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ANNEX A - MEASUREMENT RESULTS

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MAXIMUM OUTPUT POWER

Antenna gain (dBi)

	9 4 (4. 2.)												
	LTE Band 4_Uplink frequency band : 1710 to 1755 MHz												
BW (MHz)	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)				
		1710.7		1	0	23.09	18.73	30	-11.27				
	19957		QPSK	1	5	22.79	18.43	30	-11.57				
	1.4 20175 1732.5	17 10.7	QF3N	3	2	23.02	18.66	30	-11.34				
				6	0	21.92	17.56	30	-12.44				
			1	0	22.99	18.63	30	-11.37					
1 1		1732 5	QPSK	1	5	22.69	18.33	30	-11.67				
1.4		1732.3	QF3N	3	2	22.89	18.53	30	-11.47				
				6	0	21.65	17.29	30	-12.71				
	20393	1754.3	QPSK	1	0	22.69	18.33	30	-11.67				
				1	5	22.77	18.41	30	-11.59				
				3	2	22.77	18.41	30	-11.59				
				6	0	21.65	17.29	30	-12.71				
				1	0	21.62	17.26	30	-12.74				
	19957	1710.7	16QAM	1	5	21.65	17.29	30	-12.71				
	19901	17 10.7	IOQAIVI	3	2	21.83	17.47	30	-12.53				
				6	0	20.76	16.40	30	-13.6				
				1	0	21.65	17.29	30	-12.71				
1.4	20175	1732.5	16QAM	1	5	21.64	17.28	30	-12.72				
1.4	20173	1732.3	IOQAIVI	3	2	21.75	17.39	30	-12.61				
				6	0	20.78	16.42	30	-13.58				
				1	0	21.65	17.29	30	-12.71				
	20393	1754.3	16QAM	1	5	21.75	17.39	30	-12.61				
	20000	17.54.5	IUQAIVI	3	2	21.73	17.37	30	-12.63				
				6	0	20.79	16.43	30	-13.57				

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Antenna gain (dBi)

7 11 110 1 11 101	gairi (abi)	4.00											
	LTE Band 4_Uplink frequency band : 1710 to 1755 MHz												
BW (MHz)	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)				
				1	0	23.08	18.72	30	-11.28				
	19965	1711.5	QPSK	1	14	22.95	18.59	30	-11.41				
	19900	1711.5	QP3N	8	4	22.03	17.67	30	-12.33				
				15	0	21.96	17.60	30	-12.4				
	3 20175 1732.5		1	0	23.04	18.68	30	-11.32					
2		1732 5	QPSK	1	14	22.89	18.53	30	-11.47				
3		1732.5	QPSK	8	4	21.77	17.41	30	-12.59				
				15	0	21.71	17.35	30	-12.65				
	20385	1753.5	QPSK	1	0	22.72	18.36	30	-11.64				
				1	14	22.73	18.37	30	-11.63				
				8	4	21.72	17.36	30	-12.64				
				15	0	21.78	17.42	30	-12.58				
				1	0	21.76	17.40	30	-12.6				
	19965	1711.5	16QAM	1	14	21.61	17.25	30	-12.75				
	15505	1711.5	TOQAW	8	4	21.17	16.81	30	-13.19				
				15	0	20.81	16.45	30	-13.55				
				1	0	21.66	17.30	30	-12.7				
3	20175	1732.5	16QAM	1	14	21.79	17.43	30	-12.57				
	20170	1702.0	IOQAIVI	8	4	20.92	16.56	30	-13.44				
				15	0	20.81	16.45	30	-13.55				
				1	0	21.77	17.41	30	-12.59				
	20385	1753 5	16QAM	1	14	21.74	17.38	30	-12.62				
	20000	1753.5	100/11/1	8	4	20.68	16.32	30	-13.68				
				15	0	20.73	16.37	30	-13.63				

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Antenna gain (dBi)

· ·	9411 (421)	4.00											
	LTE Band 4_Uplink frequency band : 1710 to 1755 MHz												
BW (MHz)	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)				
		1712.5	ODOK	1	0	23.10	18.74	30	-11.26				
	19975			1	24	22.98	18.62	30	-11.38				
	19975	1712.3	QPSK	12	6	21.89	17.53	30	-12.47				
	5 20175 1732.5			25	0	21.93	17.57	30	-12.43				
			1	0	22.88	18.52	30	-11.48					
5		1732 5	QPSK	1	24	22.85	18.49	30	-11.51				
		1732.3	QP5K	12	6	21.74	17.38	30	-12.62				
				25	0	21.74	17.38	30	-12.62				
				1	0	22.91	18.55	30	-11.45				
	20375	1752.5	QPSK	1	24	22.75	18.39	30	-11.61				
				12	6	21.77	17.41	30	-12.59				
				25	0	21.72	17.36	30	-12.64				
				1	0	21.74	17.38	30	-12.62				
	19975	1712.5	16QAM	1	24	21.68	17.32	30	-12.68				
	10070	17 12.0	1000 1111	12	6	21.01	16.65	30	-13.35				
				25	0	21.12	16.76	30	-13.24				
				1	0	21.77	17.41	30	-12.59				
5	20175	1732.5	16QAM	1	24	21.69	17.33	30	-12.67				
		1702.0	100,	12	6	20.82	16.46	30	-13.54				
				25	0	20.73	16.37	30	-13.63				
				1	0	21.73	17.37	30	-12.63				
	20375	1752.5	16QAM	1	24	21.64	17.28	30	-12.72				
				12	6	20.89	16.53	30	-13.47				
				25	0	20.78	16.42	30	-13.58				

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Antenna gain (dBi)

,	gaiii (abi)	4.00											
	LTE Band 4_Uplink frequency band : 1710 to 1755 MHz												
BW (MHz)	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)				
		1715	QPSK	1	0	23.13	18.77	30	-11.23				
	20000			1	49	23.05	18.69	30	-11.31				
	20000	1715	QP5K	25	12	22.01	17.65	30	-12.35				
				50	0	21.95	17.59	30	-12.41				
	10 20175 1732.5		1	0	23.03	18.67	30	-11.33					
10		1732 5	QPSK	1	49	22.84	18.48	30	-11.52				
10		1732.3	QPSK	25	12	21.75	17.39	30	-12.61				
				50	0	21.63	17.27	30	-12.73				
			QPSK	1	0	23.11	18.75	30	-11.25				
	20350	1750		1	49	22.78	18.42	30	-11.58				
				25	12	21.94	17.58	30	-12.42				
				50	0	21.87	17.51	30	-12.49				
				1	0	21.78	17.42	30	-12.58				
	20000	1715	16QAM	1	49	21.64	17.28	30	-12.72				
	20000	1710	100/11/1	25	12	21.08	16.72	30	-13.28				
				50	0	21.11	16.75	30	-13.25				
				1	0	21.79	17.43	30	-12.57				
10	20175	1732.5	16QAM	1	49	21.75	17.39	30	-12.61				
10	20170	1702.0	1000/1111	25	12	20.97	16.61	30	-13.39				
				50	0	20.81	16.45	30	-13.55				
				1	0	21.78	17.42	30	-12.58				
	20350	1750	16QAM	1	49	21.65	17.29	30	-12.71				
		1750	1000,1111	25	12	21.02	16.66	30	-13.34				
				50	0	21.05	16.69	30	-13.31				

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Antenna gain (dBi)

-4.36

	. ,											
LTE Band 4_Uplink frequency band : 1710 to 1755 MHz												
BW (MHz)	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)			
		4747 F	ODOK	1	0	23.24	18.88	30	-11.12			
	00005			1	74	23.15	18.79	30	-11.21			
	20025	1717.5	QPSK	36	18	21.99	17.63	30	-12.37			
				75	0	22.03	17.67	30	-12.33			
	15 20175 1732.5			1	0	23.05	18.69	30	-11.31			
15		1732 5	QPSK	1	74	22.90	18.54	30	-11.46			
13		1/32.5	QPSK	36	18	21.70	17.34	30	-12.66			
				75	0	21.66	17.30	30	-12.7			
	20325	1747.5	QPSK	1	0	23.04	18.68	30	-11.32			
				1	74	22.74	18.38	30	-11.62			
				36	18	22.07	17.71	30	-12.29			
				75	0	21.94	17.58	30	-12.42			
			16QAM	1	0	21.75	17.39	30	-12.61			
	20025	1717.5		1	74	21.67	17.31	30	-12.69			
	20020	17 17.0	1000 1111	36	18	21.09	16.73	30	-13.27			
				75	0	21.19	16.83	30	-13.17			
				1	0	21.81	17.45	30	-12.55			
15	20175	1732.5	16QAM	1	74	21.75	17.39	30	-12.61			
				36	18	20.59	16.23	30	-13.77			
				75	0	20.75	16.39	30	-13.61			
				1	0	21.82	17.46	30	-12.54			
	20325	1747.5	16QAM	1	74	21.76	17.40	30	-12.6			
				36	18	21.16	16.80	30	-13.2			
				75	0	20.93	16.57	30	-13.43			

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Antenna gain (dBi)	-4.36
Antenna gain (abi)	-4.50

LTE Band / Unlink frequency band : 1710 to 1755 MHz													
	LTE Band 4_Uplink frequency band : 1710 to 1755 MHz												
BW (MHz)	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)				
				1	0	22.99	18.63	30	-11.37				
	00050	1700	QPSK	1	99	22.81	18.45	30	-11.55				
	20050	1720	QP5K	50	25	22.03	17.67	30	-12.33				
				100	0	22.00	17.64	30	-12.36				
				1	0	23.00	18.64	30	-11.36				
20 20175	1732.5	QPSK	1	99	22.73	18.37	30	-11.63					
	20175	1732.3	QION	50	25	21.74	17.38	30	-12.62				
				100	0	21.78	17.42	30	-12.58				
				1	0	22.98	18.62	30	-11.38				
	20300	1745	QPSK	1	99	22.80	18.44	30	-11.56				
				50	25	22.04	17.68	30	-12.32				
				100	0	21.90	17.54	30	-12.46				
				1	0	21.70	17.34	30	-12.66				
	20050	1720	16QAM	1	99	21.78	17.42	30	-12.58				
	20000	1720	IOQAIVI	50	25	21.20	16.84	30	-13.16				
				100	0	21.12	16.76	30	-13.24				
				1	0	21.68	17.32	30	-12.68				
20	20175	1732.5	16QAM	1	99	21.72	17.36	30	-12.64				
20	20170	1702.0	IOQAWI	50	25	20.66	16.30	30	-13.7				
				100	0	20.64	16.28	30	-13.72				
				1	0	21.65	17.29	30	-12.71				
	20300	1745	16QAM	1	99	21.70	17.34	30	-12.66				
	20000	1170	IOQAIVI	50	25	21.11	16.75	30	-13.25				
				100	0	20.85	16.49	30	-13.51				

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Antenna gain (dBi)

Antenna gain (ubi)		-9.30											
	LTE Band 13_Uplink frequency band : 777 to 787 MHz												
BW (MHz)	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	ERP Average (dBm)	ERP Limit (dBm)	Margin (dB)			
				1	0	23.78	14.43	12.28	34.77	-22.49			
	23205	779.5	QPSK	1	24	23.70	14.35	12.20	34.77	-22.57			
	20200	113.5	QLOIX	12	6	22.62	13.27	11.12	34.77	-23.65			
				25	0	22.71	13.36	11.21	34.77	-23.56			
			1	0	23.66	14.31	12.16	34.77	-22.61				
5	23230	782	QPSK	1	24	23.69	14.34	12.19	34.77	-22.58			
	20200	102	QFSN	12	6	22.60	13.25	11.10	34.77	-23.67			
				25	0	22.61	13.26	11.11	34.77	-23.66			
	23255	784.5	QPSK	1	0	23.74	14.39	12.24	34.77	-22.53			
				1	24	23.75	14.40	12.25	34.77	-22.52			
				12	6	22.74	13.39	11.24	34.77	-23.53			
				25	0	22.75	13.40	11.25	34.77	-23.52			
				1	0	22.71	13.36	11.21	34.77	-23.56			
	23205	779.5	16QAM	1	24	22.62	13.27	11.12	34.77	-23.65			
			,	12	6	21.64	12.29	10.14	34.77	-24.63			
				25	0	21.70	12.35	10.20	34.77	-24.57			
				1	0	22.71	13.36	11.21	34.77	-23.56			
5	23230	782	16QAM	1	24	22.77	13.42	11.27	34.77	-23.50			
		-		12	6	21.67	12.32	10.17	34.77	-24.60			
				25	0	21.68	12.33	10.18	34.77	-24.59			
				1	0	22.80	13.45	11.30	34.77	-23.47			
	23255	784.5	16QAM	1	24	22.78	13.43	11.28	34.77	-23.49			
				12	6	21.73	12.38	10.23	34.77	-24.54			
				25	0	21.66	12.31	10.16	34.77	-24.61			

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Antenna gain (dBi)

,	9 ()	0.00								
			LTE Band	13_Upli	nk frequ	uency band :	777 to 787 MH	łz		
BW (MHz)	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	ERP Average (dBm)	ERP Limit (dBm)	Margin (dB)
				1	0	23.93	14.58	12.43	34.77	-22.34
10	23230	782	QPSK	1	49	23.76	14.41	12.26	34.77	-22.51
	10 23230 762	702	QI OIX	25	12	22.61	13.26	11.11	34.77	-23.66
				50	0	22.71	13.36	11.21	34.77	-23.56
				1	0	22.72	13.37	11.22	34.77	-23.55
10	23230	23230 782	16QAM	1	49	22.73	13.38	11.23	34.77	-23.54
	20200	102	2	25	12	21.60	12.25	10.10	34.77	-24.67
				50	0	21.66	12.31	10.16	34.77	-24.61

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2 OCCUPIED BANDWIDTH MEASUREMENT

LTE BAND 4 Channel bandwidth: 1.4MHz										
Freq.	СН	99% BV	V (MHz)	26 dB BW (MHz)						
(MHz)	CIT	QPSK	16QAM	QPSK	16QAM					
1710.7	19957	1.0887	1.0897	1.278	1.311					
1732.5	20175	1.0899	1.0893	1.278	1.310					
1754.3	20393	1.0889	1.0914	1.282	1.310					

LTE BAND 4 Channel bandwidth: 5MHz										
Freq.	СН	99% BV	V (MHz)	26 dB BW (MHz)						
(MHz)	QPSK 16QAM QPSK 16QAM									
1712.5	19975	4.4814	4.4829	5.007	4.964					
1732.5	20175	4.4812	4.4827	5.014	5.011					
1752.5	20375	4.4809	4.4812	5.008	4.992					

LTE BAND 4 Channel bandwidth: 15MHz					
Freq.	СН	99% BW (MHz)		26 dB BW (MHz)	
(MHz)		QPSK	16QAM	QPSK	16QAM
1717.5	20025	13.4280	13.4010	14.570	14.670
1732.5	20175	13.4360	13.4140	14.610	14.660
1747.5	20325	13.4230	13.3940	14.590	14.610
LTE BAND 13 Channel bandwidth: 5MHz					
	,				
Freq.		99% BV			W (MHz)
Freq. (MHz)	CH				W (MHz) 16QAM
		99% BV	V (MHz)	26 dB B	, ,
(MHz)	СН	99% BV QPSK	V (MHz) 16QAM	26 dB B	16QAM

LTE BAND 4 Channel bandwidth: 3MHz						
Freq.	СН	99% BW (MHz)		26 dB BW (MHz)		
(MHz)		QPSK	16QAM	QPSK	16QAM	
1711.5	19965	2.6835	2.6885	2.957	2.970	
1732.5	20175	2.6835	2.6893	2.966	2.966	
1753.5	20385	2.6872	2.6920	2.956	2.958	

LTE BAND 4 Channel bandwidth: 10MHz						
Freq.	СН	99% BW (MHz)		26 dB BW (MHz)		
(MHz)		QPSK	16QAM	QPSK	16QAM	
1715.0	20000	8.9550	8.9278	9.815	9.755	
1732.5	20175	8.9512	8.9368	9.424	9.772	
1750.0	20350	8.9718	8.9247	9.797	9.826	

LTE BAND 4 Channel bandwidth: 20MHz						
Freq.	СН	99% BW (MHz)		26 dB BW (MHz)		
(MHz)		QPSK	16QAM	QPSK	16QAM	
1720.0	20050	17.8560	17.8790	19.360	19.370	
1732.5	20175	17.8560	17.8690	19.340	19.380	
1745.0	20300	17.8030	17.8280	19.140	19.290	
LTE BAND 13 Channel bandwidth: 10MHz						
Freq.	СН	99% BW (MHz)		26 dB BW (MHz)		
(MHz)		QPSK	16QAM	QPSK	16QAM	
782.0	23230	8.9595	8.9336	9.718	9.725	

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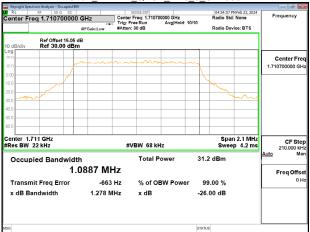
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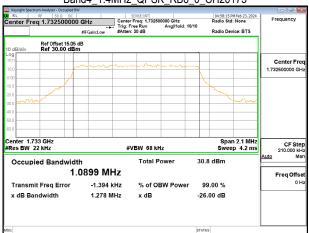


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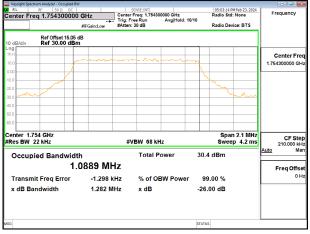
Band4 1.4MHz QPSK RB6 0 CH19957



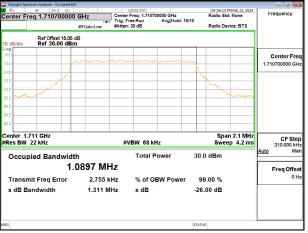
Band4 1.4MHz QPSK RB6 0 CH20175



Band4_1.4MHz_QPSK_RB6_0_CH20393



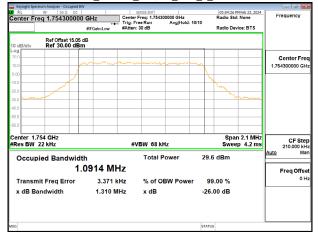
Band4 1.4MHz 16QAM RB6 0 CH19957



Band4_1.4MHz_16QAM_RB6_0_CH20175



Band4_1.4MHz_16QAM_RB6_0_CH20393



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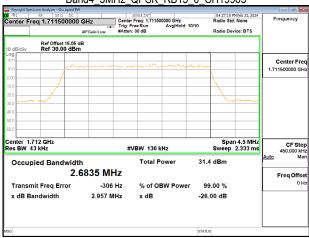
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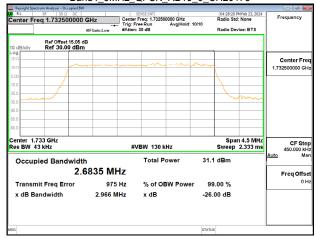


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Band4 3MHz QPSK RB15 0 CH19965



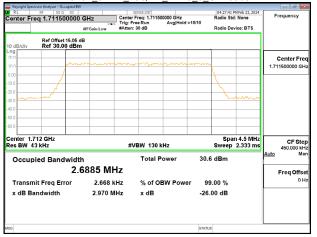




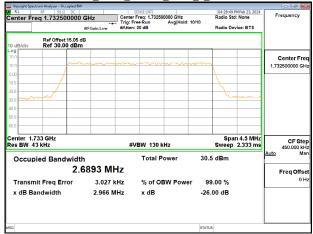
Band4 3MHz QPSK RB15 0 CH20385



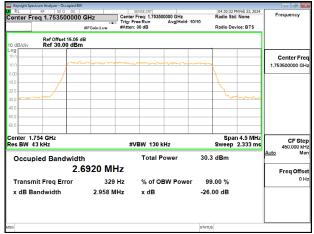
Band4 3MHz 16QAM RB15 0 CH19965



Band4 3MHz 16QAM RB15 0 CH20175



Band4_3MHz_16QAM_RB15_0_CH20385



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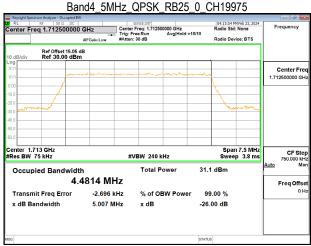
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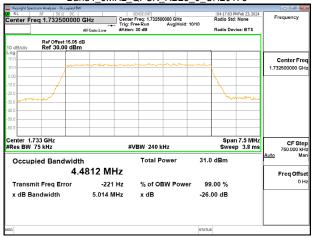


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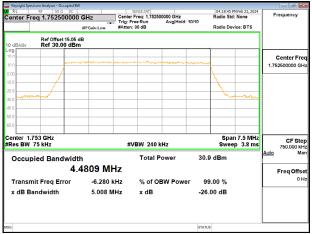
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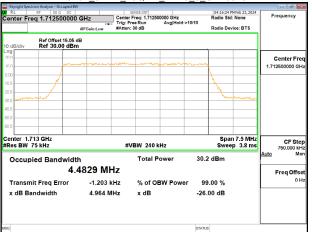




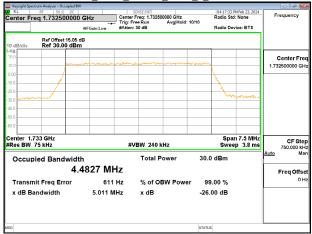
Band4_5MHz_QPSK_RB25_0_CH20375



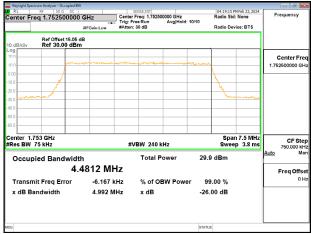
Band4 5MHz 16QAM RB25 0 CH19975



Band4 5MHz 16QAM RB25 0 CH20175



Band4_5MHz_16QAM_RB25_0_CH20375



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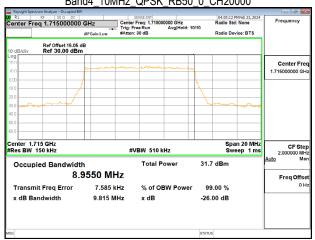
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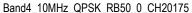


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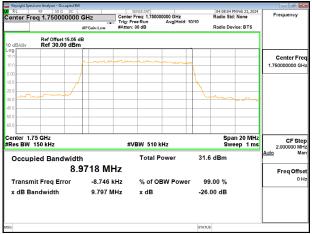
Band4 10MHz QPSK RB50 0 CH20000



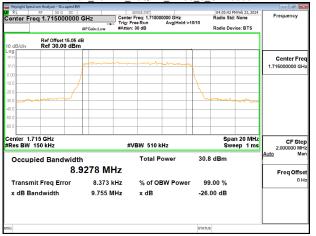




Band4_10MHz_QPSK_RB50_0_CH20350



Band4_10MHz_16QAM_RB50_0_CH20000



Band4 10MHz 16QAM RB50 0 CH20175



Band4 10MHz 16QAM RB50 0 CH20350



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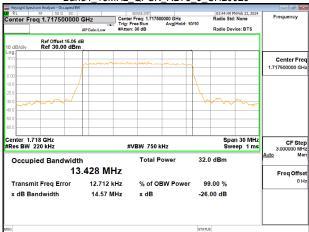
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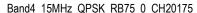


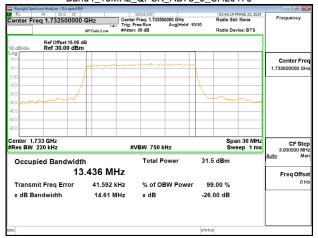
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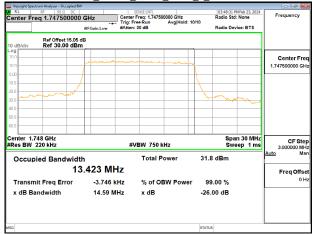
Band4 15MHz QPSK RB75 0 CH20025



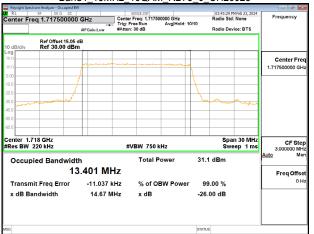




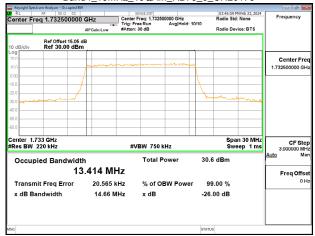
Band4 15MHz QPSK RB75 0 CH20325



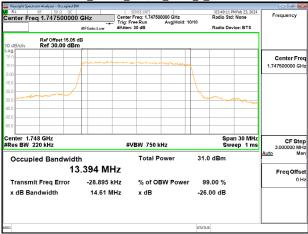
Band4 15MHz 16QAM RB75 0 CH20025



Band4 15MHz 16QAM RB75 0 CH20175



Band4 15MHz 16QAM RB75 0 CH20325



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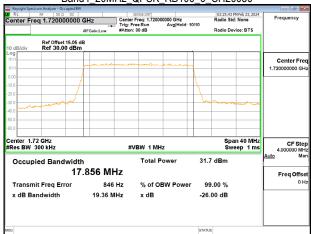
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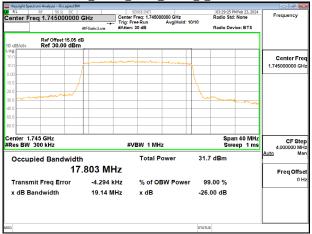
Band4 20MHz QPSK RB100 0 CH20050



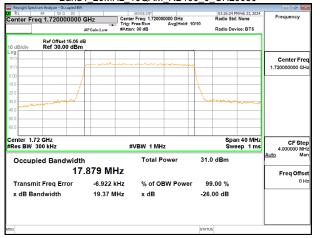




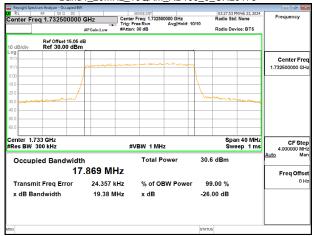
Band4 20MHz QPSK RB100 0 CH20300



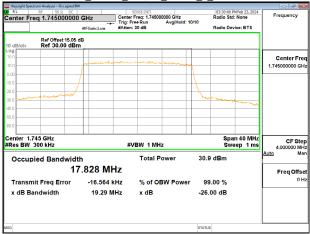
Band4_20MHz_16QAM_RB100_0_CH20050



Band4 20MHz 16QAM RB100 0 CH20175



Band4 20MHz 16QAM RB100 0 CH20300



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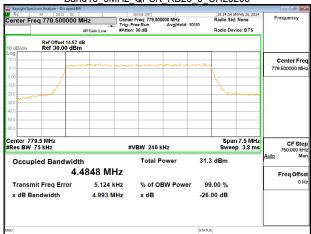
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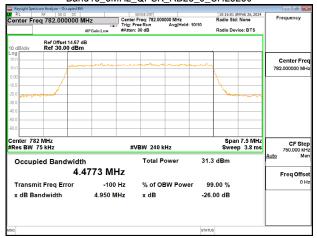
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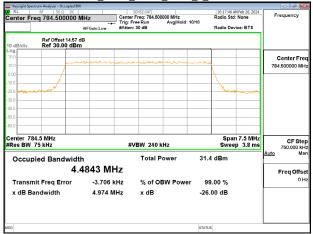
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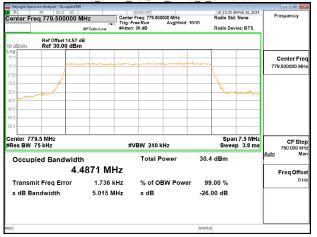




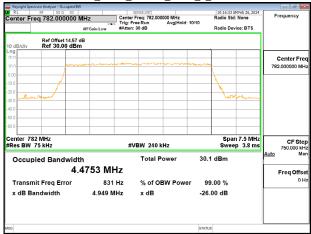
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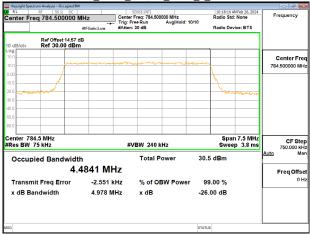
Band13 5MHz 16QAM RB25 0 CH23205



Band13 5MHz 16QAM RB25 0 CH23230



Band13 5MHz 16QAM RB25 0 CH23255



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Band13_10MHz_QPSK_RB50_0_CH23230







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3 OUT OF BAND EMISSION AT ANTENNA TERMINALS

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Band Edge Band4 1.4MHz QPSK RB1 5 CH20393



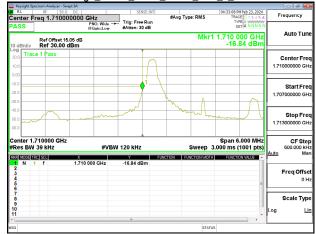
Band Edge_Band4_1.4MHz_QPSK_RB6_0_CH19957



Band Edge_Band4_1.4MHz_QPSK_RB6_0_CH20393



Band Edge Band4 3MHz QPSK RB1 0 CH19965



Band Edge_Band4_3MHz_QPSK_RB1_14_CH20385



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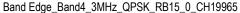
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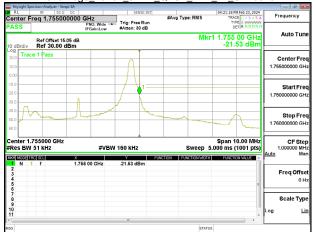
Band Edge Band4 3MHz QPSK RB15 0 CH20385



Band Edge Band4 5MHz QPSK RB1 0 CH19975



Band Edge Band4 5MHz QPSK RB1 24 CH20375



Band Edge Band4 5MHz QPSK RB25 0 CH19975



Band Edge Band4 5MHz QPSK RB25 0 CH20375



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Band Edge Band4 10MHz QPSK RB1 49 CH20350



Band Edge Band4 10MHz QPSK RB50 0 CH20000



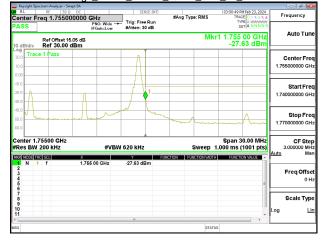
Band Edge Band4 10MHz QPSK RB50 0 CH20350



Band Edge Band4 15MHz QPSK RB1 0 CH20025



Band Edge Band4 15MHz QPSK RB1 74 CH20325



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