$pan 10 Sweep 118. Channel Power \$\$pectral Density	1/							
nter 756 MHz Span 10 es BW 10 kHz #VBW 300 kHz Sweep 118. Channel Power Power Spectral Density				1				
nter 756 MHz Span 10 ses BW 10 kHz #VBW 300 kHz Sweep 118. Channel Power Power Spectral Density								
les BW 10 kHz #VBW 300 kHz Sweep 118. Channel Power Power Spectral Density								
Channel Power Power Spectral Density						-		pan 10 MH
				#VE	544 300 KH	12	Swee	p 110.01
	Channel Power			Power	Spectra	I Density		
-30.53 dBm / 30 кHz -75.30 dBm /Hz	-30.53 dE	3 m / 30 ki	Ηz	-	75.30	dBm /Hz		
						STATUS		

Figure 8.3-21: Conducted band edge emission at 756 MHz, Port C, high channel, QPSK, configuration 1

Keysight Spectrum	Analyzer - Channel F 50 Ω DC	ower		SENSE:INT		ALIGN AUTO		10:37:5	i0 AM Jan 05, 201		
an 10.000	MHz			Center Freq: 756.015000 MHz Trig: Free Run Avg Hold:>100/100					Radio Std: None		
		*	IFGain:Low	#Atten: 16	Radio Device: BTS						
	Ref 53.90 dE	3m			_				756 MH 293 dB		
9											
9								_			
9		****	·····					-			
9		1			<u> </u>						
1				1							
1				1							
1											
1					Ľ						
					Settender to		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~				
nter 756 M es BW 10				#VF	300 kH	17			oan 10 MH p 118.8 m		
								•			
Channel	Power			Power	r Spectra	al Density					
-31.63 dBm / 30 kHz			-	-76.40 dBm /Hz							
			12	-	10.40		2				
						4					
						STATUS					

Figure 8.3-23: Conducted band edge emission at 756 MHz, Port D, high channel, QPSK, configuration 1

Keysight Spectr	rum Analyzer - Channel Powe	r .			10:57:30 AM Jan 05, 201
pan 10.0	RF 50 Ω DC		Center Freq: 756.150		Radio Std: None
puil loio	00 11112	#IFGain:Low	Trig: Free Run #Atten: 16 dB	Avg Hold:>100/100	Radio Device: BTS
		#IFGain:Low	#Atten: To up		Mkr1 756.1 MH
	Ref 53.90 dBm				-30.953 dBr
0 dB/div	Rei 53.90 dBm				00.000 0.01
13.9					
33.9					
3.9 /					
3.9					
.90					
.10					
6.1					
6.1			1		
6.1					
enter 756					
Res BW 3			#VBW 300	kHz	Span 10 MH Sweep 13.27 m
Channe	el Power		Power Spec	tral Density	
				-	
-20	6.60 dBm /	100 kHz	-76.6) dBm /нz	
				4	
a				STATUS	

Figure 8.3-22: Conducted band edge emission at 756.1 MHz, Port C, high channel, QPSK, configuration 1

Keysight Spectrum An	alyzer - Channel Power 50 Ω DC		SENSE:INT	ALIGN AUTO	10:57:49 AM Jan 05.20
pan 10.000 M			Center Freq: 756.150	0000 MHz	Radio Std: None
		#FGain:Low	Trig: Free Run #Atten: 16 dB	Avg Hold:>100/100	Radio Device: BTS
		in dument			Mkr1 756.1 M
dB/div R	ef 53.90 dBm				-32.670 dB
og			1 III		
3.9					
3.9					
3.9					
3.9					
90					
10					
6.1					
5.1			i_1		
6.1					

enter 756.2 N Res BW 30 kl			#VBW 300	kU7	Span 10 M Sweep 13.27 r
Kes BW JORI	12		#4844 300	KIIZ	Sweep 13.271
Channel P	ower		Power Spec	tral Density	
Channel P	Ower		Fower spec	tial Density	
-29.2	6 dBm /	100 642	79.2	6 dBm /Hz	
-23.2	o ubiii /	100 KHZ	-13.2		
				-4	
a				STATUS	

Figure 8.3-24: Conducted band edge emission at 756.1 MHz, Port D, high channel, QPSK, configuration 1



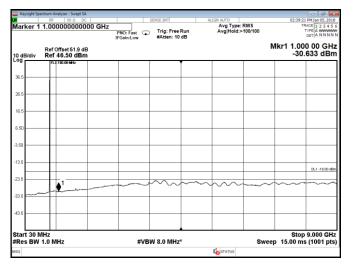


Figure 8.3-25: Conducted spurious emissions, two-channel operation, Port A, QPSK, configuration 1

×	RF 50 Ω	DC		SENSE:INT	AL	IGN AUTO		02:40:	🖂 🖓 💽
/larker 1	1.00000000	0000 GHz	PNO: Fast	Trig: Free R	un	Avg Type: Avg Hold:>	RMS 100/100	T	TYPE A WWWW
0 dB/div	Ref Offset 51.9 Ref 46.50 dl		IFGain:Low	aAtten: 10 d	0		N	/lkr1 1.00 -30	00 00 GHz .873 dBm
	FL2 746.00 MHz			Ĭ					
36.5			-						
26.5									
16.5									
6.50									
3.50									
13.5									DL1 -19.00 dBm
23.5	1			\sim	~~~~	\sim		~~~~	
-33.5									
43.5									
Start 30 #Res BW	MHz 1.0 MHz		#VB	W 8.0 MHz*			Swee	Stop p 15.00 m	o 9.000 GHz s (1001 pts)
//SG						STATUS			

Figure 8.3-27: Conducted spurious emissions, two-channel operation, Port C, QPSK, configuration 1

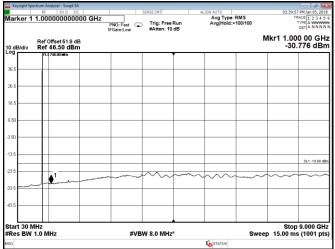


Figure 8.3-26: Conducted spurious emissions, two-channel operation, Port B, QPSK, configuration 1

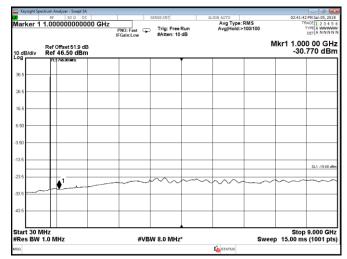


Figure 8.3-28: Conducted spurious emissions, two-channel operation, Port D, QPSK, configuration 1



Keysight Spectrum Analyzer - Chann RF 50 Q	el Power DC		CENTER INT				10-10-1	2 AM Jan 05, 201	
RF 50 Ω Aarker 1 746.00 MHz	DC	_	SENSE:INT Center Fre	q: 745.98500	ALIGN AUTO		Radio Std:		
	#IFG	iain:Low 🖓	Trig: Free #Atten: 16	Run dB	Avg Hold:>	100/100	Radio Devi	e: BTS	
0 dB/div Ref 53.90	dBm						Mkr1 -34	746 MH 734 dBr	
og									
13.9									
13.9									
3.9	-								
3.9									
.90				 					
10	_			/					
61				1		L V			
61				L					
6.1				•		V			
D. I									
enter 746 MHz Res BW 10 kHz			#VI	S Swee	pan 20 Mi p 237.6 n				
Channel Power		Power Spectral Density							
-30.34 dB	-30.34 dBm / 30 kHz				-75.11 dBm /Hz				
a					STATUS				

Figure 8.3-29: Conducted band edge emission at 746 MHz, Port A, twochannel operation, QPSK, configuration 1

Iarker 1 746.00 MHz	 Center Fre Trig: Free #Atten: 16	q: 745.985000 Run	IGN AUTO MHz Avg Hold:>	100/100	Radio Std: N	0 AM Jan 05, 2011		
	#Atten: 16	dB	Avg Hold:>					
					Radio Devic	Radio Device: BTS		
0 dB/div Ref 53.90 dBm					Mkr1 -35.	746 MH 717 dBr		
og (3.9								
3.9								
39								
39								
90								
10		1						
		1		11				
8.1				V				
5.1		\$1		V				
5.1	 ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	ſ						
enter 746 MHz Res BW 10 kHz	#VE			an 20 MH 237.6 m				
Channel Power	Power	r Spectra						
-31.71 dBm / 30 kHz	-	76.48						
a			STATUS					

Figure 8.3-31: Conducted band edge emission at 746 MHz, Port B, twochannel operation, QPSK, configuration 1

Keysight Spectro	um Analyzer - Channel Powe RF 50 Ω DC	r	SENSE:INT	ALIGN AUTO		10:53:0	4 AM Jan 05, 201
arker 17	45.90 MHz		Center Freq: 745		>100/100	Radio Std: I	
		#IFGain:Low	#Atten: 16 dB	Avginoid	>100/100	Radio Devid	e: BTS
0 dB/div	Ref 53.90 dBm						45.9 MH 484 dBn
og	Ker 55.50 dBin						
3.9							
3.9							
3.9			5			*****	
90							
10							
5.1			1		- V		
6.1			¹		1		
6.1			water starting and the				
enter 745	9 MHz					Si	oan 20 MH
Res BW 3			#VBW 3	00 kHz		Swee	p 26.53 m
Channe	el Power		Power Sp	ectral Densit	у		
-25	5.47 dBm	/ 100 kHz	-75.	47 dBm /	Hz		
a				STATUS			
~				-00011100			

Figure 8.3-30: Conducted band edge emission at 745.9 MHz, Port A, twochannel operation, QPSK, configuration 1

Keysight Spectrum Analyzer - Channel				
RF 50 Ω DC arker 1 745.90 MHz		SENSE:INT Center Freq: 745.8	ALIGN AUTO	10:53:34 AM Jan 05, 201 Radio Std: None
and 1745.50 mHz		Trig: Free Run #Atten: 16 dB	Avg Hold:>100/100	Radio Device: BTS
	#IFGain:Low	#Atten: 16 dB		
	_			Mkr1 745.9 MH -31.807 dBi
dB/div Ref 53.90 dl	Bm			-31.607 UB
3.9				
3.9				
3.9				
19				
90				
10				
5.1		1		
		1		
5.1			¥	
5.1	and and a second and a second			
enter 745.9 MHz				Span 20 MH
Res BW 30 kHz		#VBW 30) kHz	Sweep 26.53 n
Channel Power		Power Spe	ctral Density	
Channel Fower		Fower Spec	trai Density	
-26.97 dBn) / 100 kHz	-76 9	7 dBm /Hz	
-20.07 0.01		-70.5		
a			STATUS	

Figure 8.3-32: Conducted band edge emission at 745.9 MHz, Port B, twochannel operation, QPSK, configuration 1



	Ω DC	S	ENSE:INT		ALIGN AUTO			🕞 🤀 📕 5 AM Jan 05, 201
Marker 1 746.00 M	Hz		Center Fre Trig: Free	q: 745.9850	00 MHz Avg Hold:	400/400	Radio Std:	lone
	#IF(Gain:Low 두	#Atten: 16		Avginoid:	100/100	Radio Devid	e: BTS
	.90 dBm							746 MH 401 dB
.og 43.9								
33.9								
23.9								
13.9								
.90								
10				/		H 1/		
6.1				/		11		
8.1				£1		<u> </u>	+	
16.1				r	_			
enter 746 MHz Res BW 10 kHz			#VE	L 3W 300 k	Hz) an 20 Mi o 237.6 n
Channel Pow	Channel Power -31.48 dBm / 30 kHz		Power	/				
-31.48 c			-					
5G					🚺 STATUS			

Figure 8.3-33: Conducted band edge emission at 746 MHz, Port C, twochannel operation, QPSK, configuration 1

Keysight Spectru	m Analyzer - Channel RF 50 Ω Di			SENSE:INT		LIGN AUTO		10-17-2	👝 🕼 📕
arker 1 74		- 1		Center Fre	eq: 745.985000	MHz		Radio Std:	
			#IFGain:Low	#Atten: 16	Run dB	Avg Hold:>	100/100	Radio Devie	e: BTS
0 dB/div	Ref 53.90 d	Bm						Mkr1 -34	746 MH 220 dBr
og 13.9									
3.9									
3.9									
3.9					mannen		many pre-		
190									
10					1				
6.1					1				
6.1					1		V		
16.1					¢'		¥		
0.1									
enter 746 Res BW 1				#VE	300 kH	Iz			pan 20 MH p 237.6 m
Channe	l Power			Powe	r Spectra	I Density	,		
-29	-29.87 dBm / 30 kHz		Hz	-					
G						STATUS			

Figure 8.3-35: Conducted band edge emission at 746 MHz, Port D, twochannel operation, QPSK, configuration 1

Keysight Spectru	um Analyzer - Channel P	ower							- 6
larker 1 74	RF 50 Ω DC 45.90 MHz			Center Freq:	745.850000				0:53:46 AM Jan 05, 201 Std: None
	40.00 mm2	#IFG	ain:Low	Trig: Free Ru #Atten: 16 dB		Avg Hold:>	100/100		Device: BTS
0 dB/div	Ref 53.90 dE	šm							1 745.9 MH -32.137 dBr
og									
3.9									
3.9									
3.9					[
.90					ļ				
.10	_						$+ \gamma$	_	
6.1							l V		
6.1							V		
16.1		-							
enter 745. Res BW 3				#VBM	/ 300 kH	17		Sv	Span 20 MH veep 26.53 m
	V KIIZ			***	000 Ki	12			100p 20.00 m
Channe	el Power			Power S	Spectra	I Density			
-27	7.17 dBm	/ 100 kH	z	-7	7.17	dBm /⊦	z		

Figure 8.3-34: Conducted band edge emission at 745.9 MHz, Port C, twochannel operation, QPSK, configuration 1

Keysight Spectrum Ar	50 Q DC			411011-01170		10.54	01 AM Jan 05, 201
arker 1 745.				ALIGN AUTO 745.850000 MHz		Radio Std:	
	00 11112	#FGain:Low	Trig: Free Ru #Atten: 16 dB		ld:>100/100	Radio Devi	ce: BTS
dB/div R	ef 53.90 dBm						745.9 MH .932 dBi
3.9							
19							
19							
1.9				-			
0							
0							
1			ł				
1			1		V		
1							
enter 745.9 M ResBW 30 k			#VBW	300 kHz		S Swee	pan 20 Mi p 26.53 n
Channel F	ower		Power S	pectral Dens	ity		
-24.4	3 dBm / 10	0 kHz	-7	4.43 dBm	/Hz		
			-				
				STATUS			
3							

Figure 8.3-36: Conducted band edge emission at 745.9 MHz, Port D, twochannel operation, QPSK, configuration 1



pan 20.000 MHz Center Freq: 766.01600 MHz Radio Device: BTS 0.000 MHz Trig: Freq Runn Avg Heid:>100100 Radio Device: BTS 0.000 MHz Mkr1 766 I -35.533 d 0.000 MHz Mkr1 766 I -35.533 d 0.000 MHz Image: Stress of the stress of t	Keysight Spectrum Analyzer - Ch RF 50 Ω		9	ENSE:INT	A	LIGN AUTO	10:42:	🗢 🕼 🖡
Bill Ref 53.90 dBm Mkr1 756 I 0 dB/div Ref 53.90 dBm -35.533 d 0 dB/div Ref 53.90 dBm -35.533 d 0 dB/div Ref 53.90 dBm -35.533 d 0 dB/div Image: Signal divides the sis divides the signal divides the signal divides the signa	pan 20.000 MHz						Radio Std:	None
a Blativ Ref 53.90 dBm -35.533 d a Blativ Ref 53.90 dBm -35.533 d a Blativ a Blativ a Blativ		#				Avg Hold:>100/100	Radio Devi	ce: BTS
non-constrained in the second		0 dBm			_			
channel Power Spectral Density								
here 756 MHz span 20 see BW 10 KHz #VBW 300 KHz Span 20 Sweep 237. Channel Power Power Spectral Density	.9							
nter 756 MHz \$Power Spectral Density	9							-
nter 756 MHz es BW 10 kHz #VBW 300 kHz Span 20 Sweep 237. Channel Power Power Spectral Density	9							
nter 756 MHz es BW 10 kHz #VBW 300 kHz Spar 20 es BW 10 kHz #VBW 300 kHz Sweep 237. Channel Power Power Spectral Density	1							
hter 756 MHz \$pan 20 es BW 10 kHz #VBW 300 kHz \$span 20 Sweep 237. Channel Power Power Spectral Density	- I - I							
nter 756 MHz span 20 es BW 10 kHz #VBW 300 kHz Span 20 Sweep 237. Channel Power Power Spectral Density		V			1			
nter 756 MHz Span 20 es BW 10 kHz #VBW 300 kHz Sweep 237. Channel Power Power Spectral Density		V			<u>'</u>			
es BW 10 kHz #VBW 300 kHz Sweep 237. Channel Power Power Spectral Density						i manual and a second		
Channel Power Power Spectral Density				#\/8	2M 300 KH	7		
	ICS DW TO KITZ			<i>n</i> v i	500 Ki	6	UNCC	p 207.011
-31 16 dBm / 30 kHz -75 93 dBm /Hz	Channel Power			Powe	Spectra	I Density		
$-31.16 dBm / 30 \mu H_{2}$ $-75.93 dBm / H_{2}$		-			75 00			
	-31.16 di	3m / 30 kH	z		15.93	dBm /Hz		
						-41		
						STATUS		

Figure 8.3-37: Conducted band edge emission at 756 MHz, Port A, twochannel operation, QPSK, configuration 1

Keysight Spectrum Ana RF	yzer - Channel Power		SENSE:INT		ALIGN AUTO	10.47	
pan 20.000 M			Center Fre	eq: 756.01500	MHz	Radio Std	
		#IFGain:Low	Trig: Free #Atten: 16	Run dB	Avg Hold:>100/1	100 Radio Dev	rice: BTS
	f 53.90 dBm						1 756 MH 5.313 dBr
og 3.9							
3.9							
3.9							_
1.9				<u> </u>			
90				<u> </u>			_
10 /				l			
a 👘	V						
i.1	¥			1			_
6.1				an and a surface			
enter 756 MHz Res BW 10 kH			#VE	- BW 300 kH	Iz		Span 20 MH ep 237.6 m
Channel Po	ower		Powe	r Spectra	al Density		
-30.6	7 dBm / 30	kHz	-	75.44	dBm /Hz		
-					1		
8					STATUS		

Figure 8.3-39: Conducted band edge emission at 756 MHz, Port B, twochannel operation, QPSK, configuration 1

50 Ω DC			SENSE:INT		LIGN AUTO			
				q: 756.150000			Radio Std:	16 AM Jan 05, 201 None
. 10 MHZ		•	Trig: Free	Run	Avg Hold:>	100/100	Dadia Davi	BTC
	#	FGain:Low	#Atten: 10	db				
								.541 dBr
Ref 53.90 dB	m						-51	.041 0.01
-								
	\rightarrow							
	-+-							
	_\/							
				1				
				mannens	-		_	

			#VE	SW 300 KH	z		S Swee	pan 20 MH p 26.53 m
Power			Power	Spectra	I Densitv			
02 dBm	/ 100 k	Hz	-	77.02	dBm /H	7		
	/ 100 1					-		
					STATUS			
	MHz kHz Power	Ref 53.90 dBm	Ref 53.90 dBm	Ref 53.90 dBm MHZ KHZ WHZ WHZ WHZ WHZ WHZ WHZ WHZ W	#FGeint.ov #Atten: 16 dB Ref 53.90 dBm 1 1 1 1 1 1 1 1 1 1 1 1 1	Ref 53.90 dBm Ref 53.90 dBm MHz KHz #VBW 300 KHz Power Power 02 dBm / 100 kHz -77.02 dBm /H	MHZ #VBW 300 kHz Power Power Spectral Density 02 dBm / 100 kHz -77.02 dBm /Hz	Image: state in the image: st

Figure 8.3-38: Conducted band edge emission at 756.1 MHz, Port A, twochannel operation, QPSK, configuration 1

Keysight Spectrum Analyz			
arker 1 756.10		SENSE:INT ALIGN AUTO Center Freq: 756.150000 MHz	10:55:33 AM Jan 05, 20 Radio Std: None
		Trig: Free Run Avg Hold:> #Atten: 16 dB	100/100 Radio Device: BTS
	#FGain:Lov	y #Atten: 16 db	
			Mkr1 756.1 MH -31.382 dB
odB/div Ref	53.90 dBm		-51.582 dB
3.9			
3.9			
3.9			
3.9			
90			
10			
5.1			
	- V	1	
5.1		The second se	
6.1		Annual and a second and a secon	
enter 756.2 MH	z		Span 20 Mi
Res BW 30 kHz		#VBW 300 kHz	Sweep 26.53 n
Channel Po	wer	Power Spectral Density	
-27.05	dBm / 100 kHz	-77.05 dBm /н	z
a		1 STATUS	
a		STATUS	

Figure 8.3-40: Conducted band edge emission at 756.1 MHz, Port B, twochannel operation, QPSK, configuration 1



Keysight Spec	trum Analyzer - Channe							
pan 20.0		C	SENSE:INT	Freg: 756.015	ALIGN AUTO	10:44:36 AM Jan 05, 2018 Radio Std: None		
pan 20.0				ree Run	Avg Hold:>100/100	Radio Sta.	- Chief	
		#IFGain:				Radio Devie	e: BTS	
) dB/div	Ref 53.90 d	IBm		-		Mkr1 -34	756 MH .313 dB	
og								
3.9								
3.9				-				
3.9				-		-		
3.9	and a state of the			7				
90								
10		V		1				
1 L		V V						
1		V		1.				
5.1		U U		• '				
5.1				- Andrew				
enter 75						S	an 20 Mi	
Res BW	10 KHZ		Ŧ	VBW 300	KHZ	Swee	p 237.6 n	
Chann	nannel Power	Pow	er Spect					
-2	-29.79 dBm / 30 kHz			-74.50				
					STATUS			

Figure 8.3-41: Conducted band edge emission at 756 MHz, Port C, twochannel operation, QPSK, configuration 1

pan 20.000 I	nalyzer - Channel Po 50 Ω DC WHz		- 1 ^{- 1}		rq: 756.0150		10:46: Radio Std:	07 AM Jan 05, 201
		#1	FGain:Low	Trig: Free #Atten: 16	dB	Avg Hold:>100/100	Radio Devi	ce: BTS
	ef 53.90 dBi	m						756 MH .304 dBn
og 13.9								
3.9								
3.9								
3.9			~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~				_	
.90								
10		H						
6.1		- V			<u> </u>			
6.1		1			1			
6.1								
enter 756 Mi Res BW 10 k				#VE	3W 300 k	Hz		pan 20 MH p 237.6 m
Channel F	hannel Power -30.65 dBm / 30 kHz			Power				
-30.6			z	-	75.42	dBm /Hz		
a						STATUS		

Figure 8.3-43: Conducted band edge emission at 756 MHz, Port D, twochannel operation, QPSK, configuration 1

	im Analyzer - Channel P	ower							- 6
arker 1 75	RF 50 Ω DC			SENSE:INT Center Fre	g: 756.15000	ALIGN AUTO		Radio Std:	14 AM Jan 05, 201 None
	0.10 MHZ		•		Run	Avg Hold:>100	/100	Radio Devi	
		#	IFGain:Low	#Atten: 16	dВ				
									'56.1 MH .464 dBr
) dB/div	Ref 53.90 dE	Sm						-30	.404 UDI
3.9					——				
3.9					——				
3.9									
3.9		\rightarrow		- 1					
90									
10								-	
6.1									
5.1		V			<u>'</u>				
5.1									
							A		
enter 756. Res BW 30				#VE	300 k	Hz		S Swee	pan 20 MH p 26.53 m
Channe	Power			Power	Spectr	al Density			
-25	5.52 dBm	/ 100 k	Hz	-	75.52	dBm /Hz			

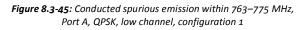
Figure 8.3-42: Conducted band edge emission at 756.1 MHz, Port C, twochannel operation, QPSK, configuration 1

- Channel Power		CONCE-INT			10.54	55 AM Jan 05, 201
MHz		Center Fre	eq: 756.15000	MHz		
				Avg Hold:>100/100	Radio Devi	ce: BTS
	WI Gam.cow				Mkr1 7	756 1 MH
3 90 dBm					-30	.779 dB
						+
						+
			-			+
	-	+ +			_	-
¥					_	
V V			1		_	
					_	
		#VE	300 kH	Iz	Span 20 M Sweep 26.53	
/er		Powe	r Spectra	al Density		
dBm / 100	kHz		76.54	dBm /Hz		
	3.90 dBm	3.00 dBm	And the second s	30.0 DC SEMECHT WHZ WHZ Center Free, 766, 15000 Trig: Free Run zkinet: 16 dB 3.90 dBm Image: 16 dB Image: 16 dB Image: Imag	Atom Arro MHz Center Free: 76:15000 MHz Trg: Free: Ren Arg Heid:>100/100 #FGainLow #Atten: 16 db 3.90 dBm #VBW 300 kHz rer Power Spectral Density	Street-Entry Alton AUTO Robinson MHz Center Freg: Street Str

Figure 8.3-44: Conducted band edge emission at 756.1 MHz, Port D, twochannel operation, QPSK, configuration 1



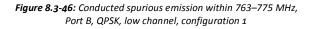
Keysight Sp	ectrum Analyzer - Swept SA RF 50 Ω DC			SENSE:INT		IGN AUTO		02:11:22	
Start Fre	q 763.000000 N	P	NO: Wide 🖵		Run	Avg Type: Avg Hold:>	RMS 100/100	TRA	ACE 1 2 3 4 5 6 ACE A WWWW DET A NNNNN
10 dB/div	Ref Offset 51.9 dB Ref 22.50 dBm						N	1kr1 773. -57.(644 MHz 004 dBm
12.5									
2.50									
7.50									
17.5									
27.6									
37.5									
47.5									DL1 -52.00 dBm
67.5									
								01 77	
Start 763. #Res BW			#VB	W 8.0 MHz'		-4	Sweep	Stop 77 31.60 ms	5.000 MHz (1001 pts)
ISG						STATUS			



Keysight Sp	RF 50 Ω DC			SENSE:INT	A	LIGN AUTO		02:12:2	🗢 🐼 🗮
Start Fre	eq 763.000000 N	F	PNO: Wide 🖵	Trig: Free Ru #Atten: 6 dB	'n	Avg Type: Avg Hold:>	RMS 100/100	т	TYPE A WWWW
0 dB/div	Ref Offset 51.9 dB Ref 22.50 dBm							Mkr1 765 -56	5.616 MHz .776 dBm
.09									
12.5									
2.60									
7.50									
17.5									
27.5									
37.5									
47.5									DL1 -52.00 dBm
57.5		•	*****				****		***
67.5									
Start 763	.000 MHz							Stop 7	75.000 MHz
#Res BW	6.2 kHz		#VB	W 8.0 MHz*		-4	Swee	p 31.60 m	s (1001 pts)
ISG						STATUS			

Figure 8.3-47: Conducted spurious emission within 763–775 MHz, Port C, QPSK, low channel, configuration 1

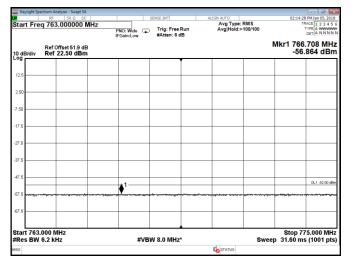
 Reysign op 	RF 50 Ω DC		SENSE:INT	ALIGN AUTO		02:11	
			SENSEIINI		Type: RMS	02:1	TRACE 1 2 3 4 5
start Fre	q 763.000000 MHz	PNO: Wide G	Trig: Free Run #Atten: 6 dB	Avgit	lold:>100/100	Mket 77	DET A NNNN
10 dB/div	Ref Offset 51.9 dB Ref 22.50 dBm					-5	6.808 dBr
12.5							_
2.60							_
7.50							
17.5					_		
27.5							
37.5							
47.5						1	DL1 -52.00 dB
57.5 vm-1-1	,				~		
67.5							
tart 763 Res BW	.000 MHz 6.2 kHz	#VB	W 8.0 MHz*		Sw	Stop eep 31.60	775.000 MH ms (1001 pts
ISG				STAT			

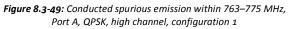


	RF	lyzer - Swept SA 50 Ω DC 0000000			SENSE:INT	A	LIGN AUTO	RMS	TF	5 PM Jan 05, 201
Juni	104 703.	0000001		PNO: Wide G	Trig: Free #Atten: 6 d	Run iB	Avg Hold:>	100/100		DET A NNNN
10 dB/div		fset 51.9 di 2.50 dBm							/lkr1 765 -56.	.580 MH 924 dBr
12.5										
2.50										
7.50										
17.5										
27.5										
37.6										
47.5			* 1							DL1 -52.00 dE
57.5	*****				,,			*****	4, yan ya an	*****
-67.5										
	63.000 MI W 6.2 kH		1	#VB	W 8.0 MHz	*		Sweer	Stop 77 31.60 ms	75.000 MH
//SG							K STATUS			

Figure 8.3-48: Conducted spurious emission within 763–775 MHz, Port D, QPSK, low channel, configuration 1







Keysight Spectrum Analyz	ter - Swept SA		SENSE:INT	AL	IGN AUTO		02:14:02	PM Jan 05, 2018
Start Freq 763.0	00000 MHz	PNO: Wide	Trig: Free R #Atten: 6 dB	un 3	Avg Type: Avg Hold:>	RMS 100/100	TR	ACE 1 2 3 4 5 0 DET A NNNN
	set 51.9 dB .50 dBm		•				Mkr1 763. -56.	.444 MHz 912 dBm
12.5								
2.60								
7.50								
17.5								
27.5								
37.5								
47.5								DL1 -52.00 dBm
57.5 ~~~~				****	*********		****	- <u></u>
67.5								
Start 763.000 MH Res BW 6.2 kHz	z	#VB	W 8.0 MHz*			Swee	Stop 77 p 31.60 ms	5.000 MHz (1001 pts)
ASG					STATUS			

Figure 8.3-51: Conducted spurious emission within 763–775 MHz, Port C, QPSK, high channel, configuration 1

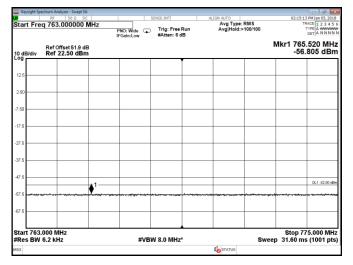
Keysight Spectrum Analyzer - Swept SA RF 50 Ω DC	SENSE:INT	ALIGN AUTO	02:14:15 PM Jan 05. 201
tart Freq 763.000000 MHz	PNO: Wide Trig: Free IFGain:Low #Atten: 6 d	Avg Type: RMS Run Avg Hold:>100/1	TRACE 1 2 3 4 5
Ref Offset 51.9 dB 0 dB/div Ref 22.50 dBm	iroan.cow Priter. or	•	Mkr1 771.760 MH -56.919 dBr
12.5			
2.50			
7.50			
17.5			
27.5			
37.5			
47.5			1DL1-52.00 d
57.5 ·····			
37.6			
tart 763.000 MHz Res BW 6.2 kHz	#VBW 8.0 MHz	*	Stop 775.000 MH Sweep 31.60 ms (1001 pt

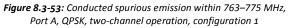
Figure 8.3-50: Conducted spurious emission within 763–775 MHz, Port B, QPSK, high channel, configuration 1

O:Wide Trig: Free Ru ainLow #Atten: 5 dB	Avg Type: Avg Hold:>	100/100	17940E[12343 DETA NUMM DETA NUMM -57.050 dBr
		Mkr1	1 767.368 MH -57.050 dBr
			DL1 -52.00 dl
• • • • • • • • • • • • • • • • • • •	***		
#VBW 8.0 MHz*		S Sweep 31.	top 775.000 MH .60 ms (1001 pt
	#VBW 8.0 MHz*		#VBW 8.0 MHz* Sweep 31

Figure 8.3-52: Conducted spurious emission within 763–775 MHz, Port D, QPSK, high channel, configuration 1



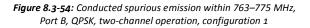




Keysight Spectru	m Analyzer - Swept SA RF 50 Ω DC			SENSE:INT		ALIGN AUTO		02:15:	🕞 🕼 🛃
Start Freq 7	763.000000 M	P	NO: Wide Gain:Low	Trig: Free F #Atten: 6 d	Run B	Avg Type: Avg Hold:>	RMS 100/100	I	TYPE A WWWWW DET A NNNN
	ef Offset 51.9 dB ef 22.50 dBm							Mkr1 774 -56	.208 MHz .854 dBm
12.5									
2.50									
7.50									
17.5									
27.5									
37.5									
47.5									DL1 1 .00 dBm
57.5 			*****		****				
67.5									
Start 763.00 #Res BW 6.2			#VB	W 8.0 MHz*			Swee	Stop 7 ep 31.60 m	75.000 MHz s (1001 pts)
nsg						K STATUS	-	-p	

Figure 8.3-55: Conducted spurious emission within 763–775 MHz, Port C, QPSK, two-channel operation, configuration 1

Keysight Sp	ectrum Analyzer - Swept SA				- 6
	RF 50 Ω DC		ENSE:INT	ALIGN AUTO	02:15:36 PM Jan 05, 2018
Start Fre	eq 763.000000 MHz	PNO: Wide IFGain:Low	Trig: Free Run #Atten: 6 dB	Avg Type: RMS Avg Hold:>100/100	TRACE 1 2 3 4 5 TIPE A WWWW DET A N N NN Mkr1 764.752 MH
OdB/div	Ref Offset 51.9 dB Ref 22.50 dBm		Ţ		-56.679 dBn
12.5					
2.60					
7.50					
17.5					
27.5					
37.5					
47.5	<u>1</u>				DL1 -52.00 dt
57.5 					,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
67.5					
tart 763. Res BW	.000 MHz 6.2 kHz	#VB\	N 8.0 MHz*	Sw	Stop 775.000 MH eep 31.60 ms (1001 pts
ISG				STATUS	

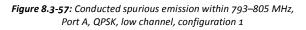


250	
7.50	
250	
12.5	

Figure 8.3-56: Conducted spurious emission within 763–775 MHz, Port D, QPSK, two-channel operation, configuration 1



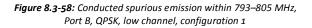
Keysight Spectrum Analyzer - Swej	pt SA	SENSE:INT	411	GN AUTO	03/20/1	7 PM Jan 05, 2018
Stop Freq 805.0000		Wide 😱 Trig: Fre	e Run	Avg Type: RMS Avg Hold:>100/1	T	RACE 1 2 3 4 5 6 TYPE A WWWW DET A NNNNN
Ref Offset 51. 10 dB/div Ref 22.50 d			.		Mkr1 804 -56	.208 MHz .901 dBm
12.5						
2.50						
-7.50						
17.5						
27.6						
37.5						
47.5						DL1 1 .00 dBm
57.5 	****	*****				han the second
67.5						
Start 793.000 MHz #Res BW 6.2 kHz		#VBW 8.0 MH	z*		Stop 8 Sweep 31.60 m	05.000 MHz s (1001 pts)
ASG				STATUS		



Keysight Spectrum Analyzer - Swept SA			- # *
RF 50 Ω DC Stop Freq 805.000000 MHz	PNO: Wide C Trig: Free Run	IGN AUTO Avg Type: RMS Avg Hold:>100/100	02:19:55 PM Jan 05, 2018 TRACE 1 2 3 4 5 (TIPE A WWWW DET A N N N N
Ref Offset 51.9 dB 10 dB/div Ref 22.50 dBm	IFGain:Low #Atten: 6 dB		Mkr1 801.712 MHz -56.773 dBm
12.5			
2.50			
7.50			
17.5			
27.5			
37.5			
47.5		<u>1</u>	DL1 -52.00 dBe
57.5 mar	۵.۳۰۰ ماران ماران میشود و با هم میشود. میشود میشود و با هم میشود و با هم میشود و میشود و میشود و میشود و میشود میشود و میشود و با میشود و میشود		
67.5			
Start 793.000 MHz #Res BW 6.2 kHz	#VBW 8.0 MHz*	Sw	Stop 805.000 MHz eep 31.60 ms (1001 pts)
ASG		STATUS	

Figure 8.3-59: Conducted spurious emission within 793–805 MHz, Port C, QPSK, low channel, configuration 1

Keysight Sp	pectrum Analyzer - Swept SA				- G
	RF 50 Ω DC	SENS	E:INT	ALIGN AUTO	02:20:06 PM Jan 05, 201
top Fre	eq 805.000000 MHz		Trig: Free Run #Atten: 6 dB	Avg Type: RMS Avg Hold:>100/100	TRACE 1 2 3 4 5 TYPE A WWWW DET A NNNN Mkr1 804.196 MH
0 dB/div	Ref 22.50 dBm		•		-56.923 dBr
12.5					
2.60					
.50					
7.5					
7.5					
7.5					
7.5					DL1 1 .00 d
7.5			~~~~		~~
7.5					
	.000 MHz 6.2 kHz	#VBW :	B.0 MHz*	s	Stop 805.000 MH weep 31.60 ms (1001 pt
a				STATUS	

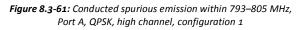


Keysight Sp	RF 50 Ω DC			SENSE:INT		LIGN AUTO		02-10-42	🕞 🕼 💽 2 PM Jan 05, 2018
Stop Fre	q 805.000000 M	P	NO: Wide	Trig: Free I #Atten: 6 d	Run	Avg Type: Avg Hold:>		TF	DET A NNNN
10 dB/div	Ref Offset 51.9 dB Ref 22.50 dBm						r	/lkr1 804 -56.	.316 MH 980 dBr
12.5									
2.50									
-7.50									
17.5									
-27.5									
-37.5									
47.5									DL1 4 9 0 0E
57.5		*****	······	****	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~			***	••••
67.5									
Start 793 #Res BW	.000 MHz 6.2 kHz		#VB	W 8.0 MHz			Sweet	Stop 80 31.60 ms)5.000 MH s (1001 pts
asa 🔱 File	<cse 793-805="" [<="" mhz="" td=""><td>O QPSK high</td><td>_0002.png></td><td>saved</td><td></td><td>KSTATUS</td><td></td><td></td><td></td></cse>	O QPSK high	_0002.png>	saved		K STATUS			

Figure 8.3-60: Conducted spurious emission within 793–805 MHz, Port D, QPSK, low channel, configuration 1



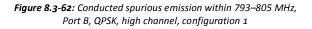
20	ectrum Analyzer - Swept SA RF 50 Ω DC q 805.000000 M	P	NO: Wide	SENSE:INT	Run	LIGN AUTO Avg Type: Avg Hold:>	RMS 100/100	TR 1	PM Jan 05, 2018 ACE 1 2 3 4 5 6 YPE A WWWWW DET A NNNNN
0 dB/div	Ref Offset 51.9 dE Ref 22.50 dBm	1	Gain:Low	#Atten: 6 d	в	1	r	/lkr1 803.	
12.5									
2.60									
7.50									
17.5									
27.5									
37.5									
47.5									1 -52.00 dBr
57.5									
67.5									
tart 793. Res BW	000 MHz 6.2 kHz		#VB	W 8.0 MHz			Sweet	Stop 80 31.60 ms	5.000 MHz (1001 pts
sa 🗼 File ·	<cse 793-805="" mhz<="" td=""><td>A QPSK 2C 2</td><td>2x 5MHz_000</td><td>2.png> saved</td><td>I</td><td>STATUS</td><td></td><td></td><td></td></cse>	A QPSK 2C 2	2x 5MHz_000	2.png> saved	I	STATUS			



X	RF 50 Ω DC	PNO: Wide	SENSE:INT	ALIGN AUTO Avg Type: RMS Avg Hold:>100/100	02:18:50 PM Jan 05, 2018 TRACE J1 2 3 4 5 1 TYPE A WWWW DET A NN NN
10 dB/div	Ref Offset 51.9 dB Ref 22.50 dBm	IFGain:Low	#Atten: 6 dB		Mkr1 798.964 MHz -56.947 dBm
12.5					
2.60					
7.50					
17.5					
27.5					
37.5					
47.5					DL1-52.00 dBe
57.5	****		•••••		
67.5					
Start 793 #Res BW	.000 MHz 6.2 kHz	#VB	W 8.0 MHz*	S	Stop 805.000 MHz weep 31.60 ms (1001 pts)
ASG				K STATUS	

Figure 8.3-63: Conducted spurious emission within 793–805 MHz, Port C, QPSK, high channel, configuration 1

Stop Freq 805.000000 MHz Avg Type: RMS PNO: Wide Trig: Free Run Avg[Hold:>100/100 #Atten: 6 dB	
PHC, Wide, PHC, WIDE,	02:18:34 PM Jan 05, 201
98	795.880 MH -56.684 dBi
75	
75	
▲1	
75	DL1 -52.00 dl
77.5	
	top 805.000 MH 60 ms (1001 pt



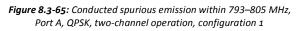
ISG		STATUS	
Start 793.000 MHz #Res BW 6.2 kHz	#VBW 8.0 MHz*		Stop 805.000 MH eep 31.60 ms (1001 pt
67.5			
57.5			
47.5			DL1-52.00 d
37.5			
27.5			
17.5			
7.50			
2.60			
12.5			
og			
Ref Offset 51.9 dB 0 dB/div Ref 22.50 dBm			Mkr1 797.872 MH -56.812 dB
500 FTEQ 003.000000 MH2	PNO: Wide Trig: Free Run IFGain:Low #Atten: 6 dB	Avg Hold:>100/100	DET A NNN
RF 50 Ω DC Stop Freq 805.000000 MHz	SENSE:INT	ALIGN AUTO Avg Type: RMS	02:19:01 PM Jan 05, 20 TRACE 1 2 3 4

Figure 8.3-64: Conducted spurious emission within 793–805 MHz, Port D, QPSK, high channel, configuration 1

Testing data Clause 27.53 Spurious emissions at RF antenna connector FCC Part 27



Keysight Spe	ctrum Analyzer - Swept SA RF 50 Ω DC	_		SENSE:INT	4	IGN AUTO		02:17:40	PM Jan 05, 2018
Stop Free	q 805.000000 N	F	NO: Wide Gain:Low		Run	Avg Type: Avg Hold:>	RMS 100/100	TR	ACE 1 2 3 4 5 6 TYPE A WWWW DET A NNNNN
10 dB/div	Ref Offset 51.9 dB Ref 22.50 dBm					1	N	/lkr1 795 -56.	.460 MHz 820 dBm
12.5									
2.50									
-7.50									
-17.5									
-27.5									
-37.6									
47.5		1							DL1 -52.00 dBm
-57.5								*******	·····
67.6									
Start 793. #Res BW			#VB	W 8.0 MHz			Sweep	Stop 80 31.60 ms	5.000 MHz (1001 pts)
MSG						STATUS			



Keysight Sp	RF 50 Ω DC			SENSE:INT		ALIGN AUTO		02:17:	👝 🕼 💌
Stop Fre	q 805.000000 I		PNO: Wide G	Trig: Free R #Atten: 6 dB	tun 3	Avg Type: Avg Hold:>	RMS 100/100		TYPE A WWWW DET A NNNN
I0 dB/div	Ref Offset 51.9 dE Ref 22.50 dBm	3	1				1	Mkr1 80 -56	1.292 MHz 3.921 dBm
12.5									
2.50									
7.50									
17.5									
27.5									
37.5									
47.5						-	1		DL1 -52.00 dBm
57.5			*****						
67.5									
Start 793 Res BW	.000 MHz 6.2 kHz		#VB	W 8.0 MHz*			Swe	Stop 8 ep 31.60 m	305.000 MHz ns (1001 pts)
ISG						STATUS			

Figure 8.3-67: Conducted spurious emission within 793–805 MHz, Port C, QPSK, two-channel operation, configuration 1

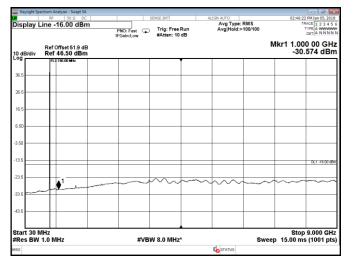
RF 50 Ω DC			
	SENSE:INT	ALIGN AUTO	02:17:29 PM Jan 05, 2018
Ref Offset 51.9 dB	PNO: Wide Trig: Free Run IFGain:Low #Atten: 6 dB	Avg Type: RMS Avg Hold:>100/100	Mkr1 794.512 MH -56.887 dBr
2.5			
50			
50			
7.5			
7.5			
7.5			
7.5			DL1-52.00 d
7.5			, &
7.5			
art 793.000 MHz Res BW 6.2 kHz	#VBW 8.0 MHz*	Sw	Stop 805.000 MH eep 31.60 ms (1001 pt

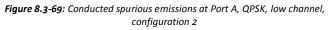
Figure 8.3-66: Conducted spurious emission within 793–805 MHz, Port B, QPSK, two-channel operation, configuration 1

Keysight Spectrum Analyzer - Swept Si		SENSE:INT	ALIGN AUTO		😑 🐼 📕 2:16:56 PM Jan 05, 201
Stop Freq 805.000000		Teles Free Days	Avg Type: R Avg Hold:>1	MS	TRACE 1 2 3 4 5 TYPE A WWW DET A NNNT
Ref Offset 51.9 d 10 dB/div Ref 22.50 dBr	B n			Mkr1	796.468 MH -56.925 dB
12.5					
2.50					
7.50					
17.5					
27.5					
37.5					
47.5	1				DL1 -52.00
57.5					
67.5					
Start 793.000 MHz #Res BW 6.2 kHz	#VE	W 8.0 MHz*		Sto Sweep 31.6	op 805.000 M 0 ms (1001 p
ASG			STATUS		

Figure 8.3-68: Conducted spurious emission within 793–805 MHz, Port D, QPSK, two-channel operation, configuration 1







sg			to status		
tart 30 MHz Res BW 1.0 MHz	#V	BW 8.0 MHz*		Sweep 15	Stop 9.000 GHz .00 ms (1001 pts)
43.6					
33.5					
23.5			\sim		~~~~
13.5					DL1 -16.00 dBr
13.5					
3.50					
5.50					
16.5					
26.5					
36.5					
og					
Ref Offset 51.9 0 dB/div Ref 46.50 dB	dB im			Mkr1	1.000 00 GHz -30.729 dBm
	PNO: Fast G IFGain:Low	Trig: Free Run #Atten: 10 dB	Avg Hold:>1		DETANNNN
isplay Line -16.00 dE	Bm		Avg Type: R	MS	TRACE 1 2 3 4 5 1 TYPE A WWWW
Keysight Spectrum Analyzer - Swept RF 50 Q		SENSE:INT	ALIGN AUTO		02:44:39 PM Jan 05, 2018

Figure 8.3-71: Conducted spurious emissions at Port A, QPSK, high channel, configuration 2



Figure 8.3-70: Conducted spurious emissions at Port D, QPSK, low channel, configuration 2

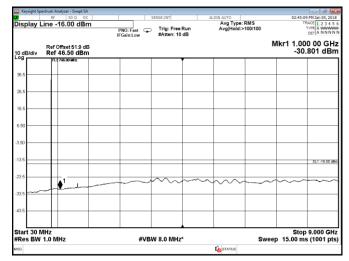
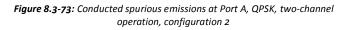


Figure 8.3-72: Conducted spurious emissions at Port D, QPSK, high channel, configuration 2



Keysight Spectrum Analyzer - Swept SA	SENSE:INT	ALIGN AUTO		02:43:51 PM Jan 05, 2018
Display Line -16.00 dBm	PNO: Fast Trig: Free F IFGain:Low #Atten: 10 o	Avg Type: tun Avg Hold:>	RMS 100/100	TYPE A WWWW DET A NNNNN
Ref Offset 51.9 dB 0 dB/div Ref 46.50 dBm			Mkr1	1.000 00 GHz -30.627 dBm
36.5				
26.5				
16.5				
6.50				
3.50				
13.5				DL1-16.00 @Bm
23.5		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		~~~~
43.5				
Start 30 MHz #Res BW 1.0 MHz	#VBW 8.0 MHz*	To STATUS	Sweep 15	Stop 9.000 GHz .00 ms (1001 pts)



Aarker 1 746.00 MHz Center Fres: 745.8000 MHz Radio Std: None 0:dBldiv Ref 53.90 dBm Avg Held>>100/100 Radio Std: None 0:dBldiv Ref 53.90 dBm	- @ 11:14:31 AM Jan 05.2	ALIGN AUTO	:INT	8		- Channel Power		iight Spect
Antien: 16 dB Radio Device: BTS Participation: BTS MKr1 746 30.892 1 9 9 9 9 9 9 9 9 9 9 9 9 9		000 MHz	enter Freq: 745.9	1 ' '				er 17
0 dB/dv Ref 53.90 dBm -30.892 f 0 dB/dv 1 1 0 dB/dv 1	Radio Device: BTS	Avg Hold:>100/100			#IFGai			
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Figure 8.3-75: Conducted band edge emission at 746 MHz, Port A, QPSK, low channel, configuration 2

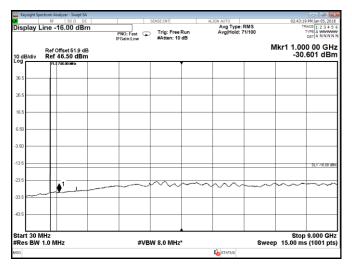


Figure 8.3-74: Conducted spurious emissions at Port D, QPSK, two-channel operation, configuration 2

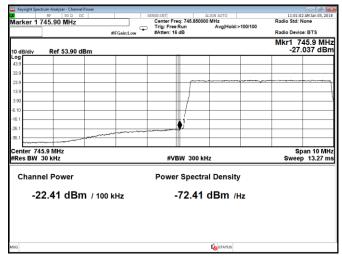


Figure 8.3-76: Conducted band edge emission at 745.9 MHz, Port A, QPSK, low channel, configuration 2