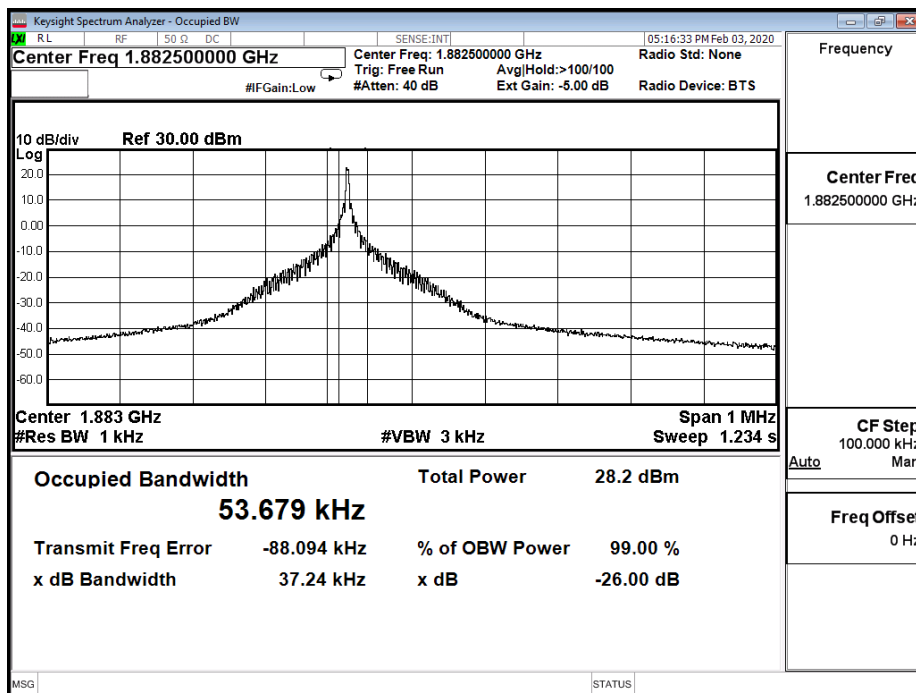
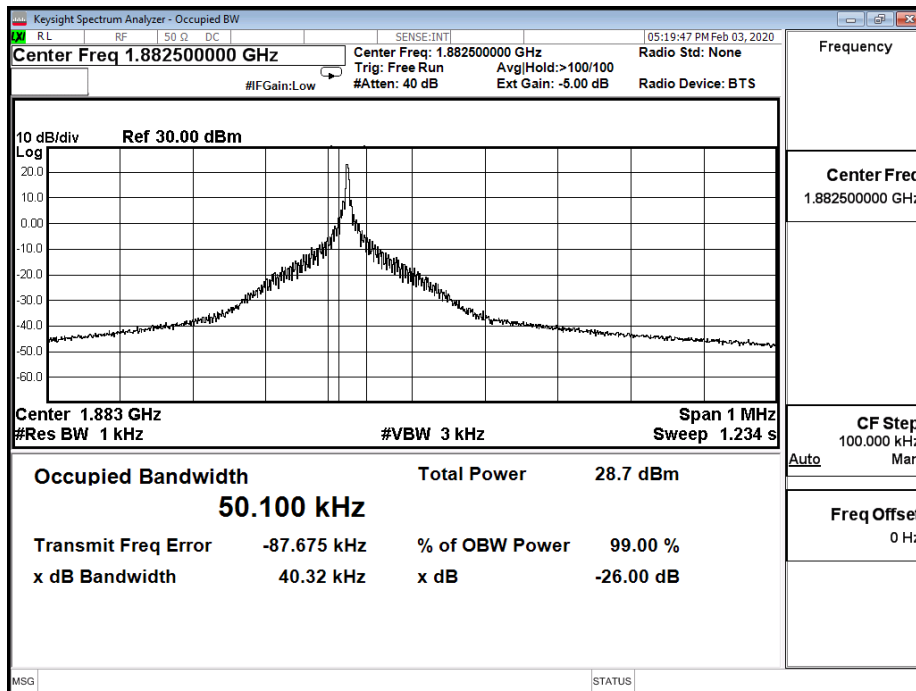


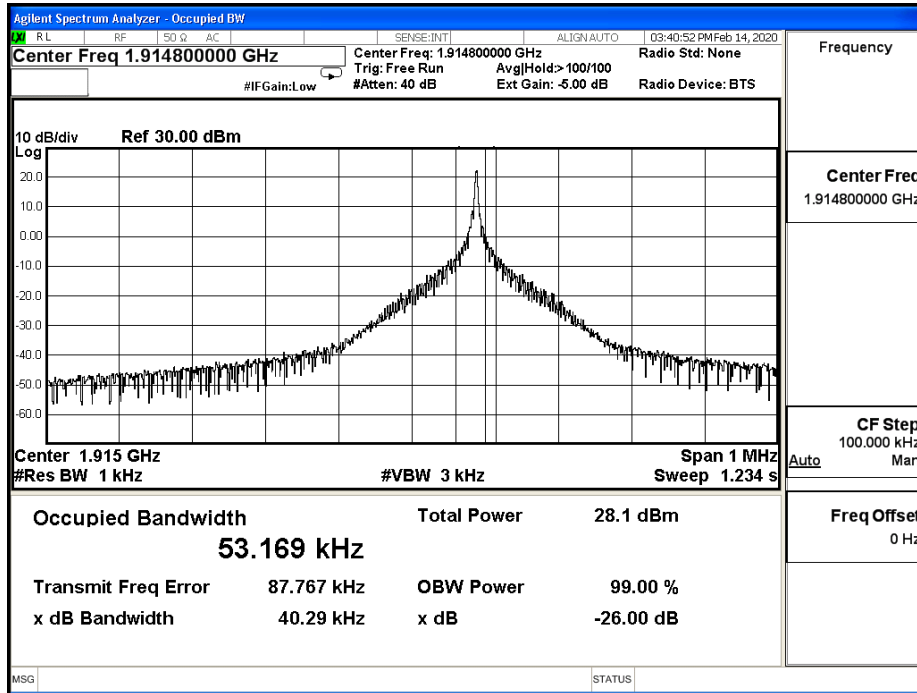
B25\_3.75K\_CH26365\_BPSK\_1RB0



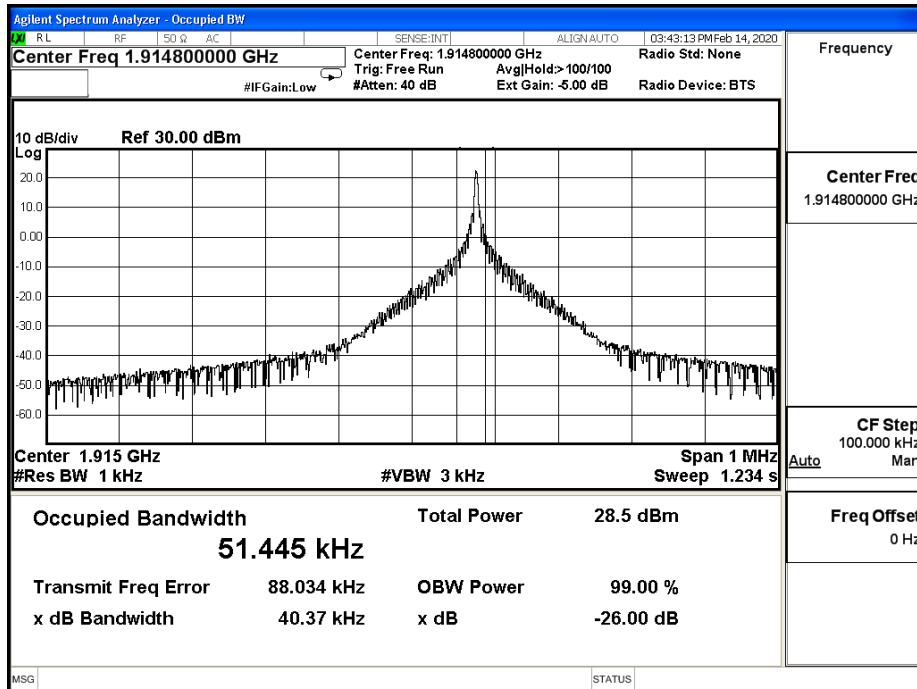
B25\_3.75K\_CH26365\_QPSK\_1RB0



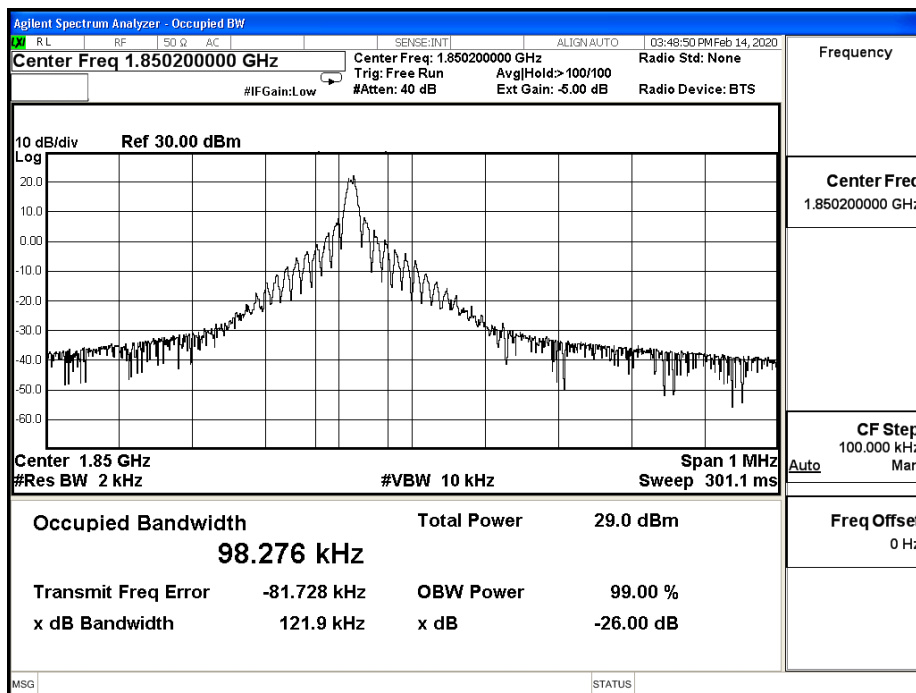
B25\_3.75K\_CH26688\_BPSK\_1RB47



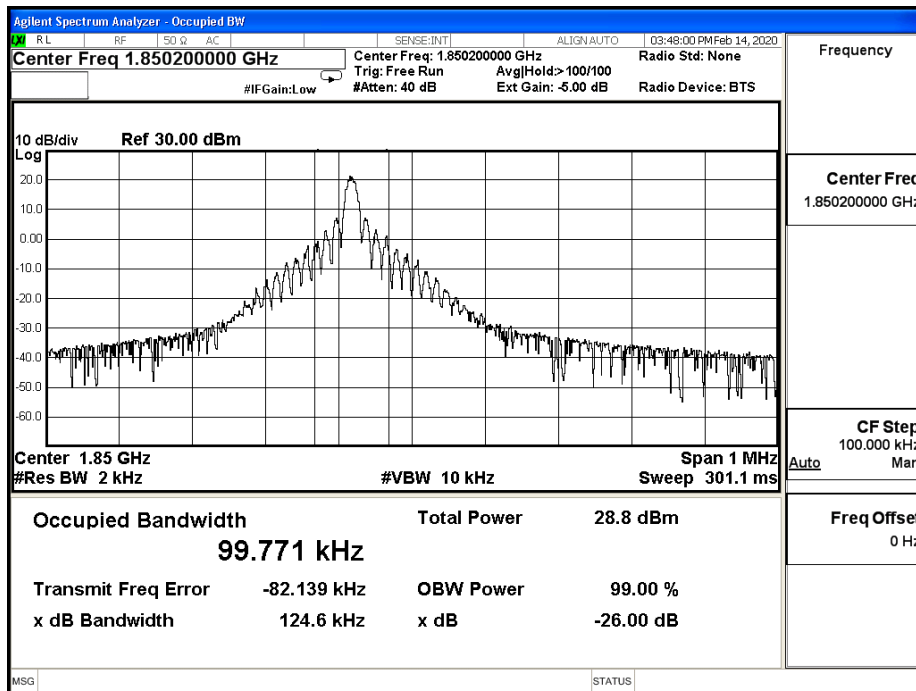
B25\_3.75K\_CH26688\_QPSK\_1RB47



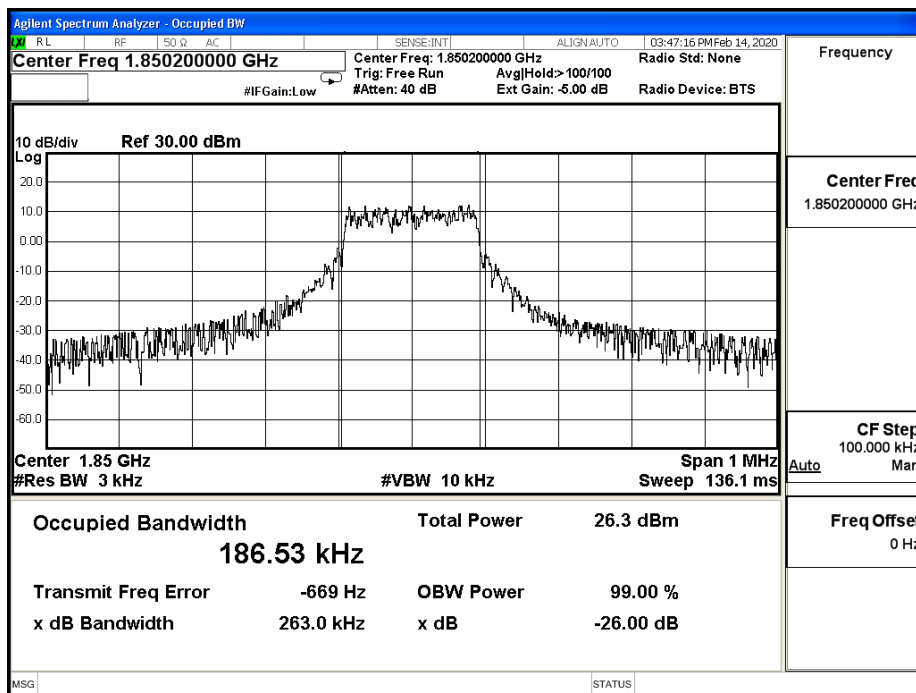
B25\_15K\_CH26042\_BPSK\_1RB0



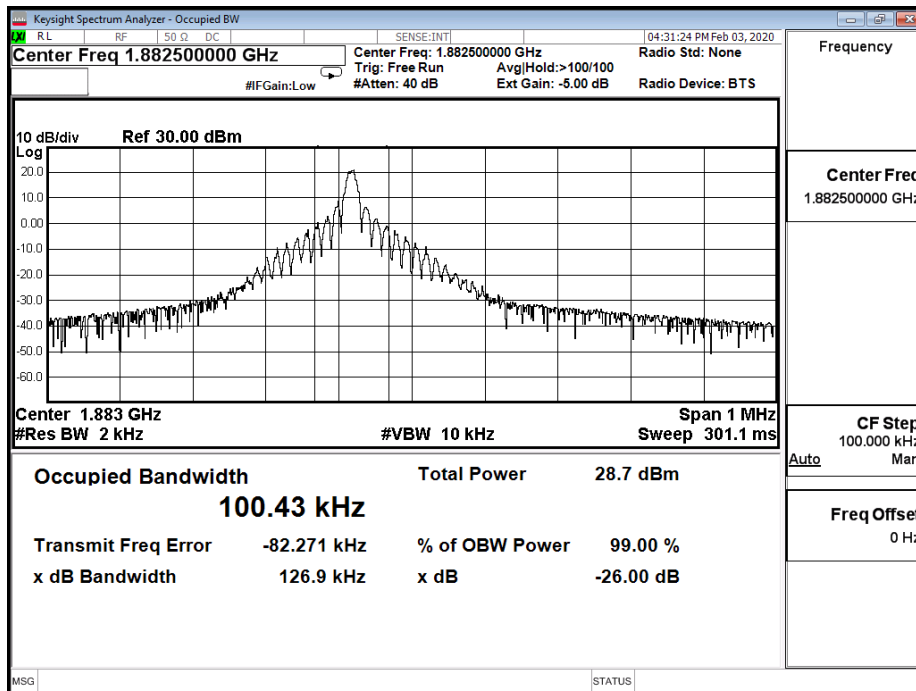
B25\_15K\_CH26042\_QPSK\_1RB0



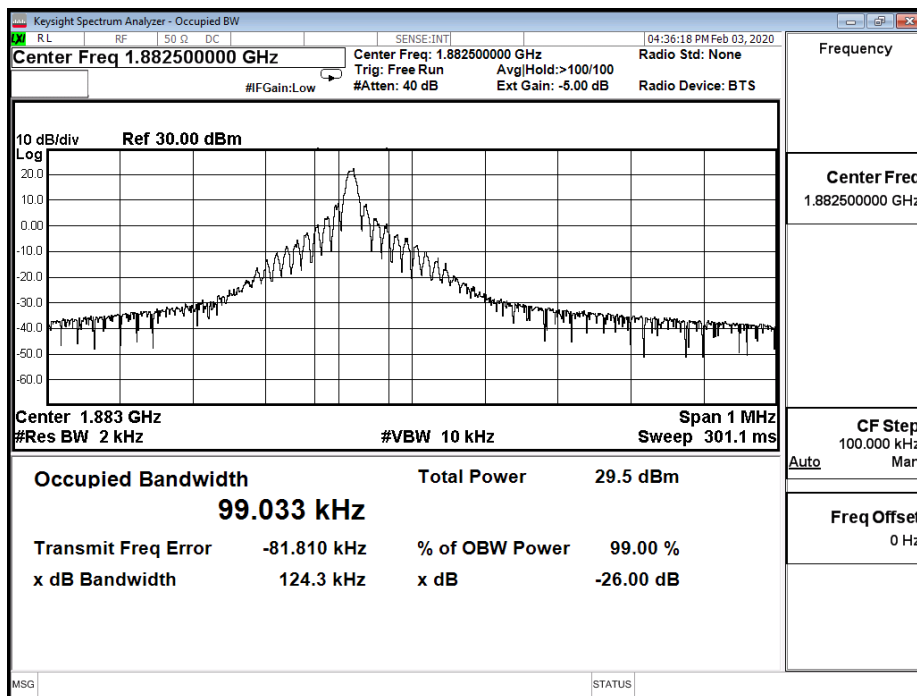
B25\_15K\_CH26042\_QPSK\_12RB0



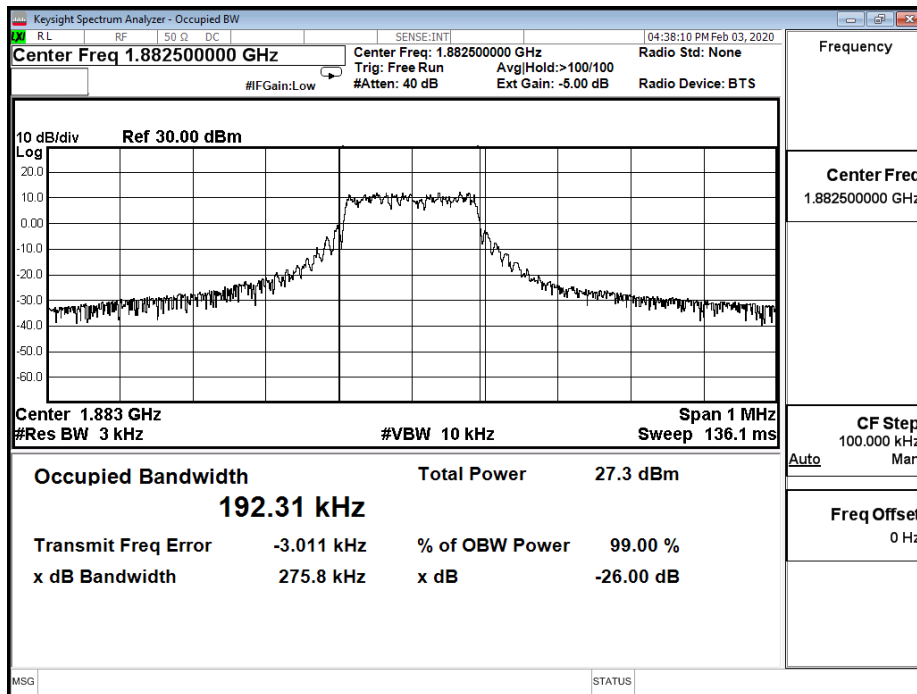
B25\_15K\_CH26365\_BPSK\_1RB0



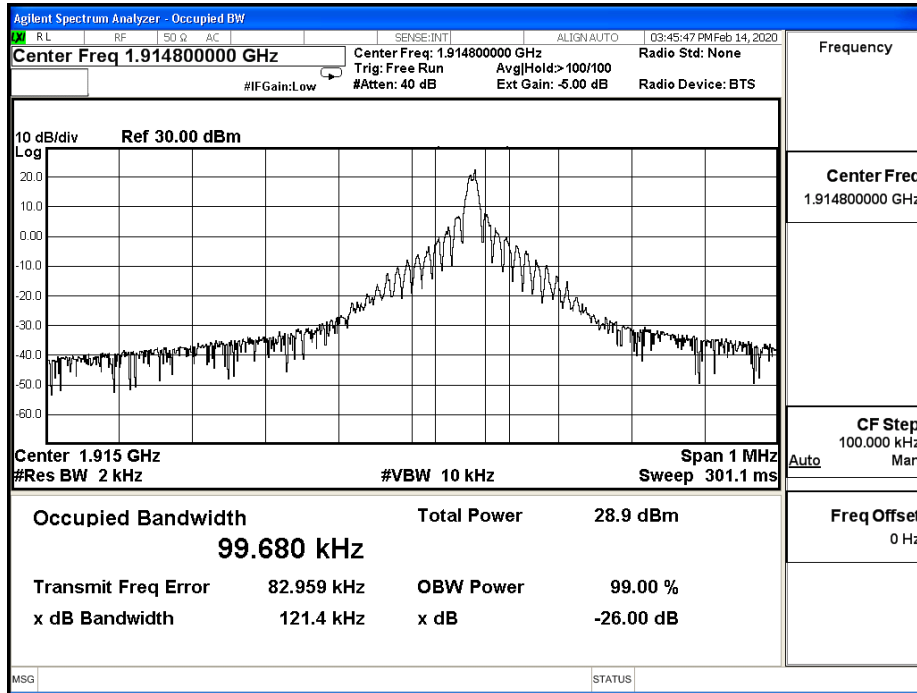
B25\_15K\_CH26365\_QPSK\_1RB0



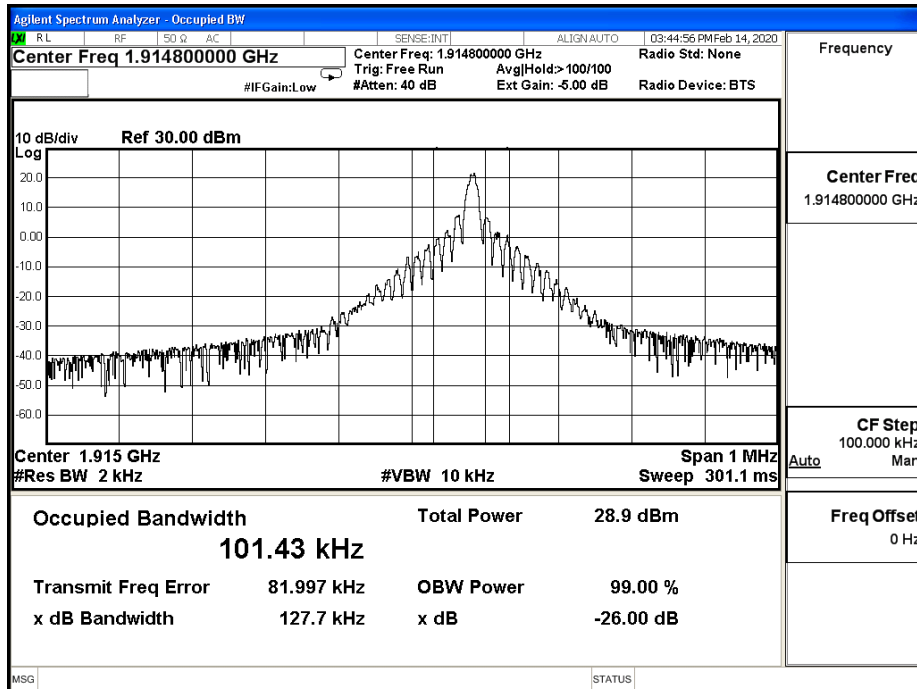
B25\_15K\_CH26365\_QPSK\_12RB0



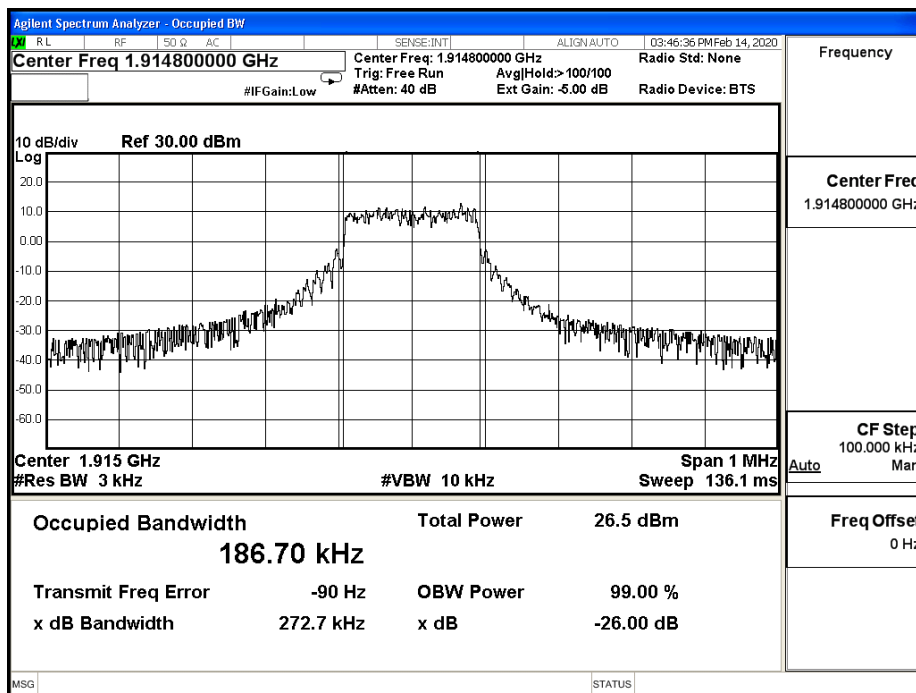
B25\_15K\_CH26688\_BPSK\_1RB11



B25\_15K\_CH26688\_QPSK\_1RB11



B25\_15K\_CH26688\_QPSK\_12RB0

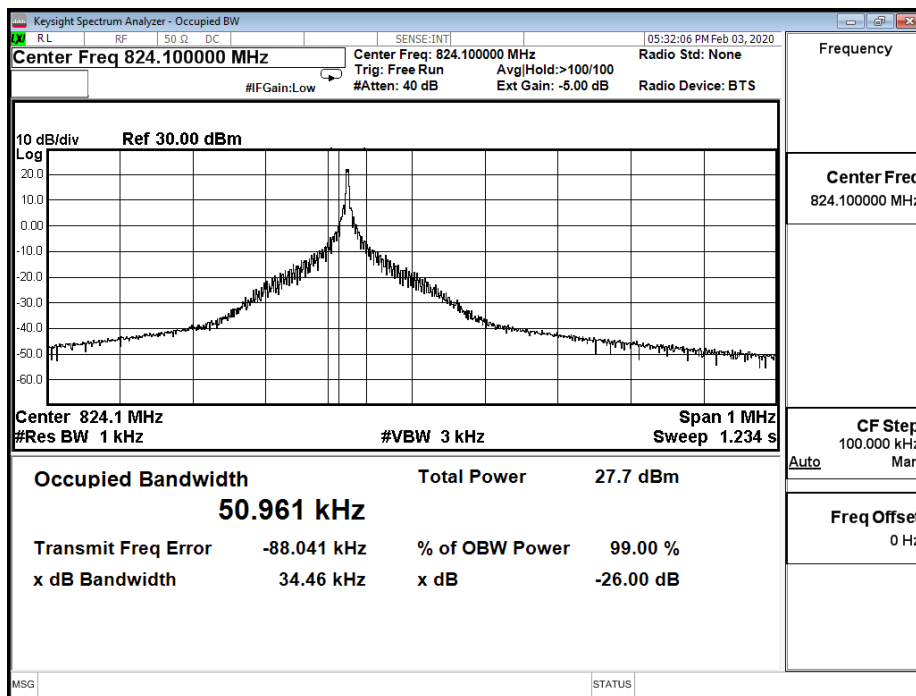


Product	Module		
Test Item	Occupied Bandwidth (Part 22)		
Test Mode	Mode 7 : LTE NB-IoT_Band 26		
Date of Test	2020/02/03	Test Site	SR12-H
Temperature (°C)	19.0	Humidity (%RH)	59.0

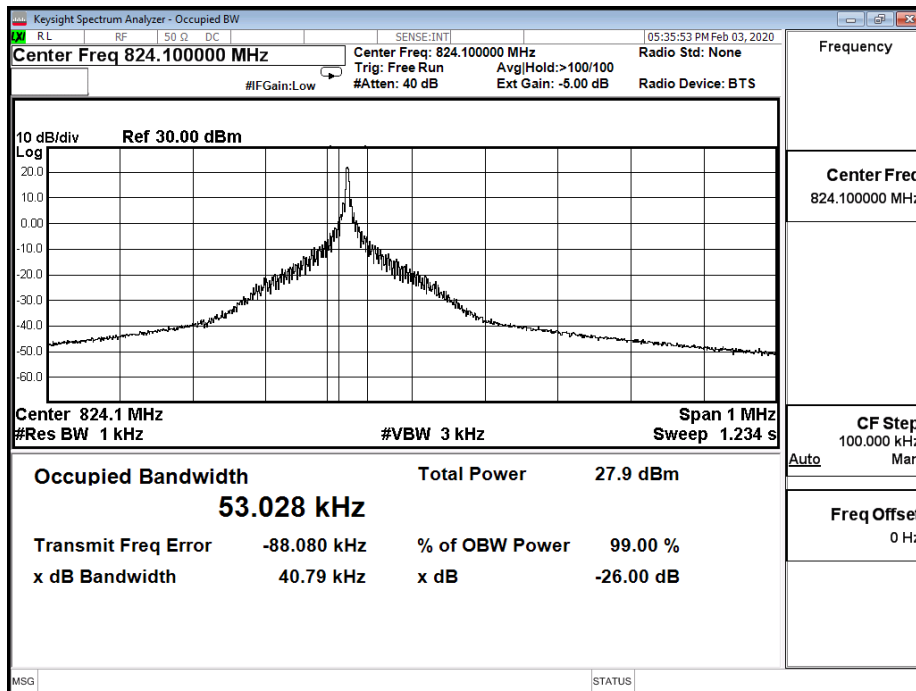
Channel	Freq. (MHz)	Modulation	BW (kHz)	RB No.	RB offset	Measure Level (kHz)		Limit (MHz)
						26dB BW	99% BW	
26792	824.2	BPSK	3.75	1	0	34.460	50.961	NA
			15	1	0	124.800	100.720	NA
		QPSK	3.75	1	0	40.790	53.028	NA
			15	1	0	125.900	100.560	NA
				12	0	276.400	191.150	NA
26915	836.5	BPSK	3.75	1	0	34.140	50.347	NA
			15	1	0	134.500	99.994	NA
		QPSK	3.75	1	0	40.400	52.891	NA
			15	1	0	151.400	101.890	NA
				12	0	266.000	192.530	NA
27038	848.8	BPSK	3.75	1	47	27.550	33.709	NA
			15	1	11	123.800	96.029	NA
		QPSK	3.75	1	47	28.370	32.643	NA
			15	1	11	127.000	96.301	NA
				12	0	262.600	187.640	NA



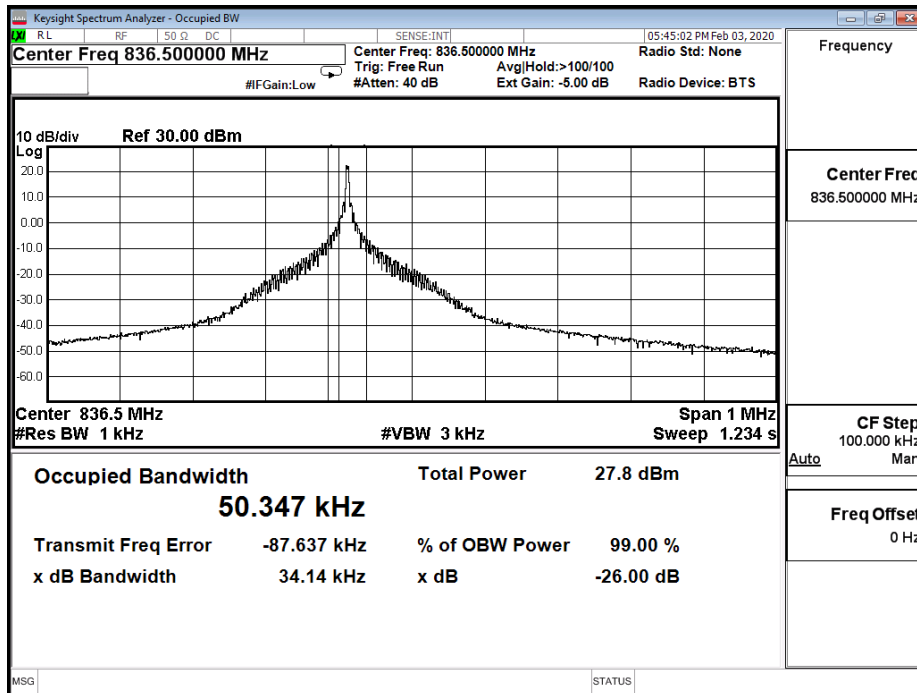
B26\_3.75K\_CH26791\_BPSK\_1RB0



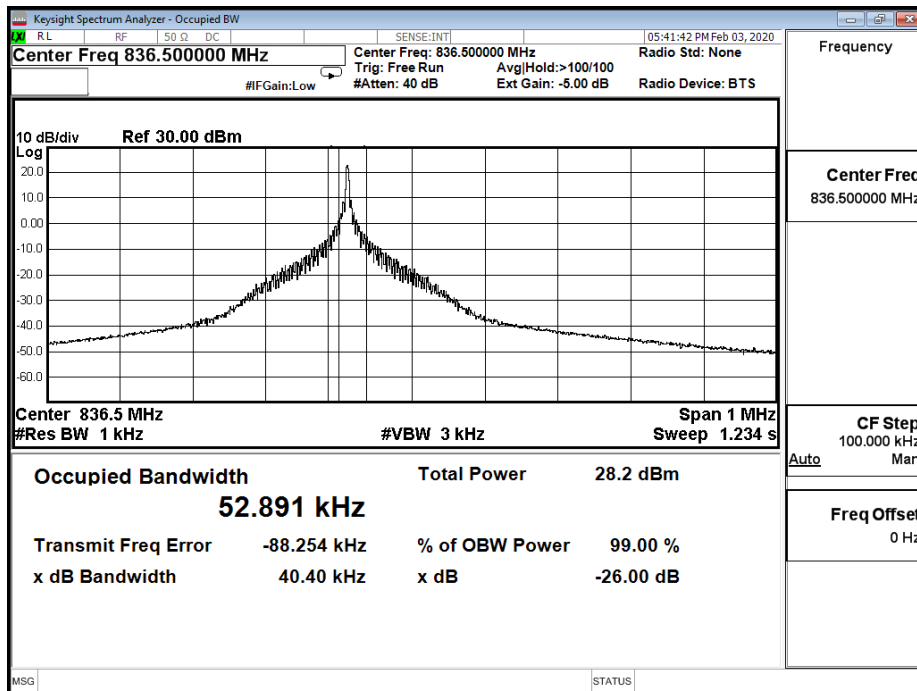
B26\_3.75K\_CH26791\_QPSK\_1RB0



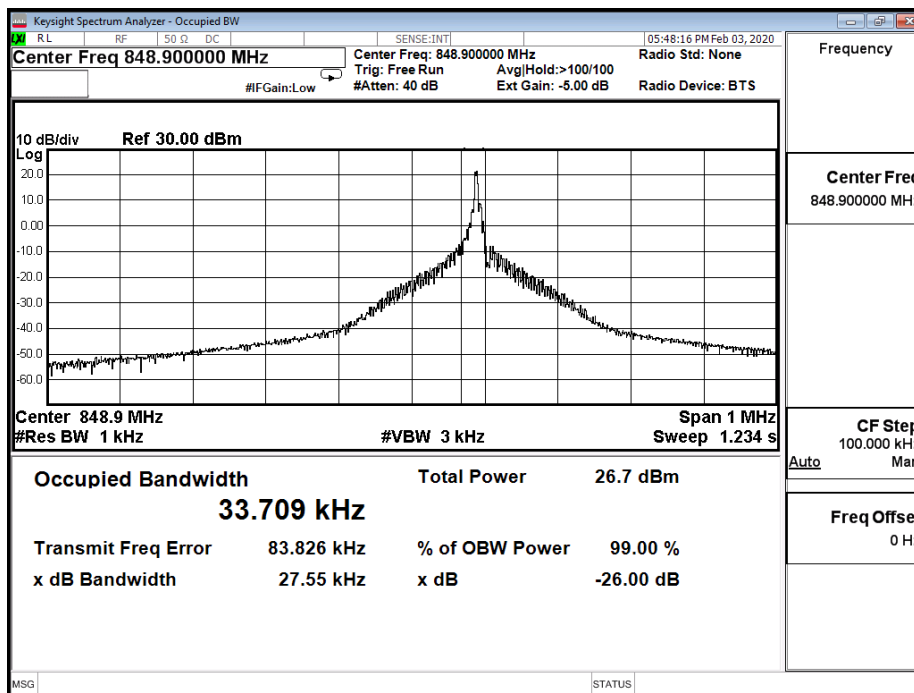
B26\_3.75K\_CH26915\_BPSK\_1RB0



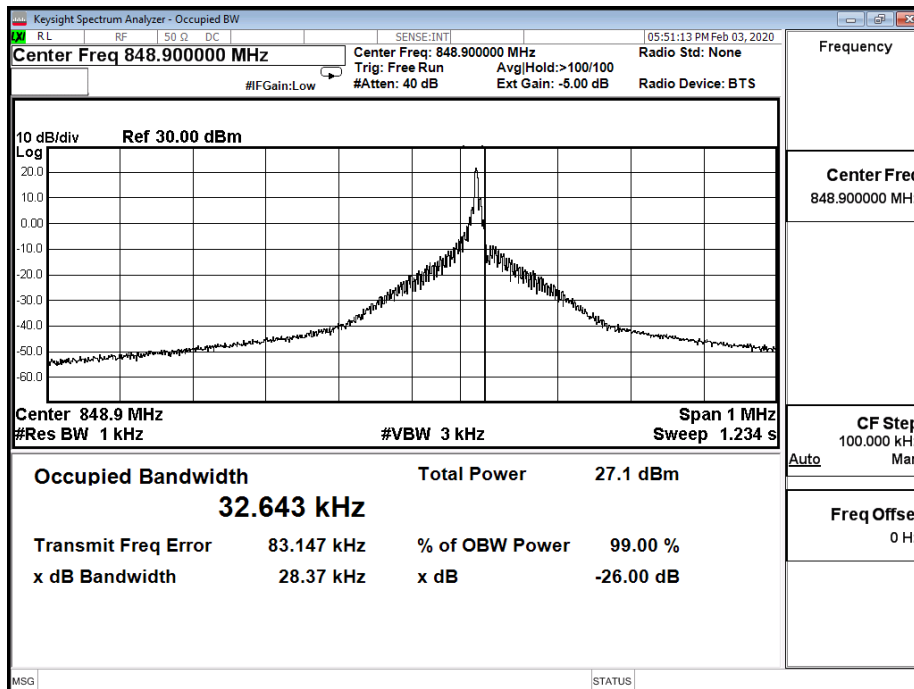
B26\_3.75K\_CH26915\_QPSK\_1RB0



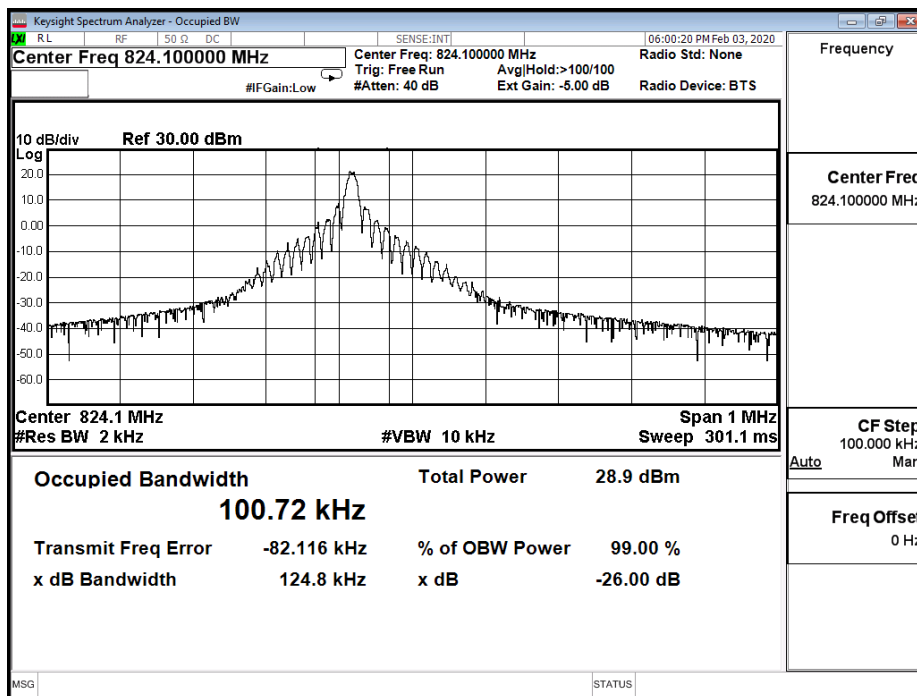
B26\_3.75K\_CH27039\_BPSK\_1RB47



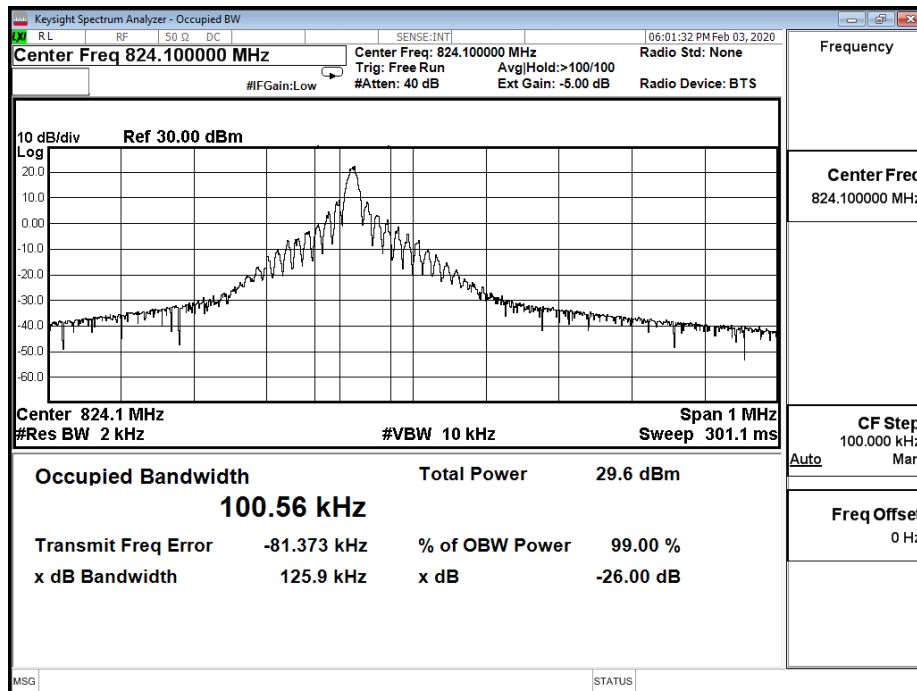
B26\_3.75K\_CH27039\_QPSK\_1RB47



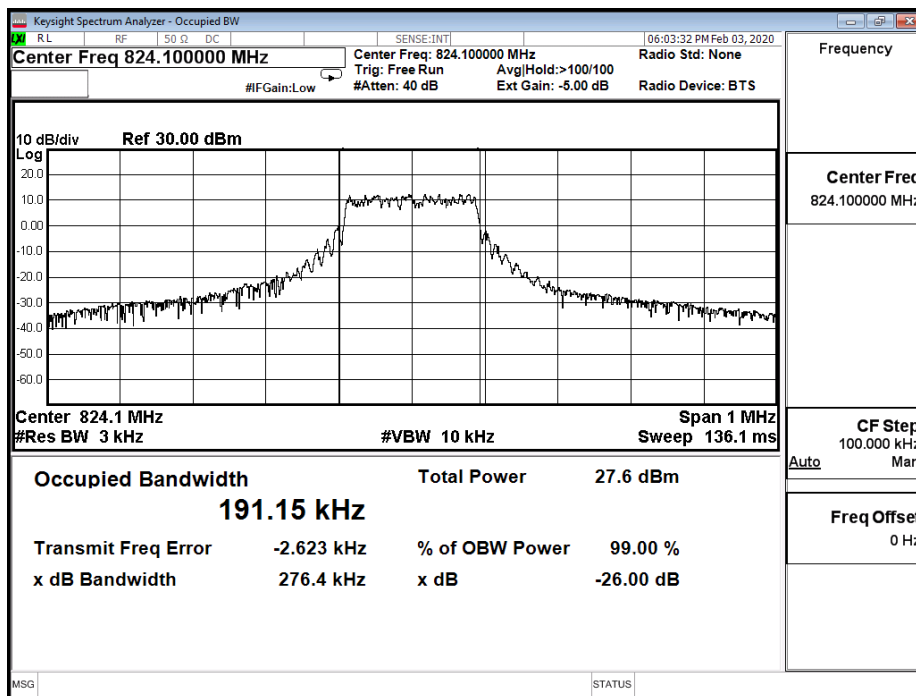
B26\_15K\_CH26791\_BPSK\_1RB0



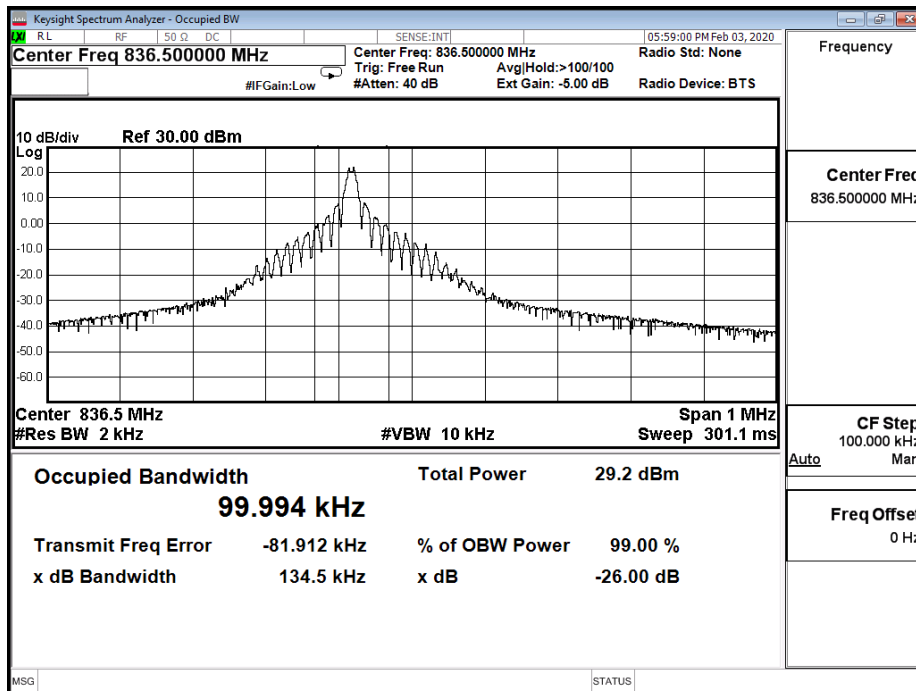
B26\_15K\_CH26791\_QPSK\_1RB0



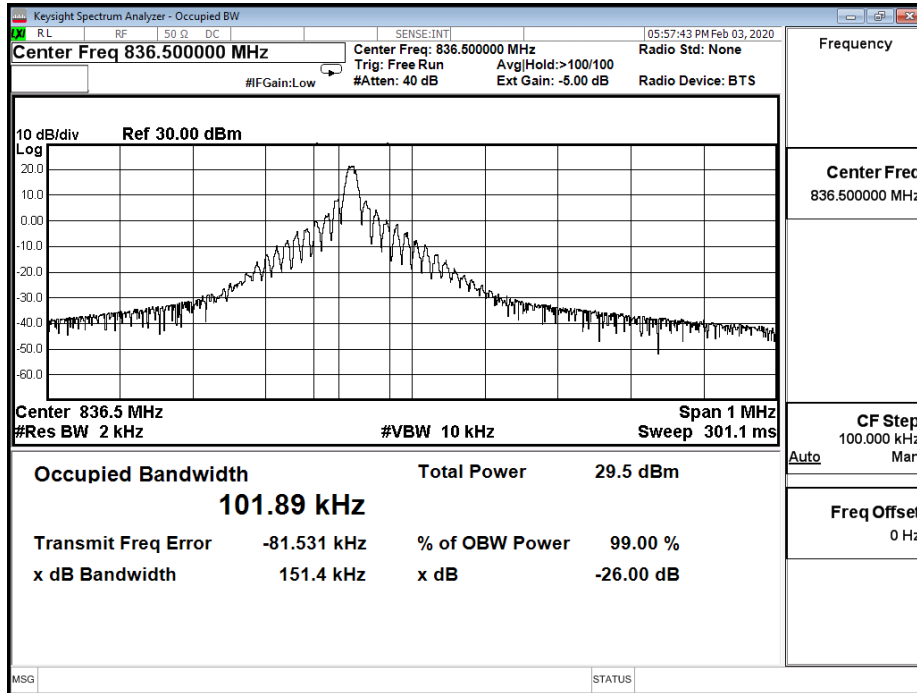
B26\_15K\_CH26791\_QPSK\_12RB0



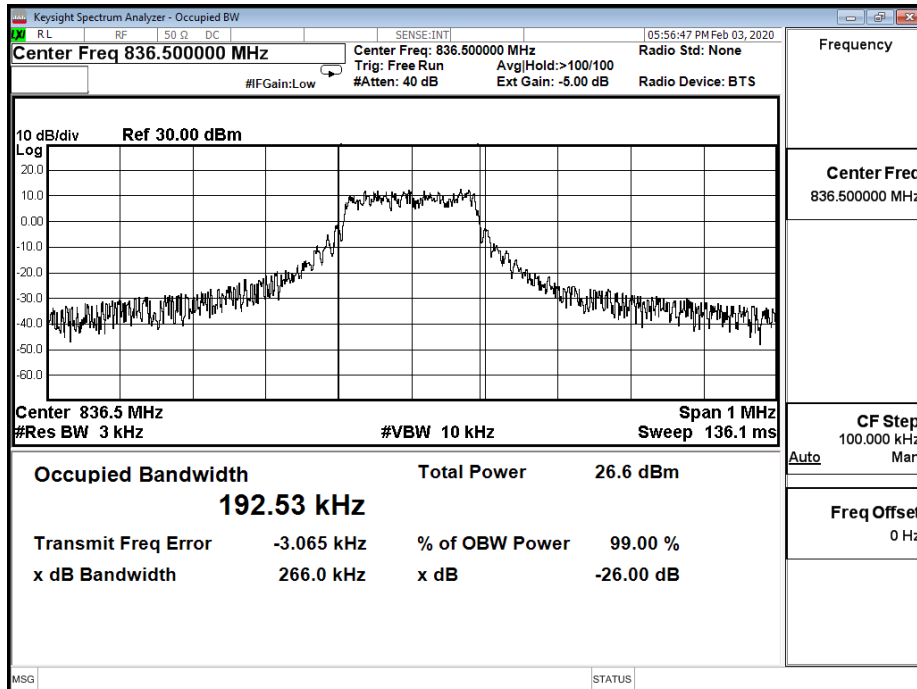
B26\_15K\_CH26915\_BPSK\_1RB0



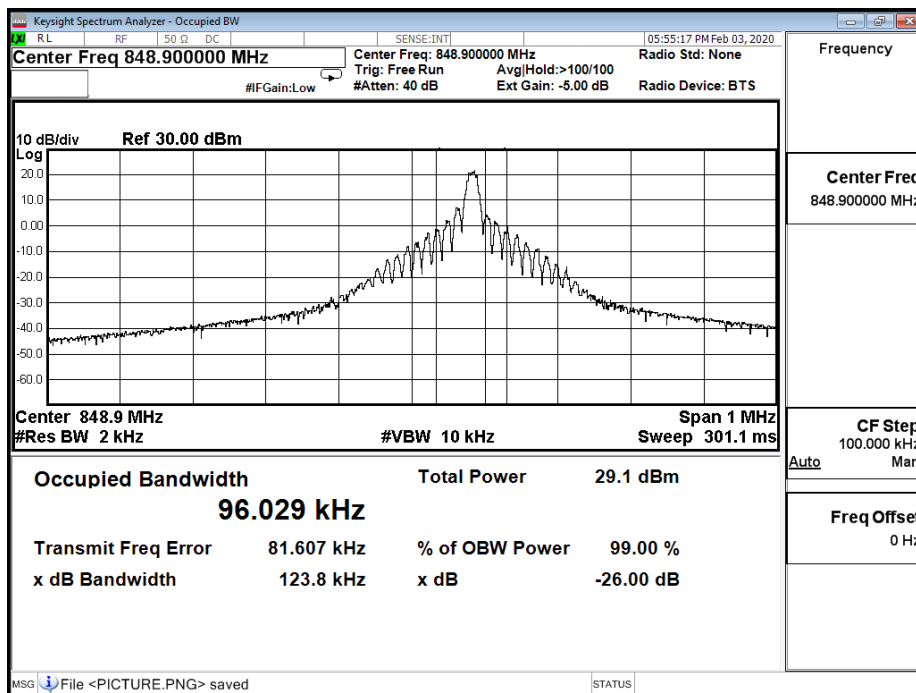
B26\_15K\_CH26915\_QPSK\_1RB0



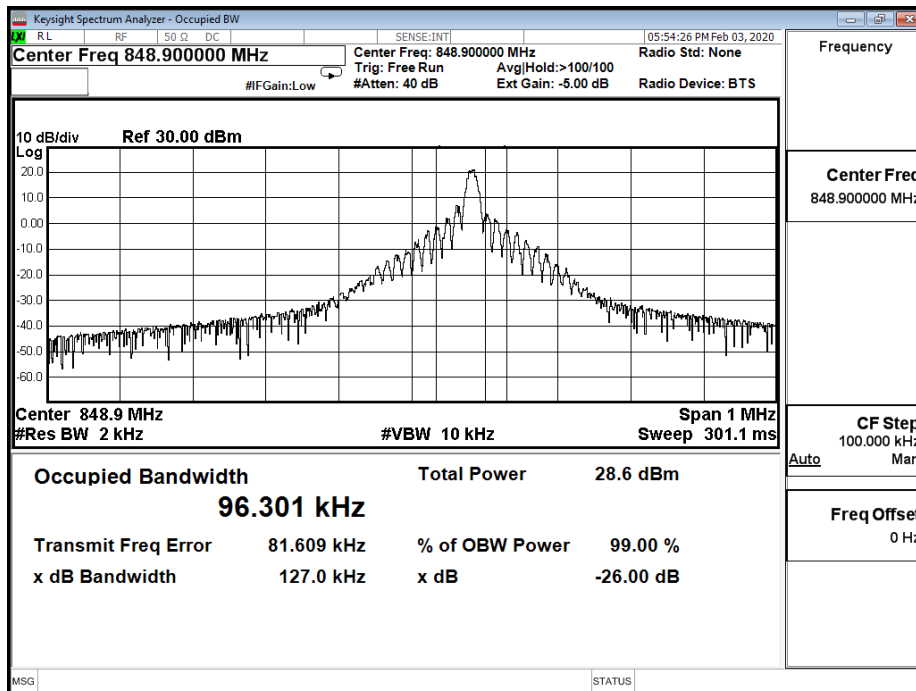
B26\_15K\_CH26915\_QPSK\_12RB0



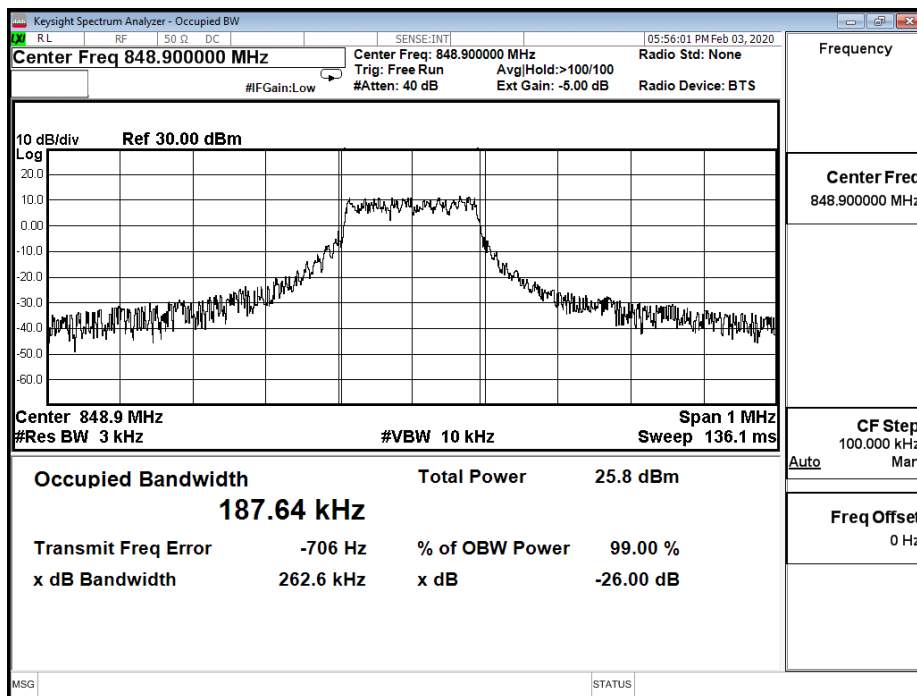
B26\_15K\_CH27039\_BPSK\_1RB11



B26\_15K\_CH27039\_QPSK\_1RB11



B26\_15K\_CH27039\_QPSK\_12RB0

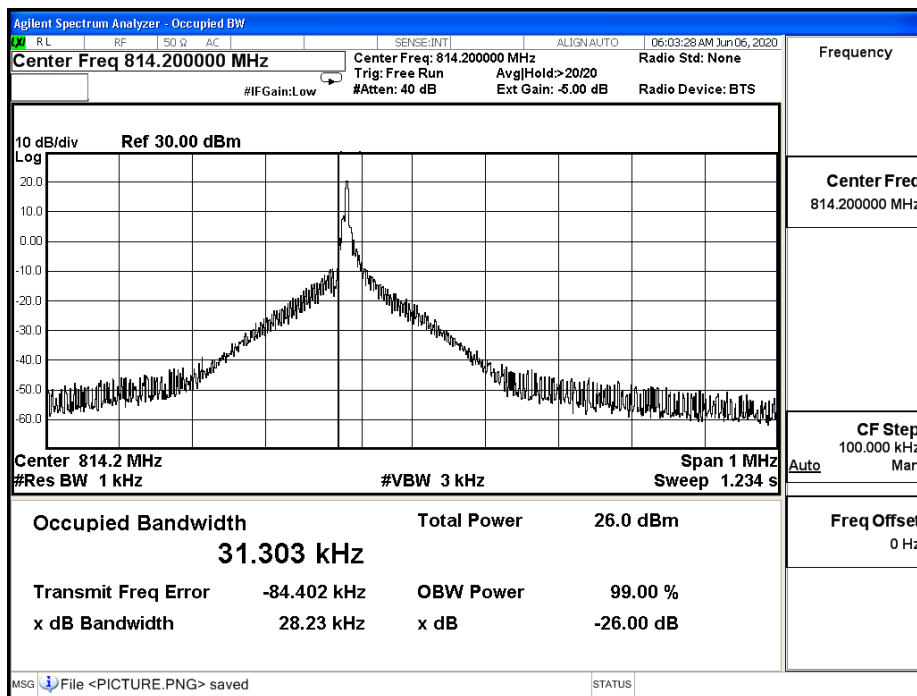




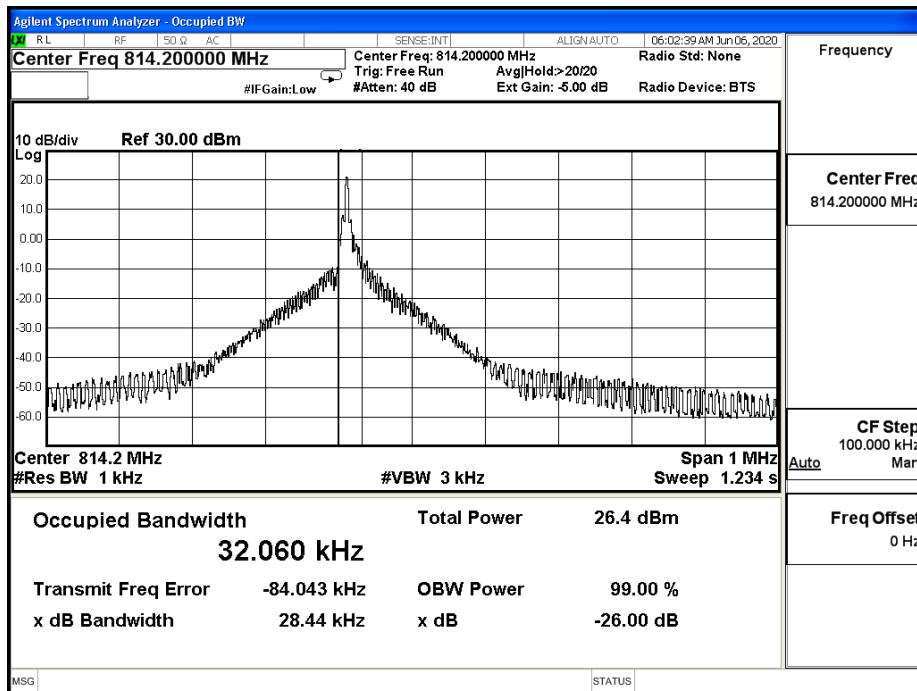
Product	Module		
Test Item	Occupied Bandwidth (Part 90)		
Test Mode	Mode 7 : LTE NB-IoT_Band 26		
Date of Test	2020/02/04~2020/06/06	Test Site	SR12-H
Temperature (°C)	19.0~21.0	Humidity (%RH)	56.0~59.0

Channel	Freq. (MHz)	Modulation	BW (kHz)	RB No.	RB offset	Measure Level (kHz)		Limit (MHz)
						26dB BW	99% BW	
26692	814.2	BPSK	3.75	1	0	28.230	31.303	NA
			15	1	0	110.400	95.314	NA
		QPSK	15	1	0	113.900	98.010	NA
				12	0	259.900	118.040	NA
26740	819	BPSK	3.75	1	0	34.250	49.290	NA
			15	1	0	122.400	101.340	NA
		QPSK	15	1	0	126.900	100.580	NA
				12	0	261.900	186.840	NA
26788	823.8	BPSK	3.75	1	47	46.710	54.714	NA
			15	1	11	101.100	97.829	NA
		QPSK	15	1	11	114.100	98.424	NA
				12	0	275.700	192.270	NA

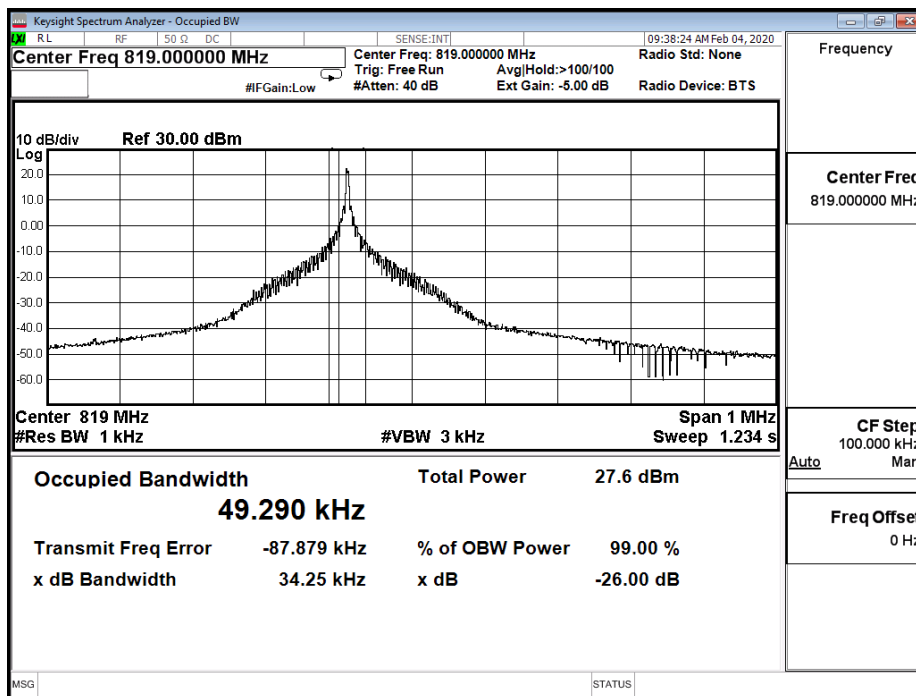
B26\_3.75K\_CH26692\_BPSK\_1RB0



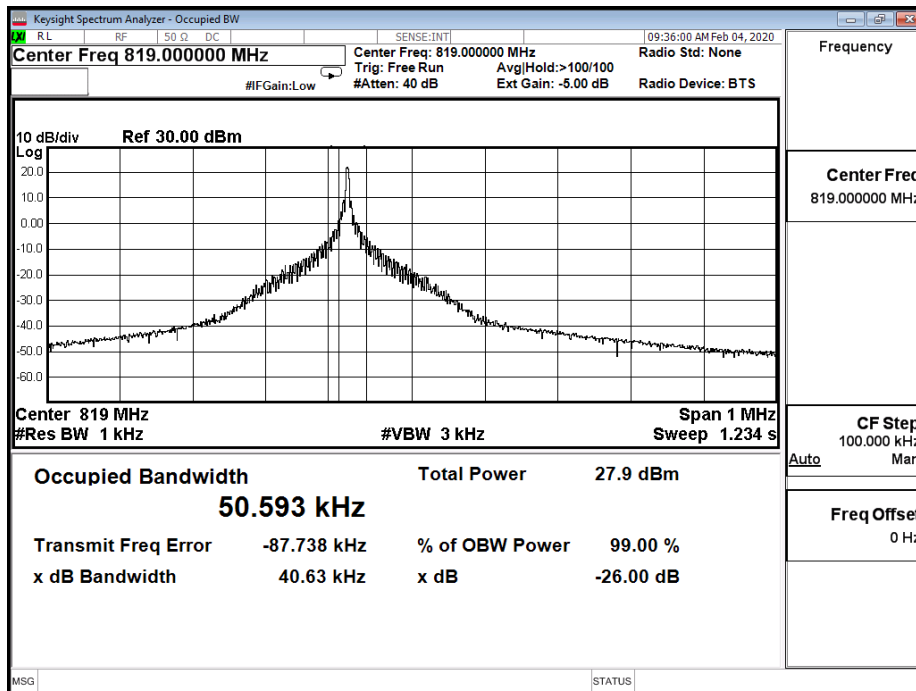
B26\_3.75K\_CH26692\_QPSK\_1RB0



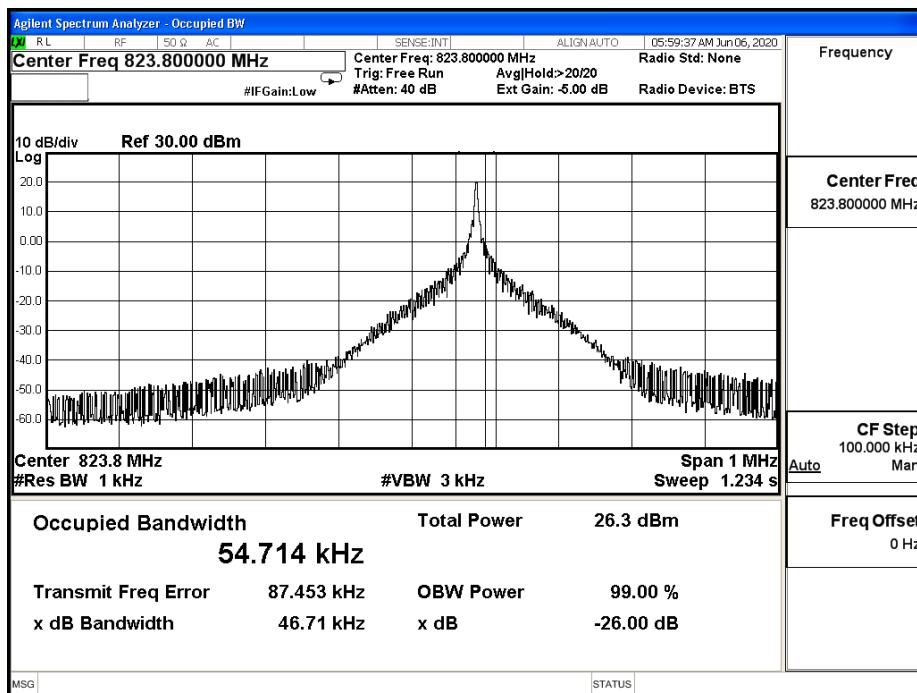
B26\_3.75K\_CH26740\_BPSK\_1RB0



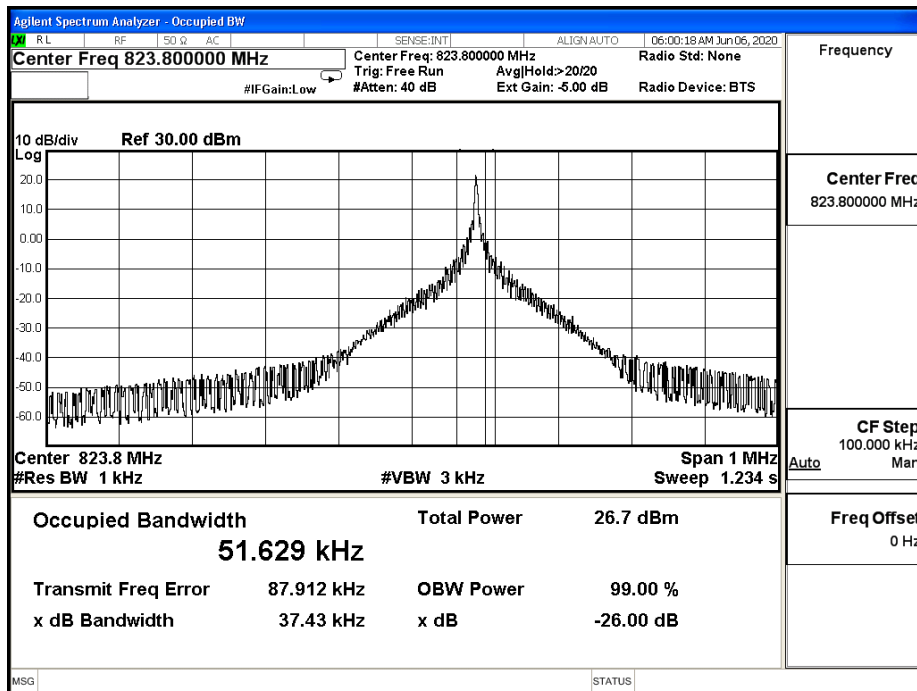
B26\_3.75K\_CH26740\_QPSK\_1RB0



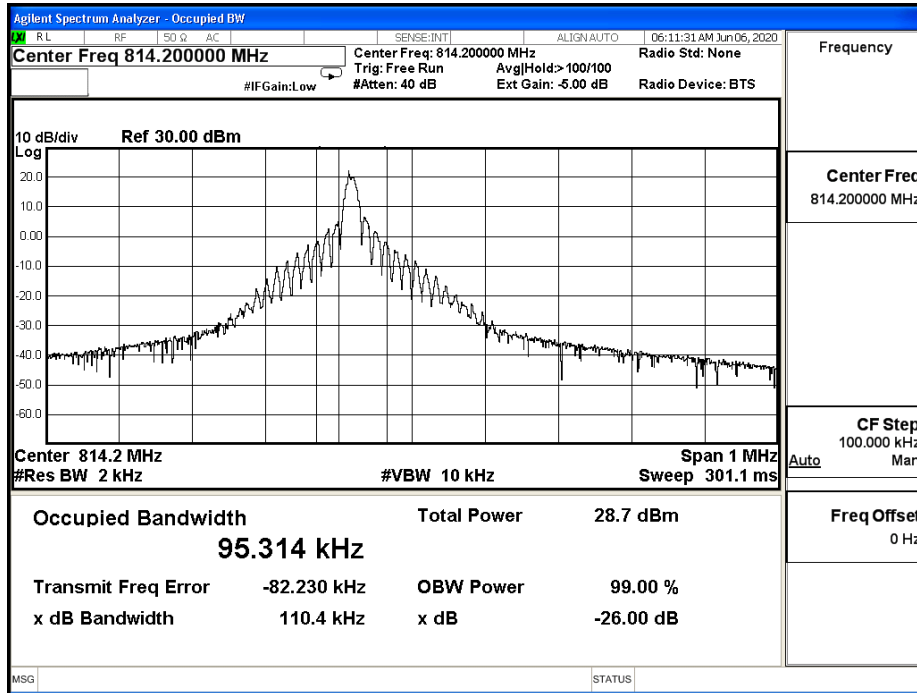
B26\_3.75K\_CH26788\_BPSK\_1RB47



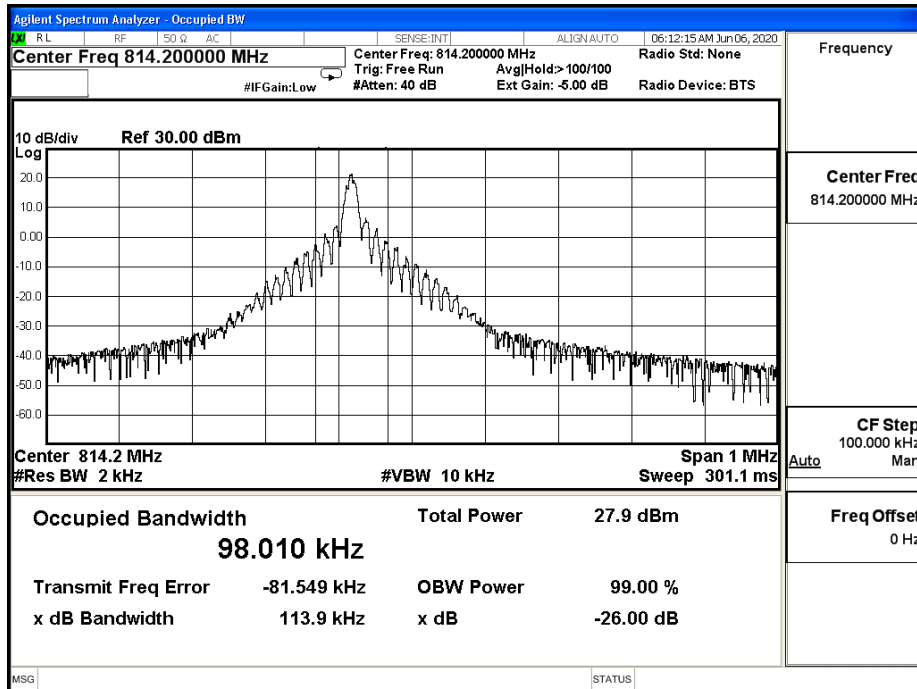
B26\_3.75K\_CH26788\_QPSK\_1RB47



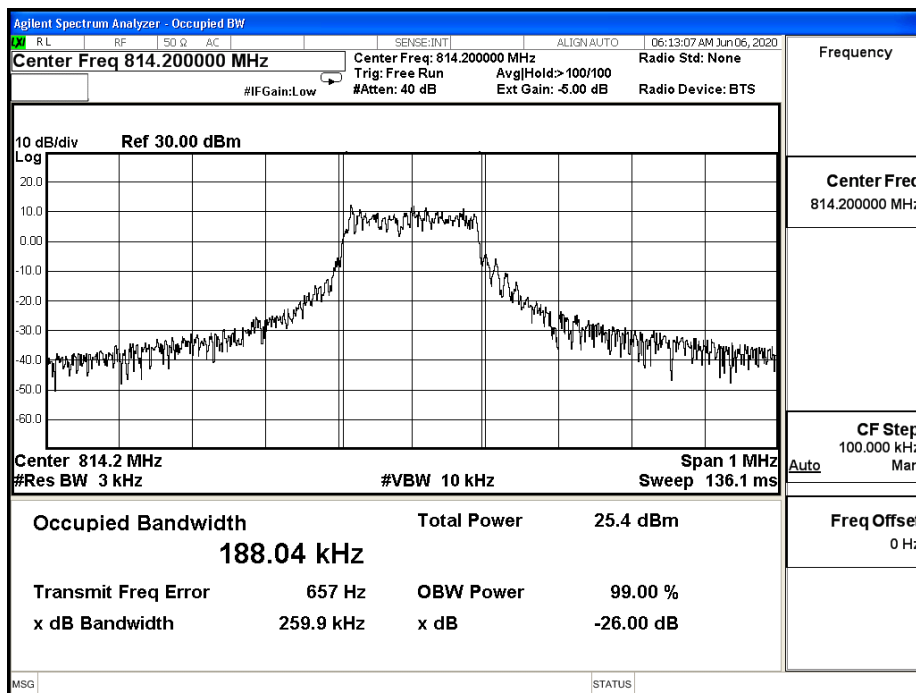
B26\_15K\_CH26692\_BPSK\_1RB0



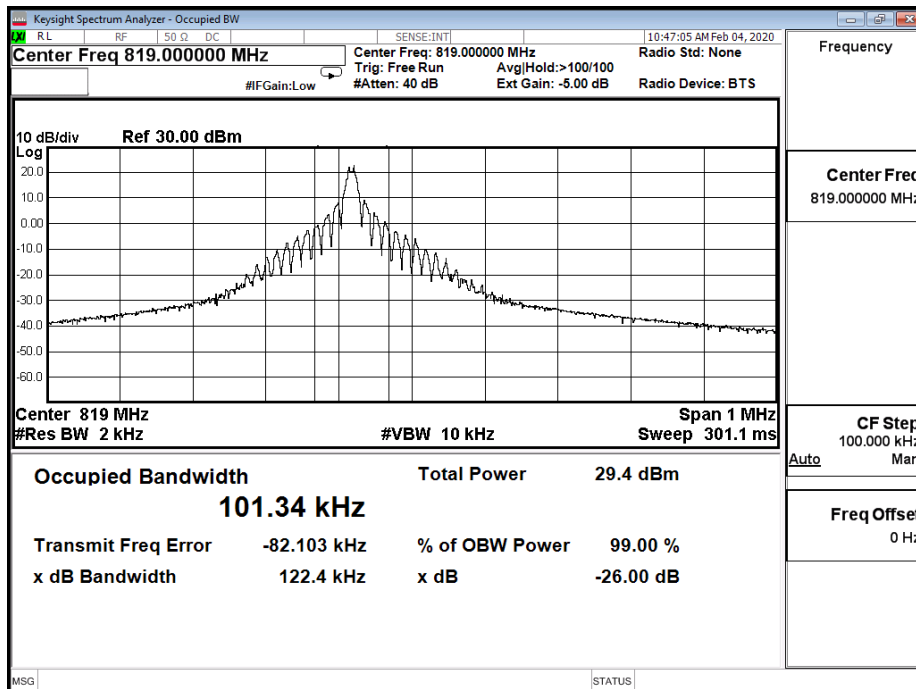
B26\_15K\_CH26692\_QPSK\_1RB0



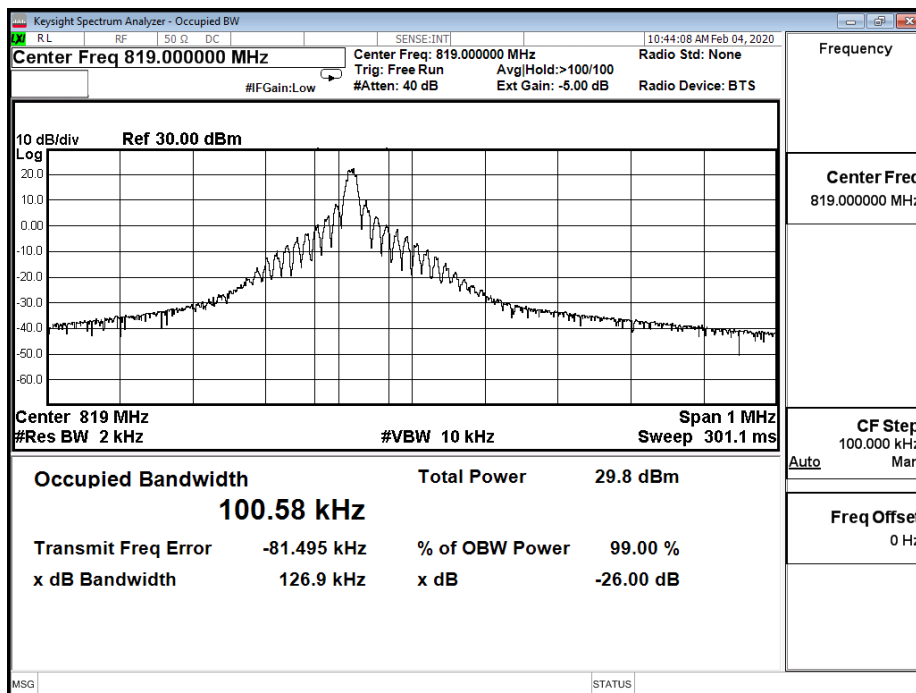
B26\_15K\_CH26692\_QPSK\_12RB0



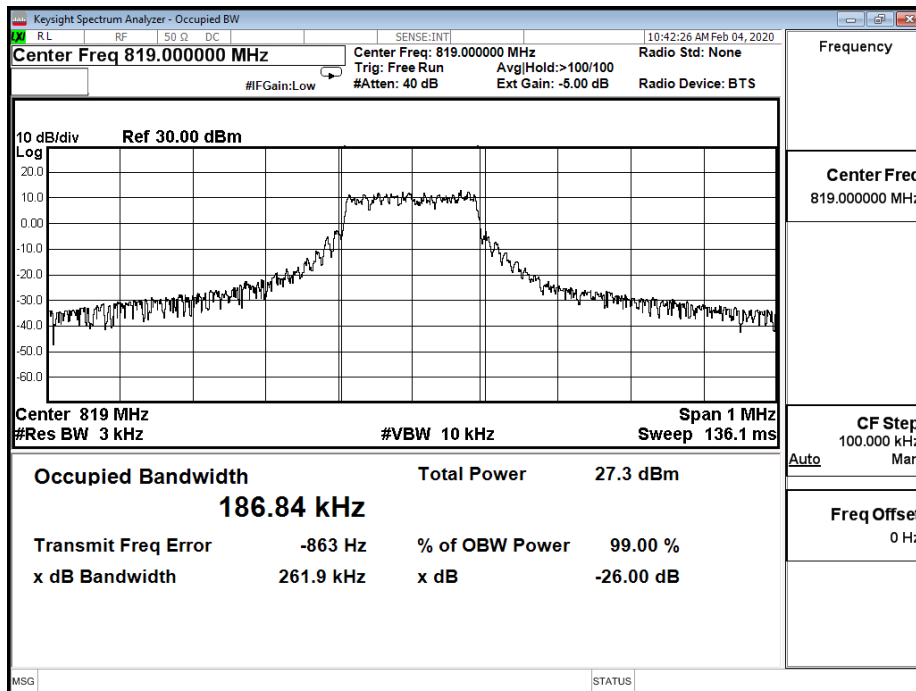
B26\_15K\_CH26740\_BPSK\_1RB0



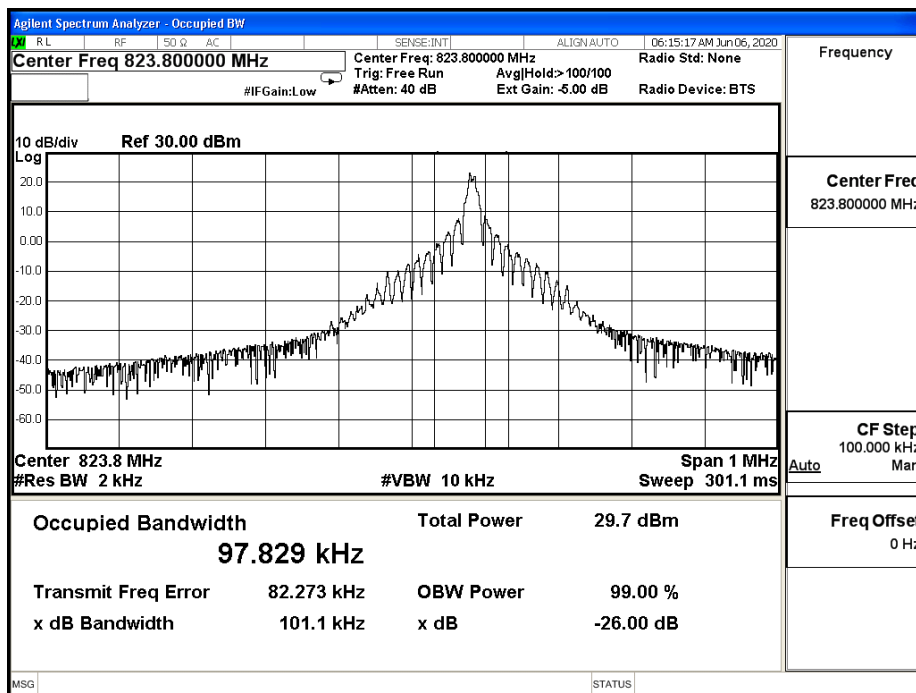
B26\_15K\_CH26740\_QPSK\_1RB0



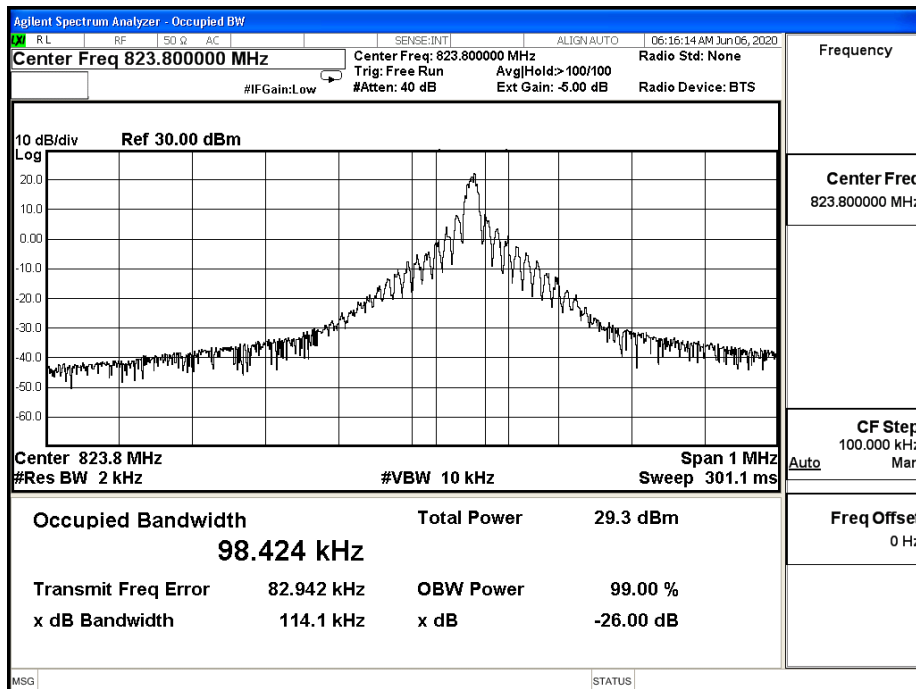
B26\_15K\_CH26740\_QPSK\_12RB0



B26\_15K\_CH26788\_BPSK\_1RB11

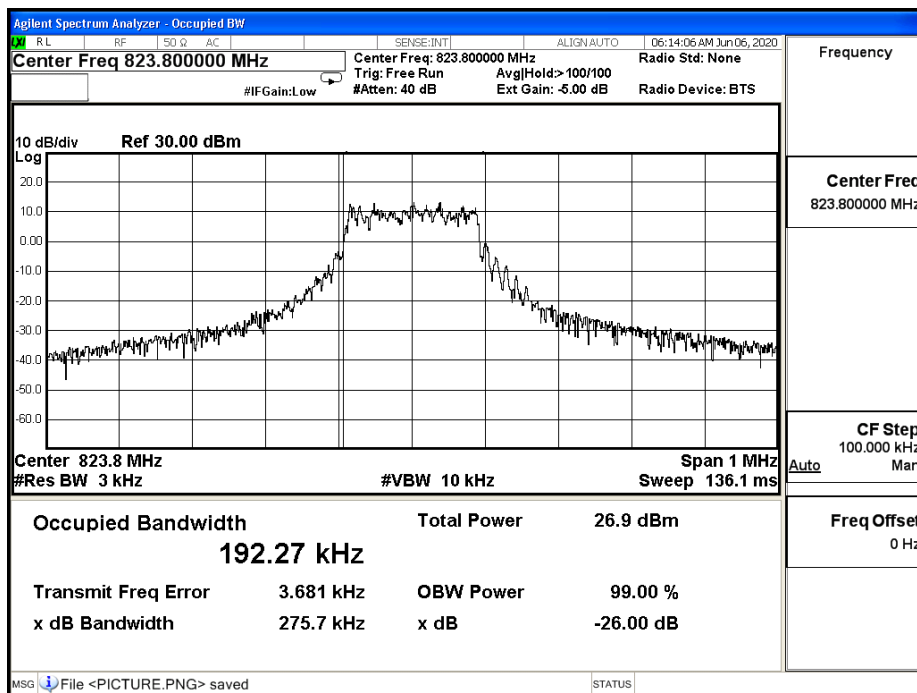


B26\_15K\_CH26788\_QPSK\_1RB11





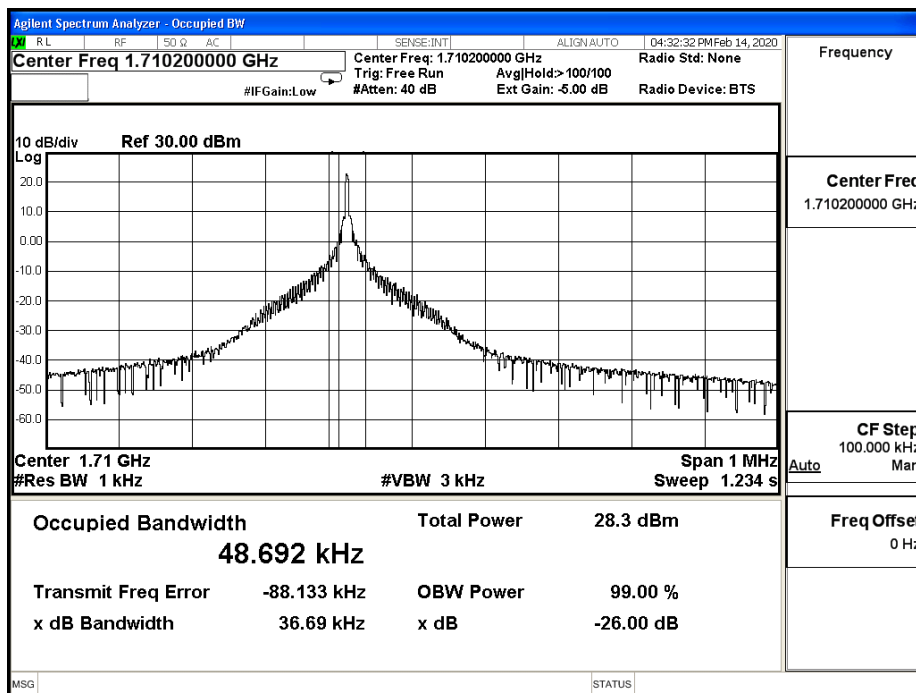
B26\_15K\_CH26788\_QPSK\_12RB0



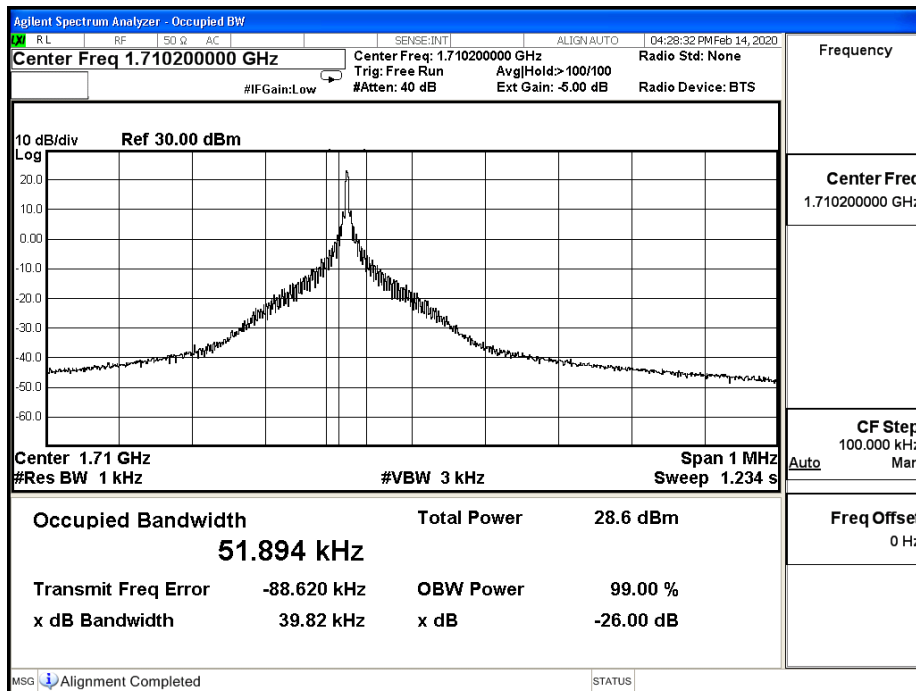
Product	Module		
Test Item	Occupied Bandwidth		
Test Mode	Mode 8 : LTE NB-IoT_Band 66		
Date of Test	2020/02/04~2020/02/14	Test Site	SR12-H
Temperature (°C)	19.0	Humidity (%RH)	59.0

Channel	Freq. (MHz)	Modulation	BW (kHz)	RB No.	RB offset	Measure Level (kHz)		Limit (MHz)
						26dB BW	99% BW	
131974	1710.2	BPSK	3.75	1	0	36.690	48.692	NA
			15	1	0	121.900	99.765	NA
		QPSK	15	1	0	39.820	51.894	NA
				12	0	126.900	101.840	NA
132322	1745	BPSK	3.75	1	0	264.500	190.950	NA
			15	1	0	36.310	51.164	NA
		QPSK	15	1	0	137.500	102.510	NA
				12	0	40.620	53.197	NA
132670	1779.8	BPSK	3.75	1	47	127.400	100.140	NA
			15	1	11	262.700	195.280	NA
		QPSK	15	1	11	34.120	52.999	NA
				12	0	138.000	102.470	NA

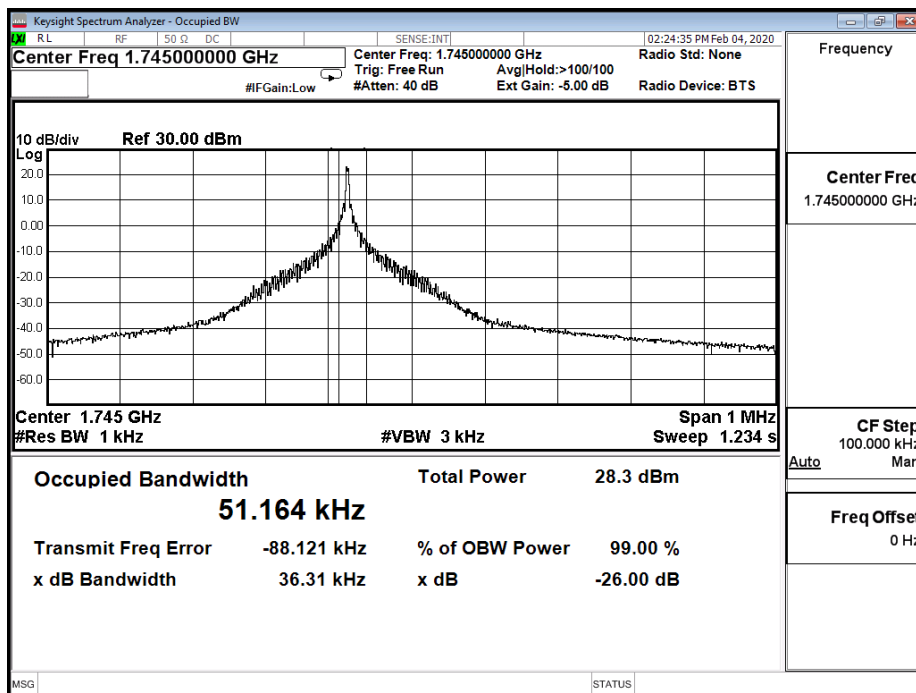
B66\_3.75K\_CH131974\_BPSK\_1RB0



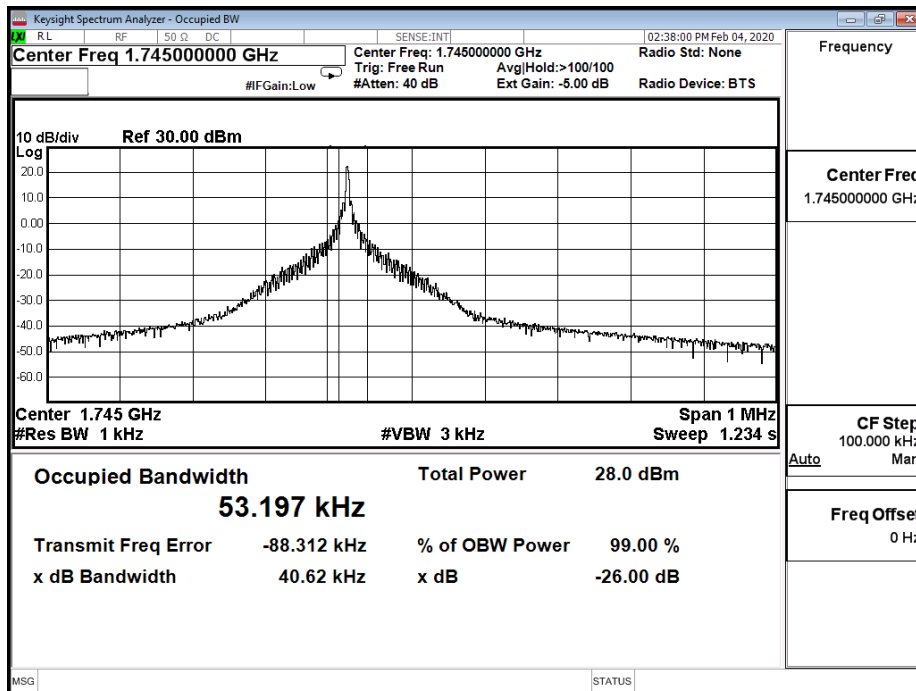
B66\_3.75K\_CH131974\_QPSK\_1RB0



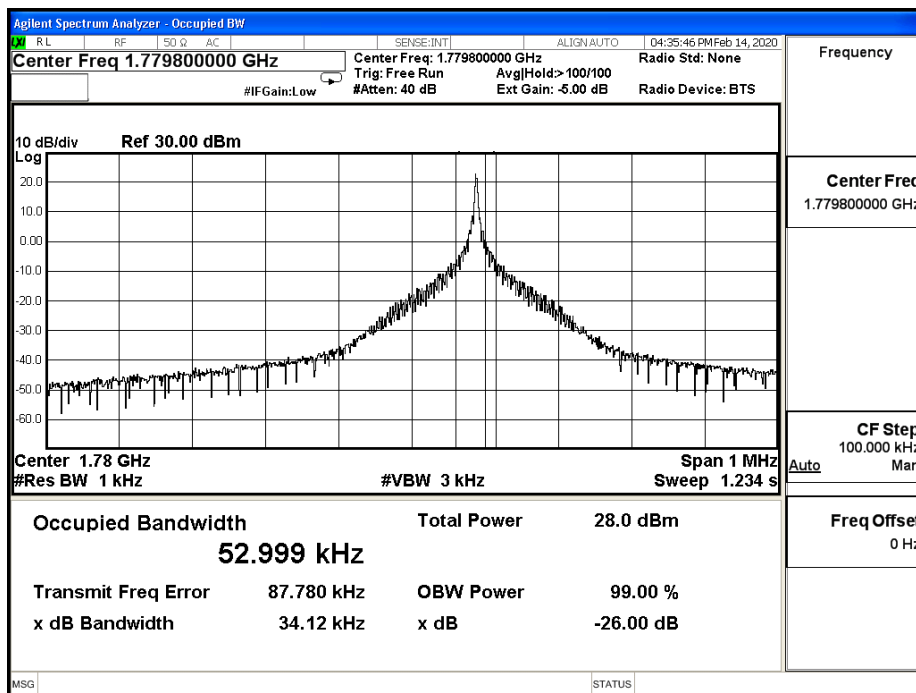
B66\_3.75K\_CH132322\_BPSK\_1RB0



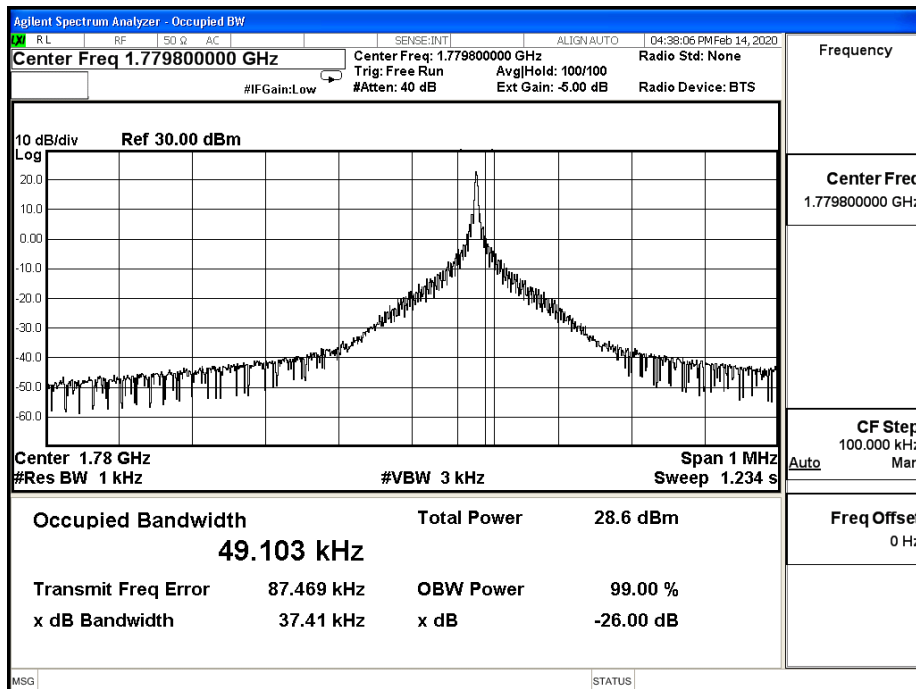
B66\_3.75K\_CH132322\_QPSK\_1RB0



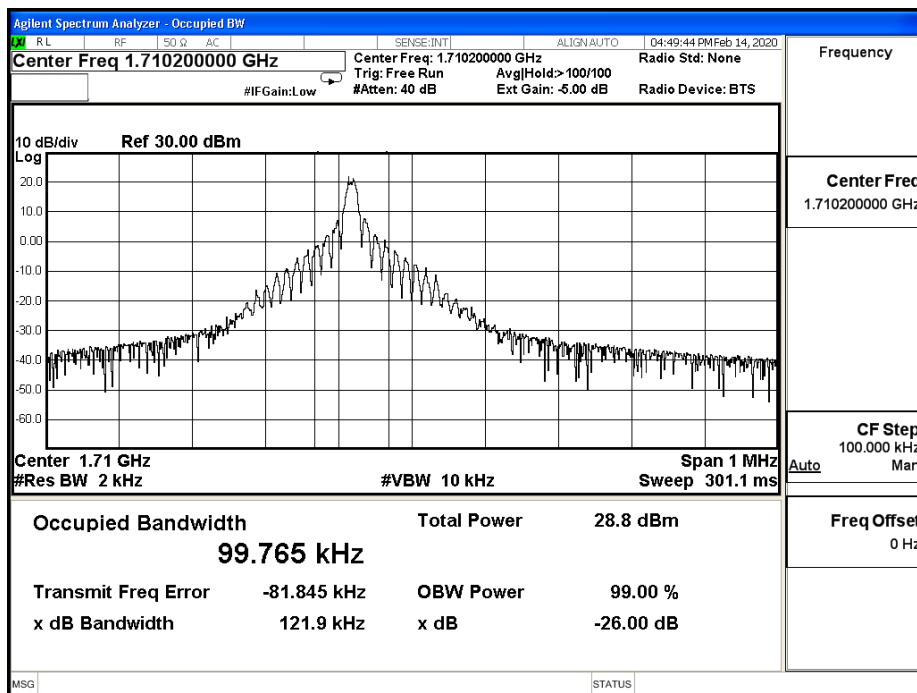
B66\_3.75K\_CH132670\_BPSK\_1RB47



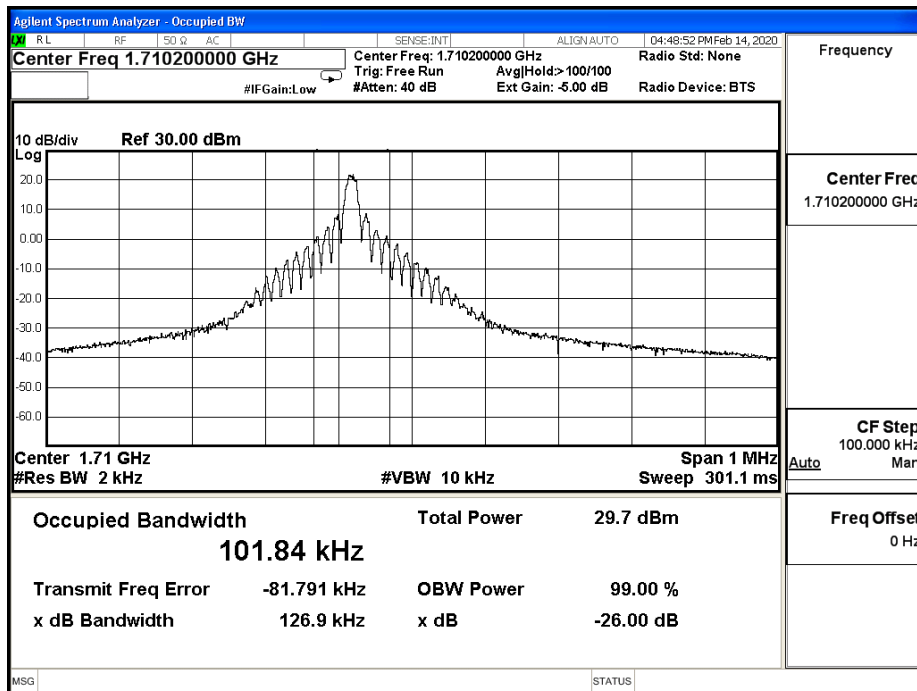
B66\_3.75K\_CH132670\_QPSK\_1RB47



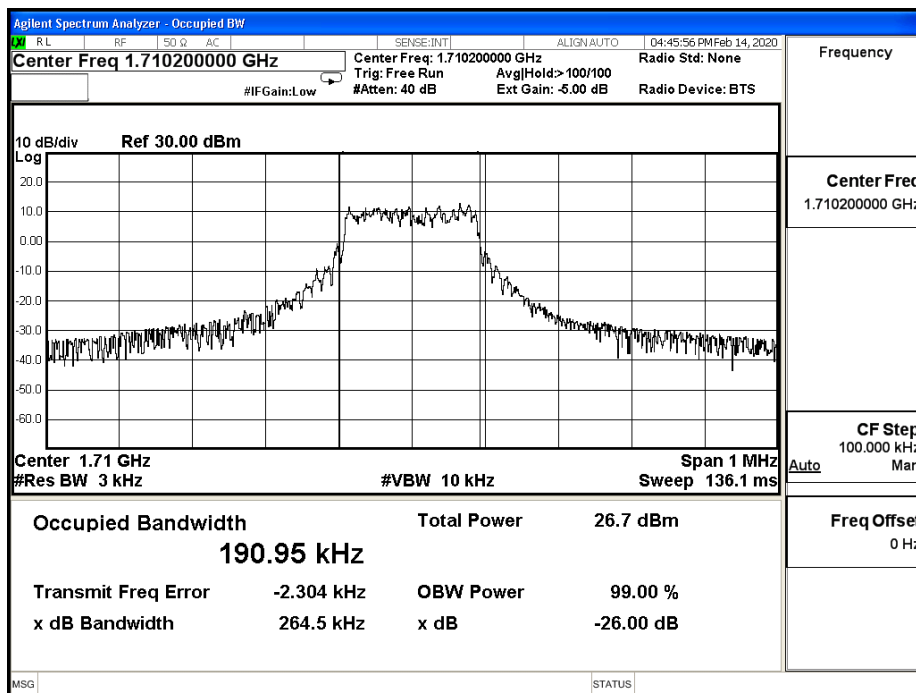
B66\_15K\_CH131974\_BPSK\_1RB0



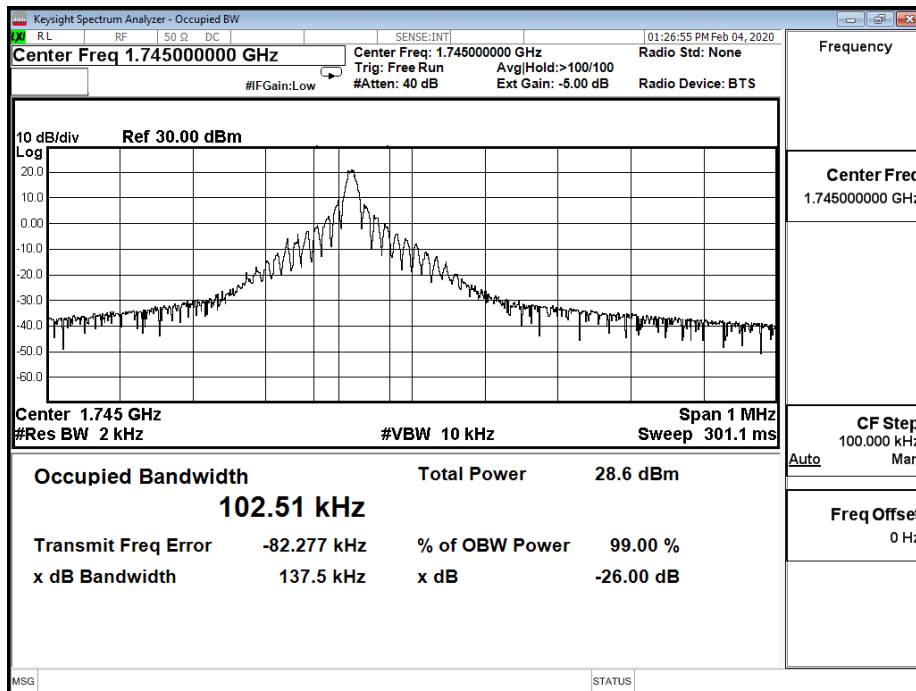
B66\_15K\_CH131974\_QPSK\_1RB0



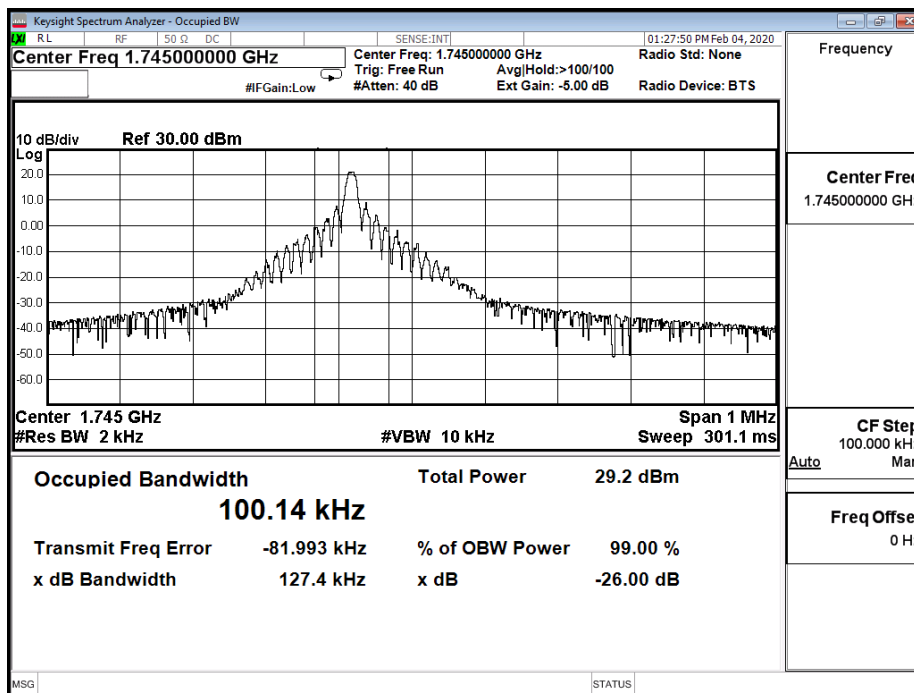
B66\_15K\_CH131974\_QPSK\_12RB0



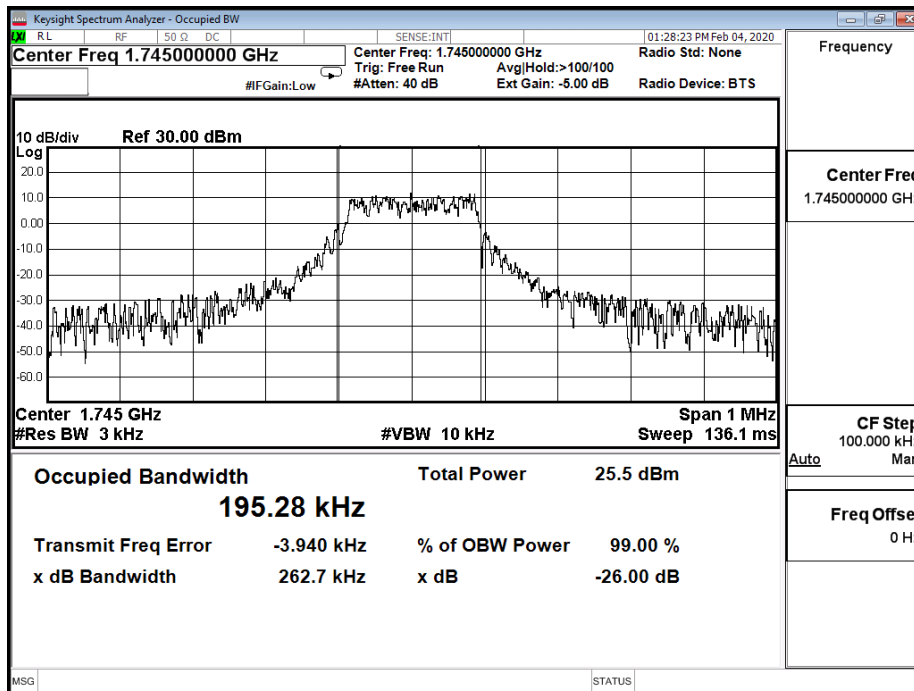
B66\_15K\_CH132322\_BPSK\_1RB0



B66\_15K\_CH132322\_QPSK\_1RB0

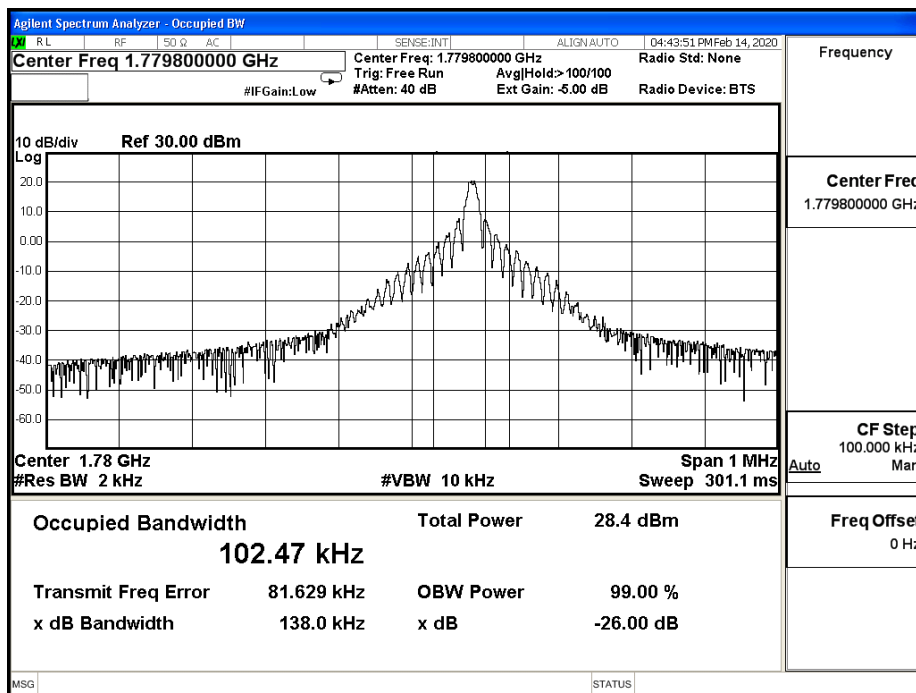


B66\_15K\_CH132322\_QPSK\_12RB0

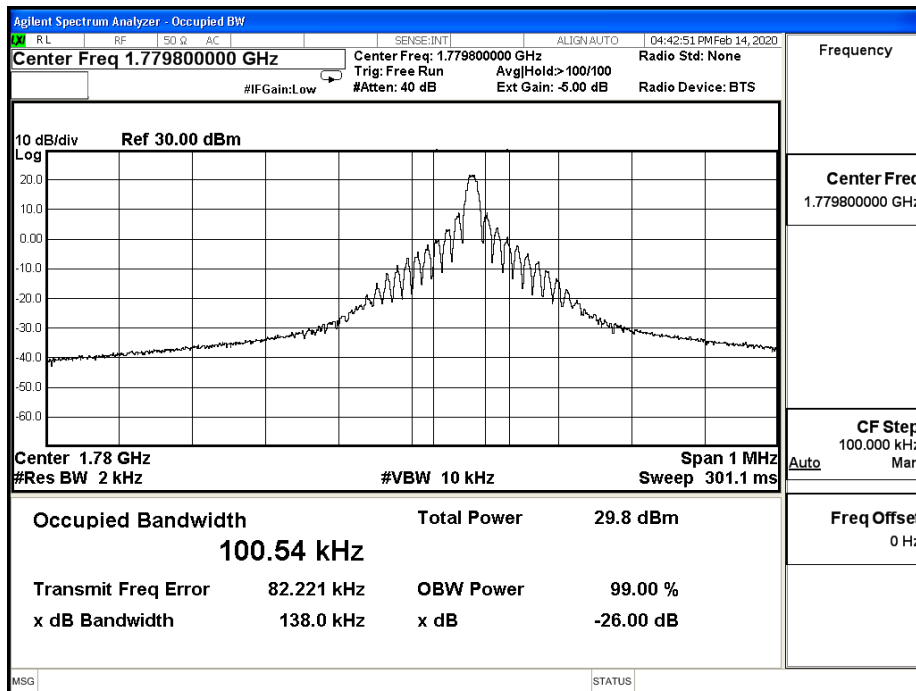




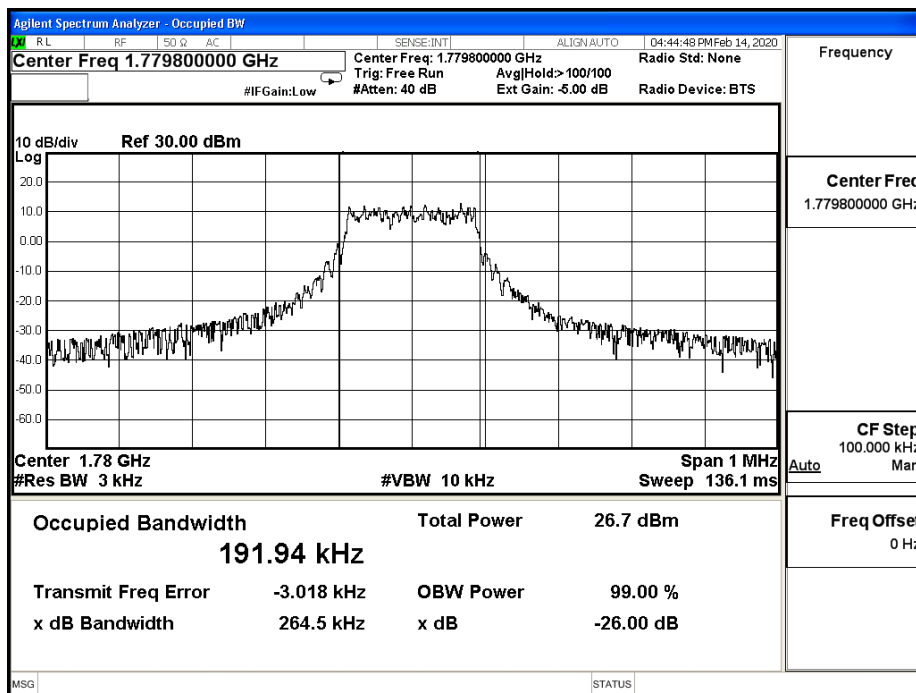
B66\_15K\_CH132670\_BPSK\_1RB11



B66\_15K\_CH132670\_QPSK\_1RB11

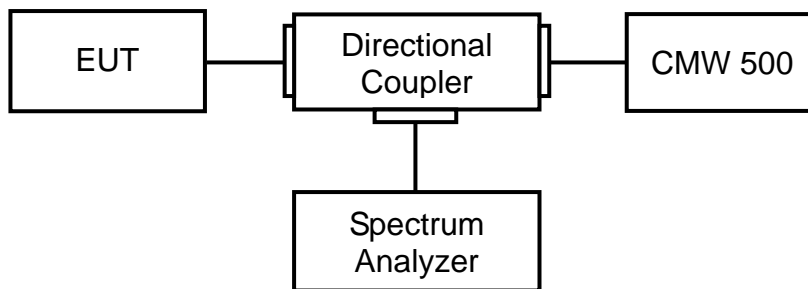


B66\_15K\_CH132670\_QPSK\_12RB0



## 5. Peak To Average Ratio

### 5.1. Test Setup



### 5.2. Test Procedure

1. Set resolution/measurement bandwidth  $\geq$  signal's occupied bandwidth.
2. Set the number of counts to a value that stabilizes the measured CCDF curve.
3. Record the maximum PAPR level associated with a probability of 0.1 %.

### 5.3. Test Method

KDB 971168 D01 Power Meas License Digital Systems v03 sub-clause 5.7.2  
ANSI C63.26: 2015 Sub-clause 5.2.3.4

### 5.4. Limit

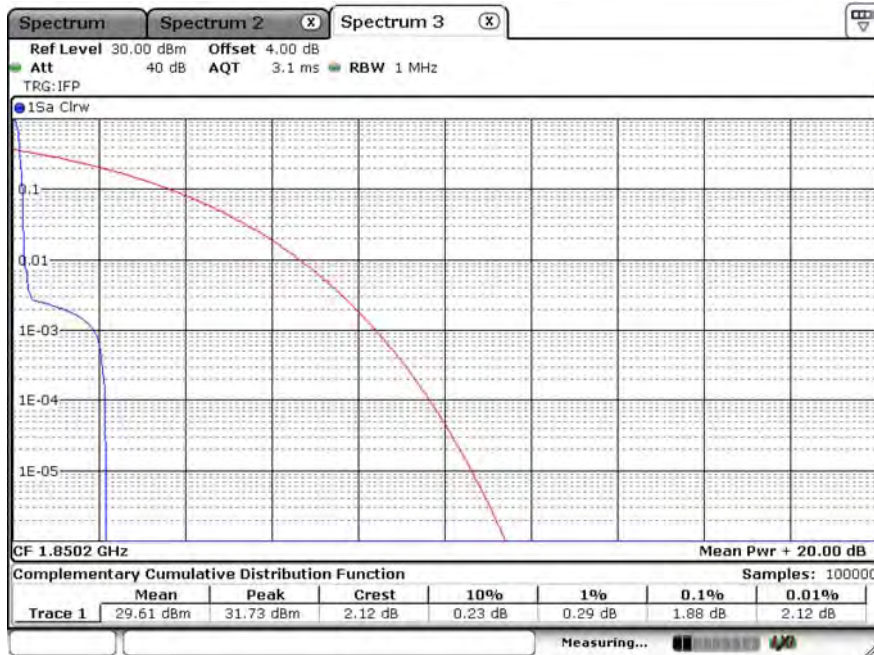
In measuring transmissions in this band using an average power technique, the peak to-average ratio (PAR) of the transmission may not exceed 13dB.

**5.5. Test Result**

Product	Module		
Test Item	Peak To Average Ratio		
Test Mode	Mode 1 : LTE NB-IoT_Band 2		
Date of Test	2020/02/13	Test Site	SR12-H
Temperature (°C)	22.0	Humidity (%RH)	62.0

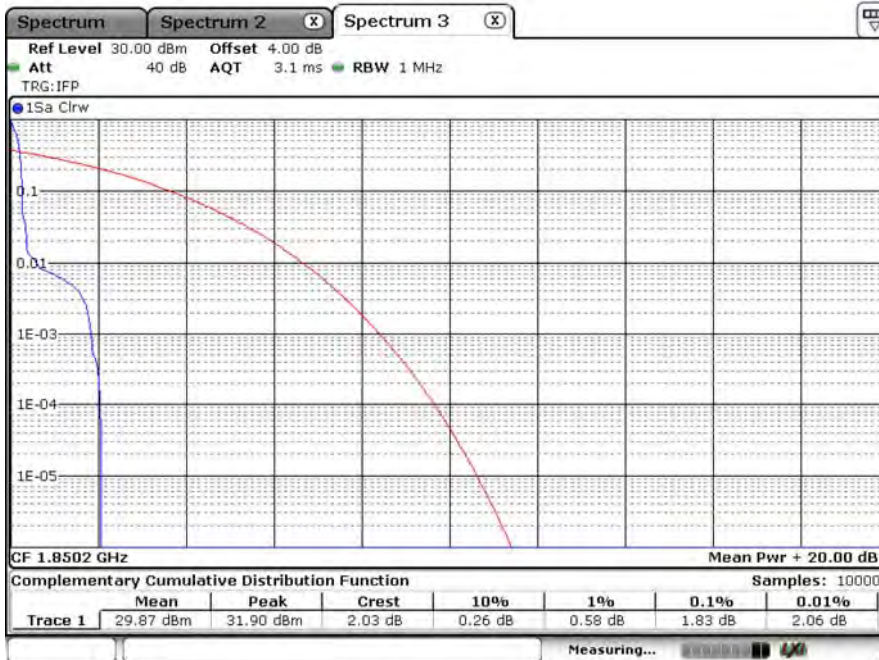
Channel	Freq. (MHz)	BW (kHz)	Modulation	RB No.	RB offset	Average (dBm)	Peak (dBm)	PAPR 0.01% (dB)
18602	1850.2	3.75	BPSK	1	0	29.61	31.73	1.88
			QPSK	1	0	29.87	31.90	1.83
		15	BPSK	1	0	29.72	30.20	0.43
			QPSK	1	0	29.66	31.82	2.09
				12	0	23.06	33.24	9.86
18900	1880	3.75	BPSK	1	0	29.54	29.97	0.38
			QPSK	1	0	29.87	31.94	1.97
		15	BPSK	1	0	29.71	30.18	0.43
			QPSK	1	0	29.67	31.90	2.12
				12	0	22.94	33.50	10.32
19198	1909.8	3.75	BPSK	1	47	29.71	31.61	1.59
			QPSK	1	47	29.72	31.72	1.94
		15	BPSK	1	11	29.93	30.41	0.43
			QPSK	1	11	29.89	32.21	2.23
				12	0	22.92	33.68	10.49

B2 3.75K CH18602 BPSK 1RB0



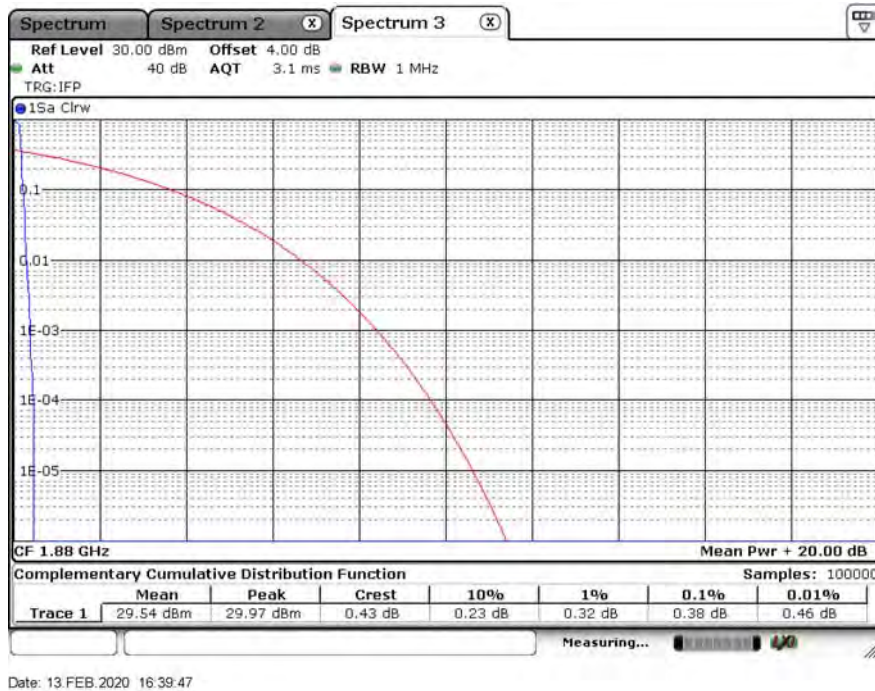
Date: 13.FEB.2020 16:39:30

B2 3.75K CH18602 QPSK 1RB0

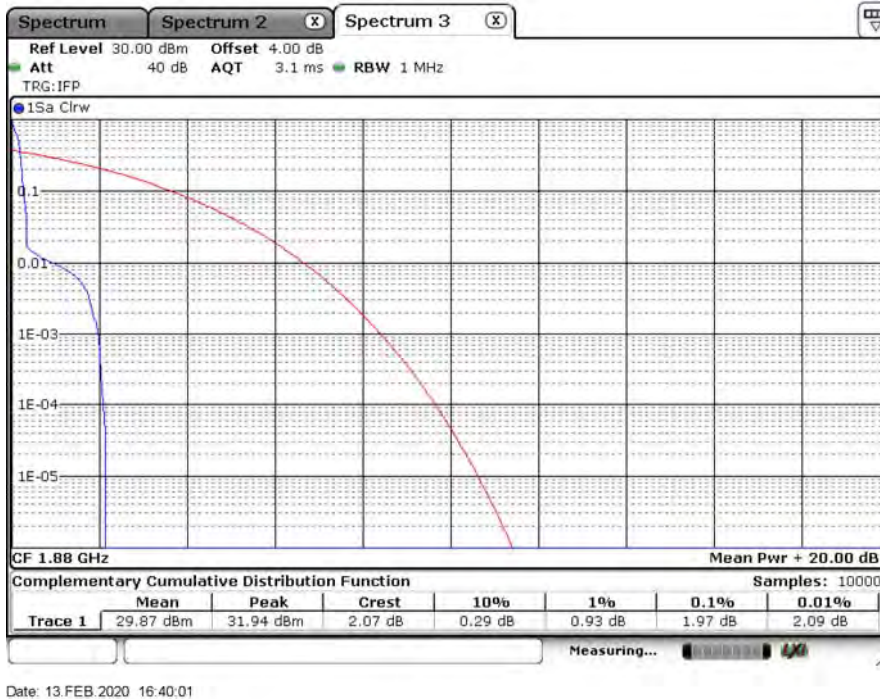


Date: 13.FEB.2020 16:39:18

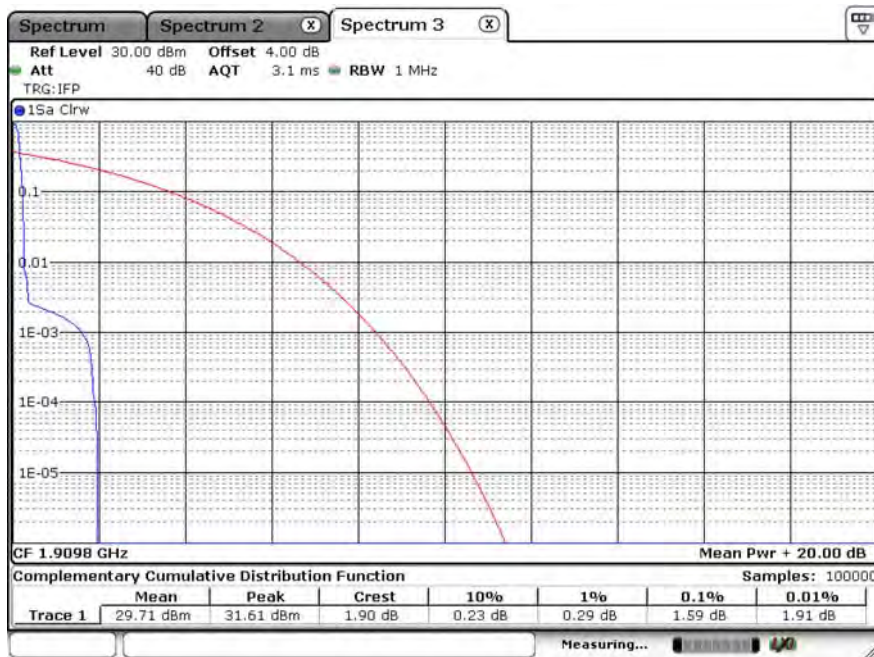
B2\_3.75K\_CH18900\_BPSK\_1RB0



B2\_3.75K\_CH18900\_QPSK\_1RB0

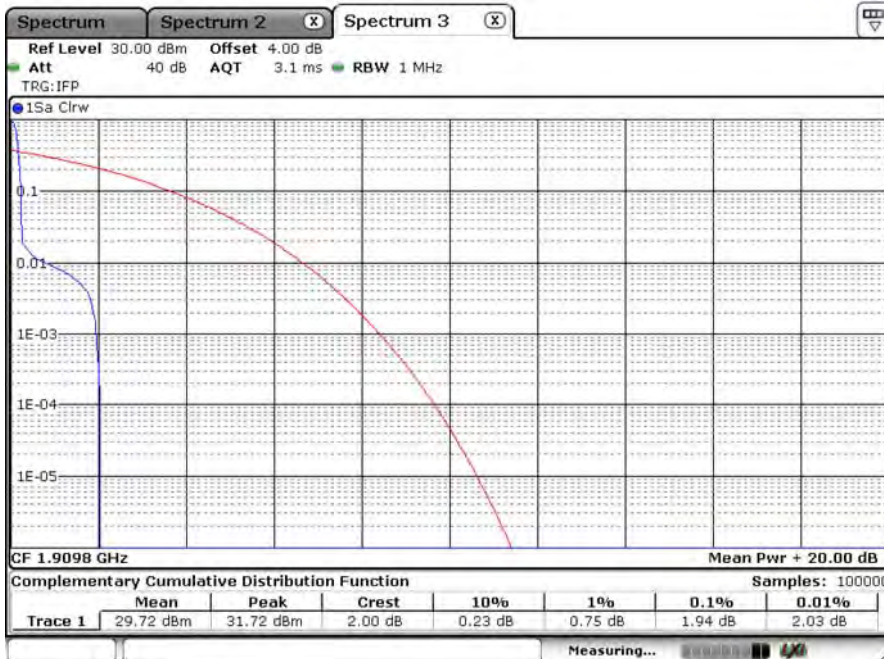


### B2\_3.75K\_CH19198\_BPSK\_1RB47



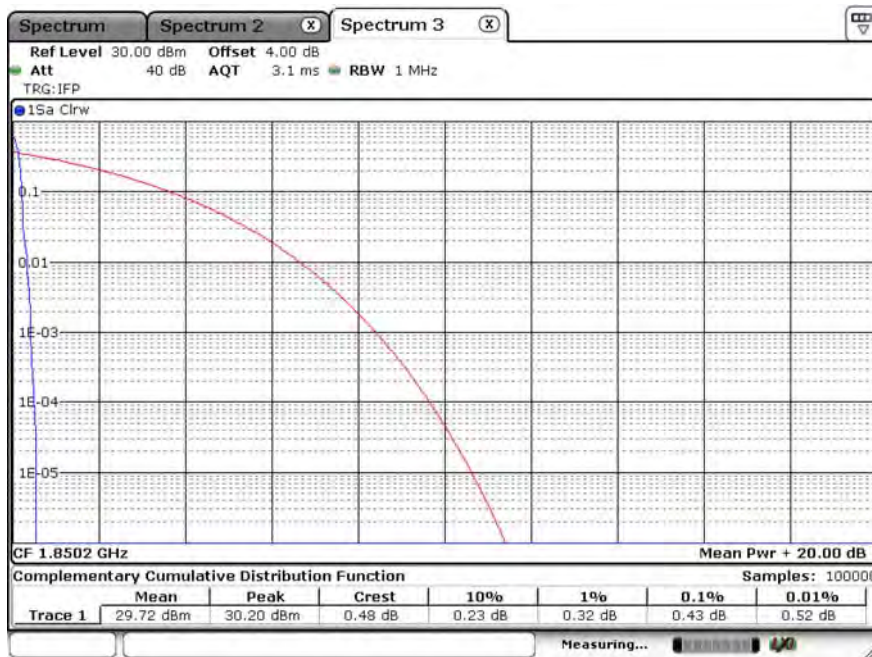
Date: 13.FEB.2020 16:40:43

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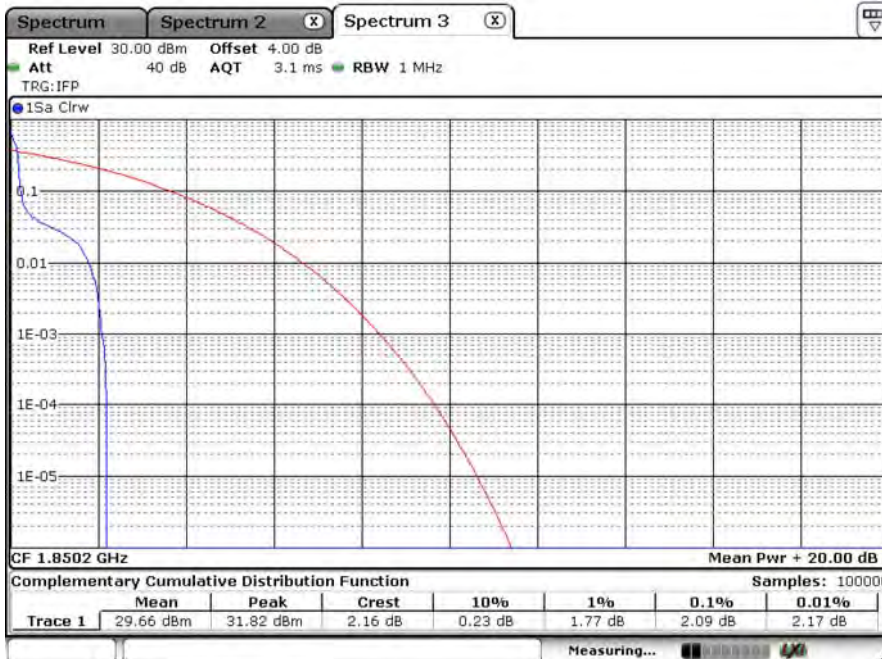
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### B2\_15K\_CH18602\_BPSK\_1RB0



Date: 13 FEB 2020 16:38:53

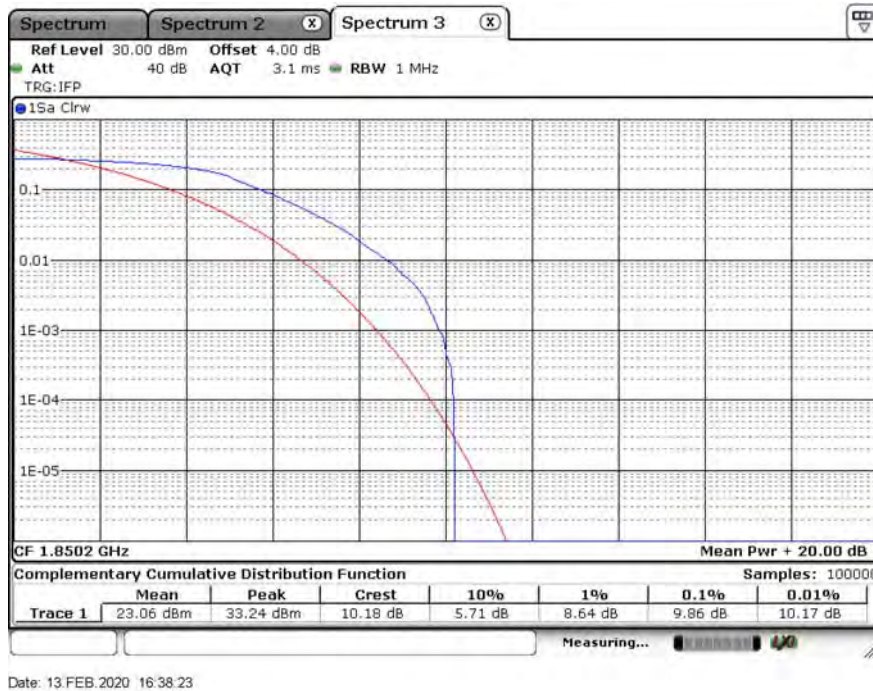
### B2\_15K\_CH18602\_QPSK\_1RB0



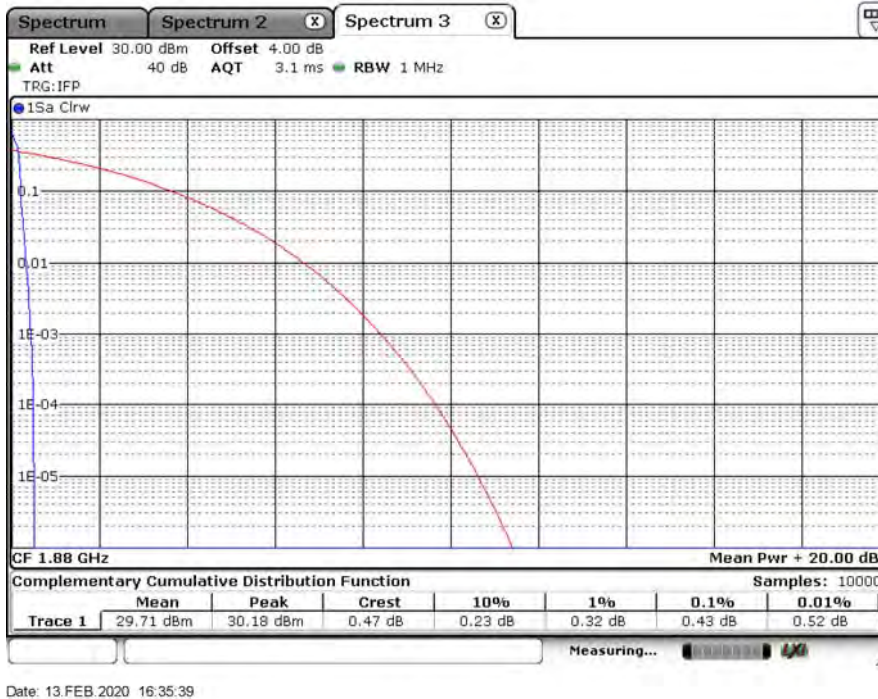
Date: 13 FEB 2020 16:38:38



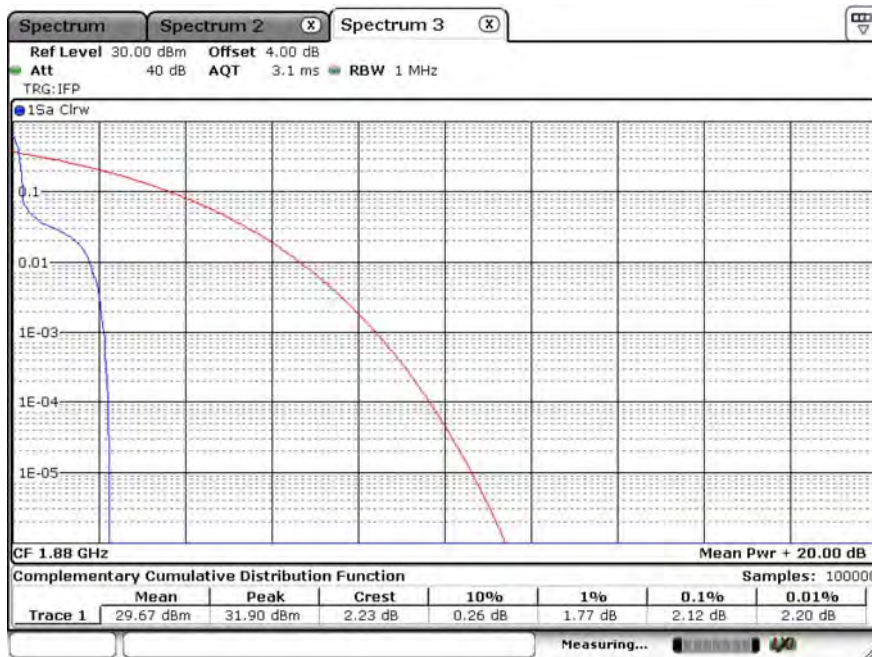
### B2\_15K\_CH18602\_QPSK\_12RB0



### B2\_15K\_CH18900\_BPSK\_1RB0

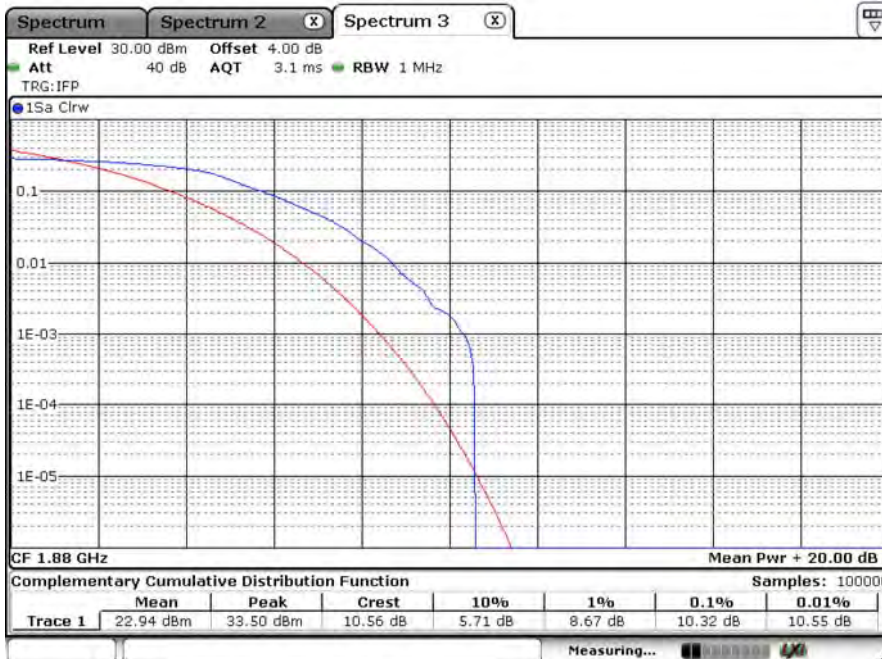


### B2\_15K\_CH18900\_QPSK\_1RB0



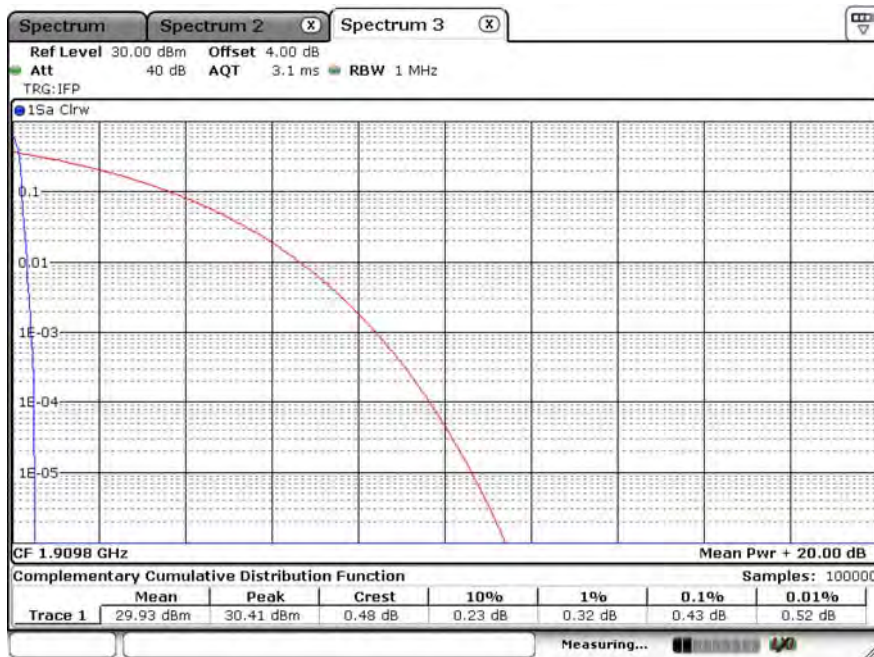
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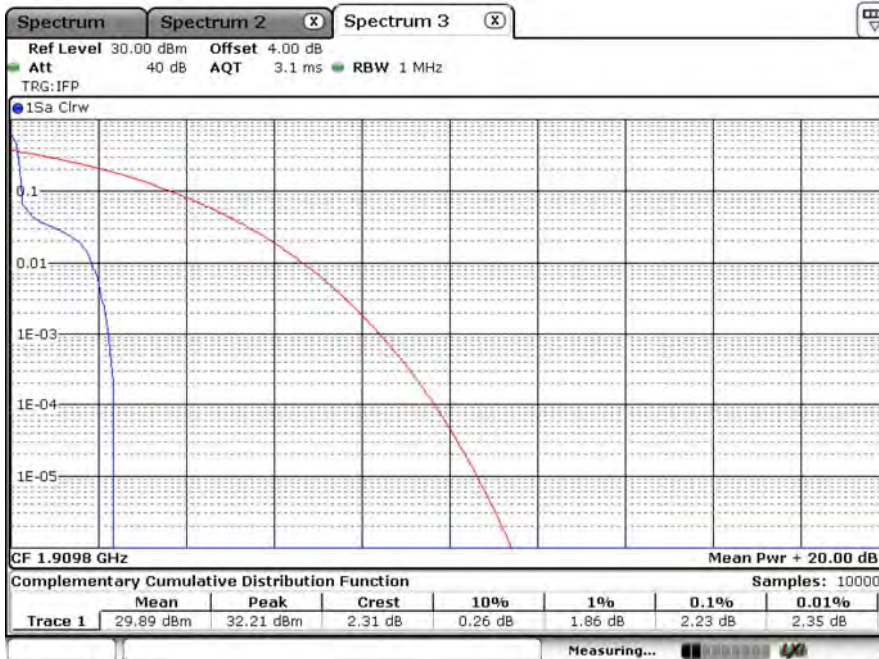
Date: 13 FEB 2020 16:36:02

### B2\_15K\_CH19198\_BPSK\_1RB11



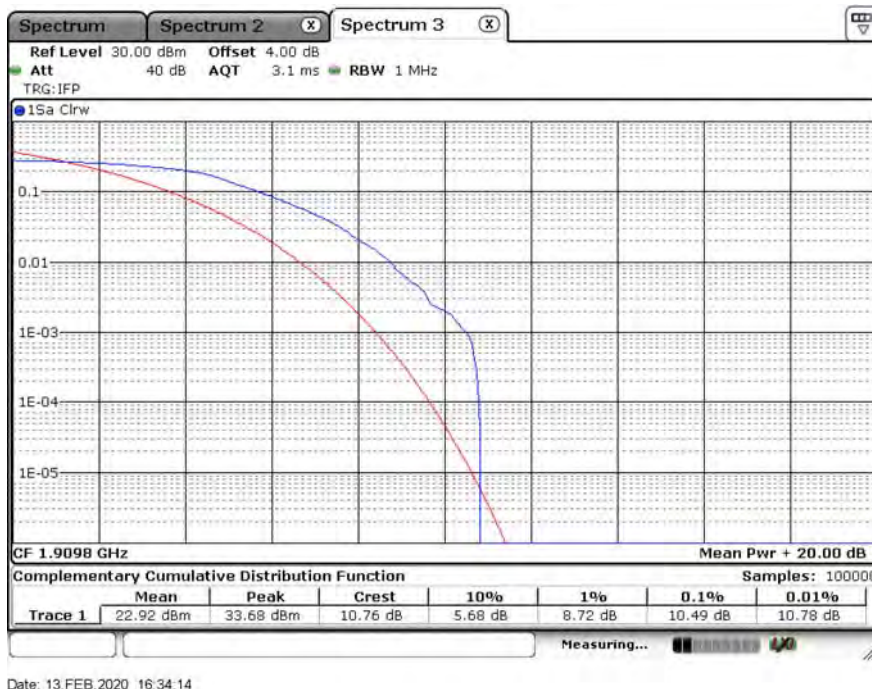
Date: 13 FEB 2020 16:34:42

### B2\_15K\_CH19198\_QPSK\_1RB11



Date: 13 FEB 2020 16:34:31

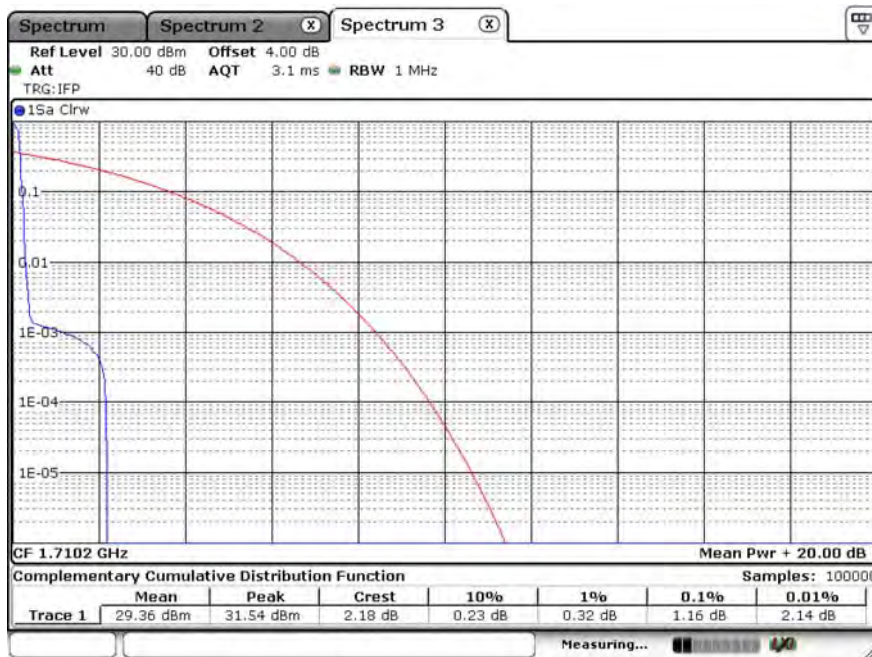
B2\_15K\_CH19198\_QPSK\_12RB0



Product	Module		
Test Item	Peak To Average Ratio		
Test Mode	Mode 2 : LTE NB-IoT_Band 4		
Date of Test	2020/02/13	Test Site	SR12-H
Temperature (°C)	22.0	Humidity (%RH)	62.0

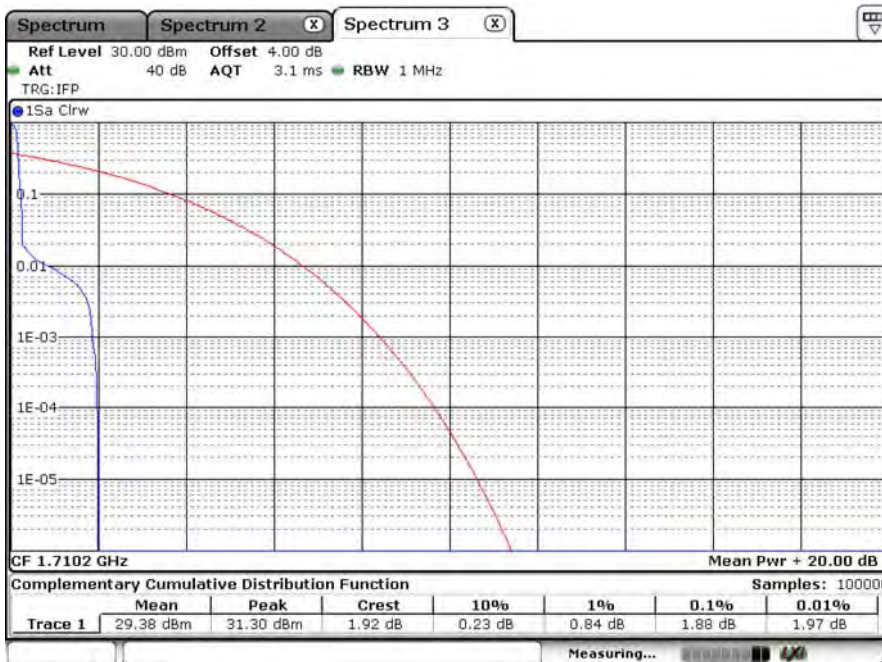
Channel	Freq. (MHz)	BW (kHz)	Modulation	RB No.	RB offset	Average (dBm)	Peak (dBm)	PAPR 0.01% (dB)
19952	1710.2	3.75	BPSK	1	0	29.36	31.54	1.16
			QPSK	1	0	29.38	31.30	1.88
		15	BPSK	1	0	29.74	30.18	0.41
			QPSK	1	0	29.69	31.83	2.06
				12	0	22.97	33.25	10.06
20175	1732.5	3.75	BPSK	1	0	29.34	31.45	1.83
			QPSK	1	0	29.33	31.22	1.83
		15	BPSK	1	0	29.51	29.92	0.41
			QPSK	1	0	29.58	31.68	2.00
				12	0	22.78	33.32	9.77
20398	1754.8	3.75	BPSK	1	47	28.07	29.70	0.70
			QPSK	1	47	27.78	29.84	1.77
		15	BPSK	1	11	27.99	28.39	0.41
			QPSK	1	11	27.95	30.04	2.00
				12	0	20.89	31.10	10.00

### B4\_3.75K\_CH19952\_BPSK\_1RB0



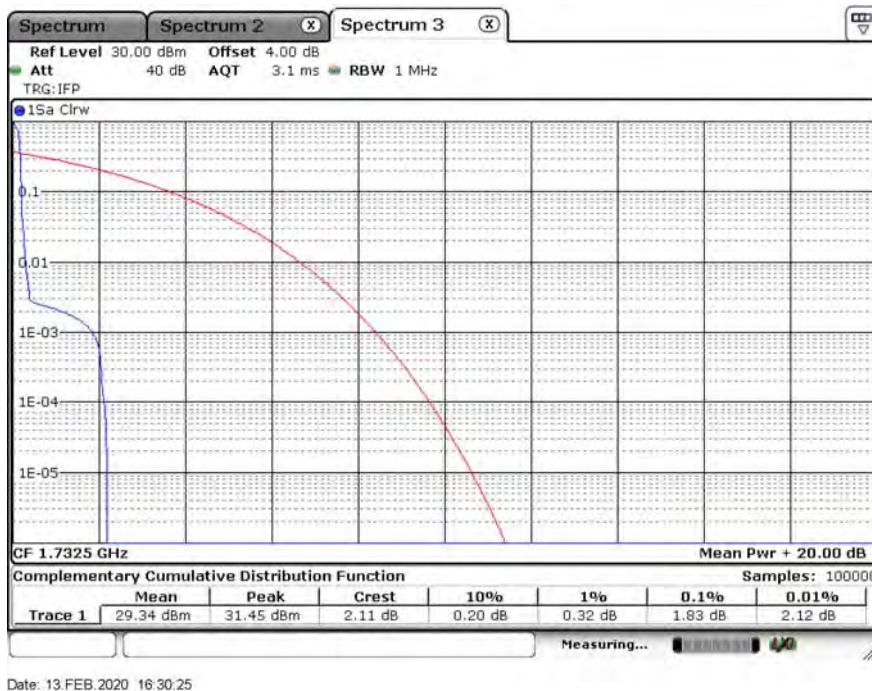
Date: 13 FEB 2020 16:29:40

### B4\_3.75K\_CH19952\_QPSK\_1RB0

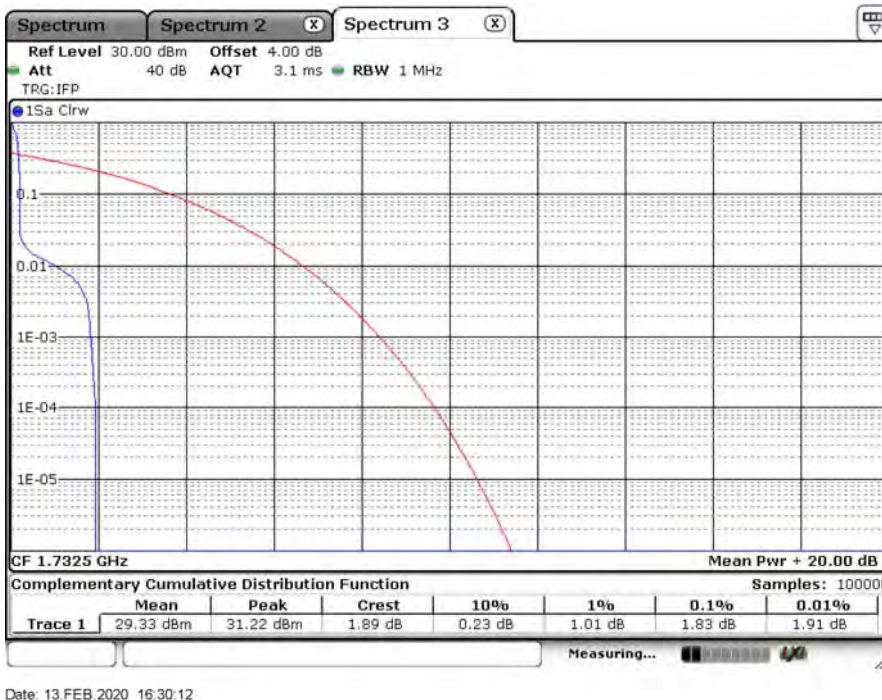


Date: 13 FEB 2020 16:29:52

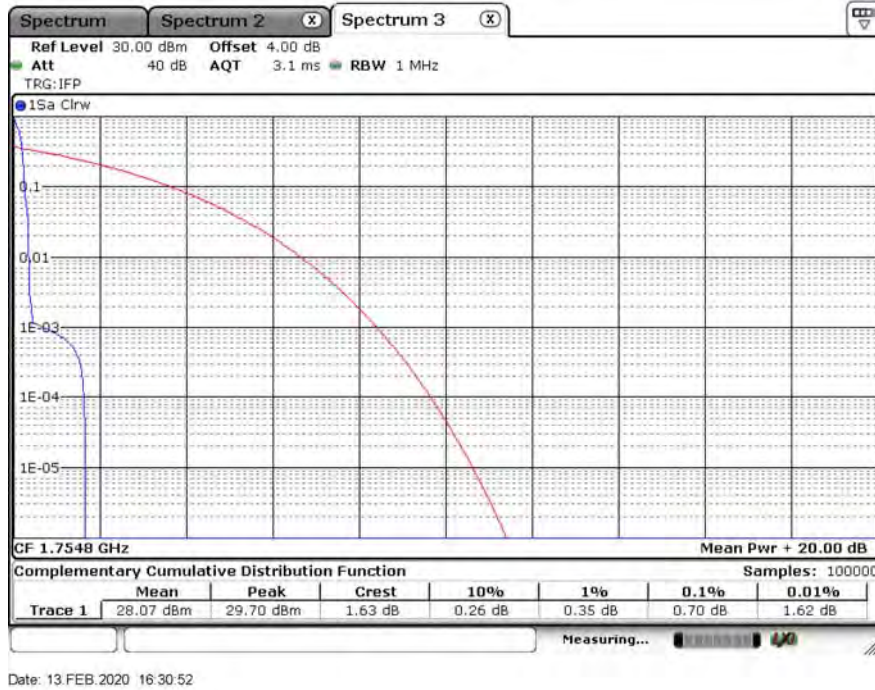
B4\_3.75K\_CH20175\_BPSK\_1RB0



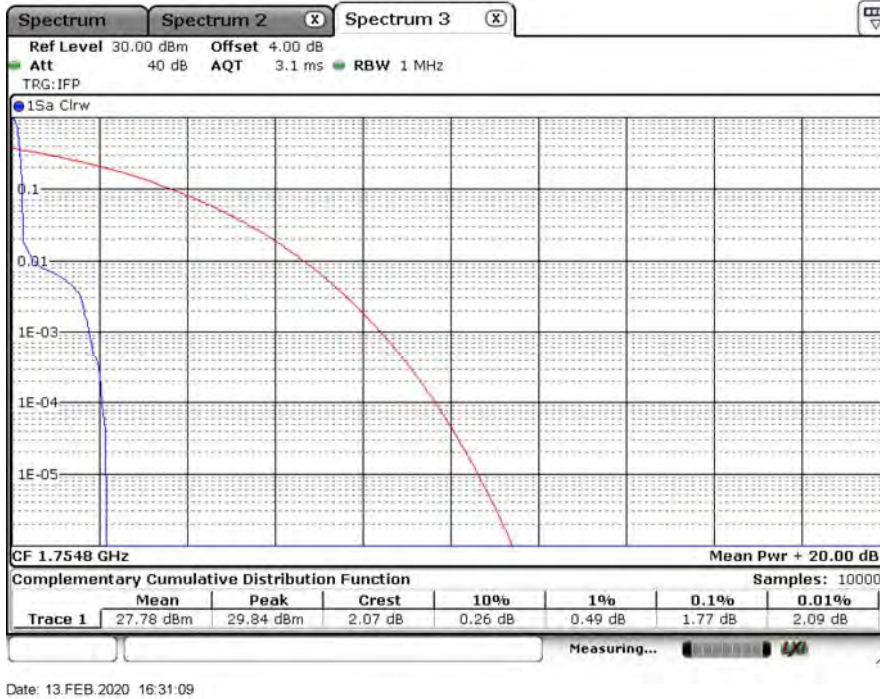
B4\_3.75K\_CH20175\_QPSK\_1RB0



B4\_3.75K\_CH20398\_BPSK\_1RB47

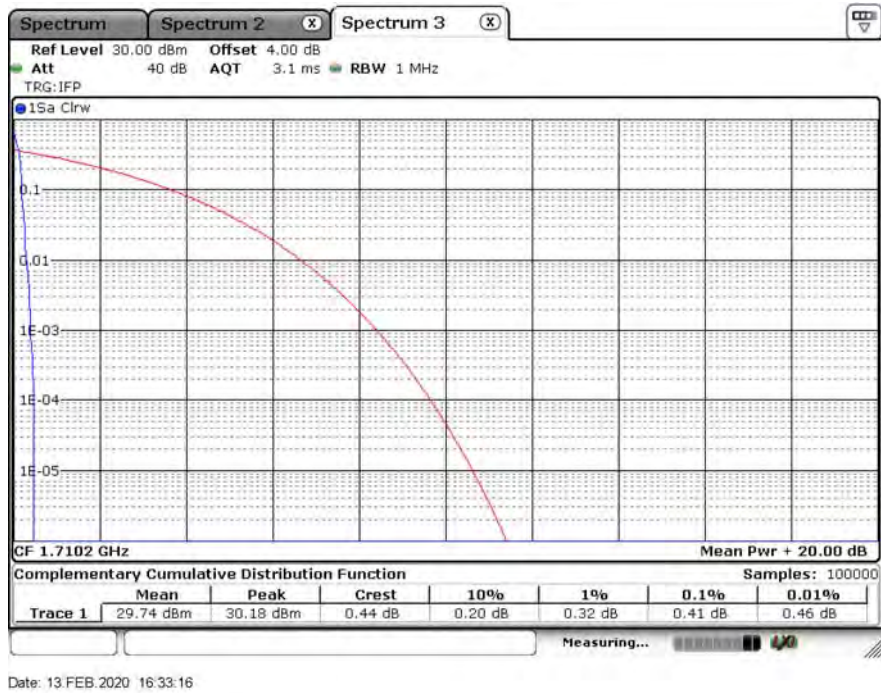


B4\_3.75K\_CH20398\_QPSK\_1RB47

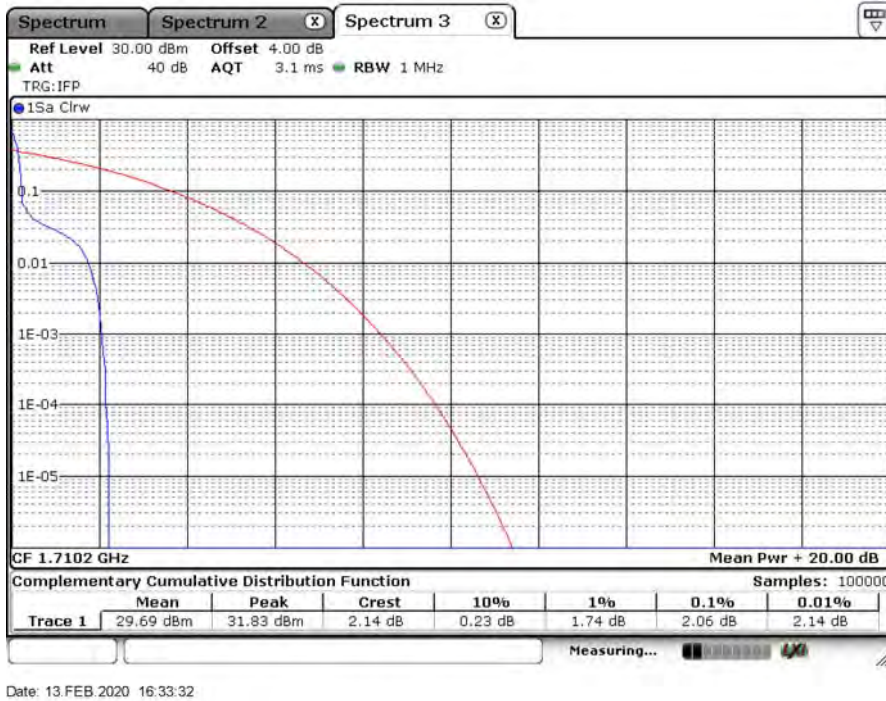




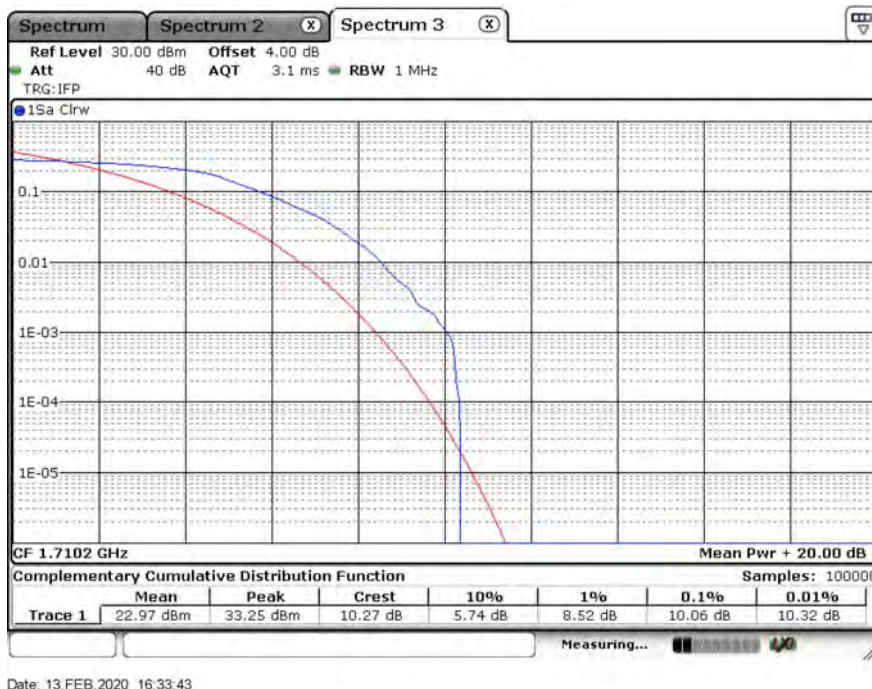
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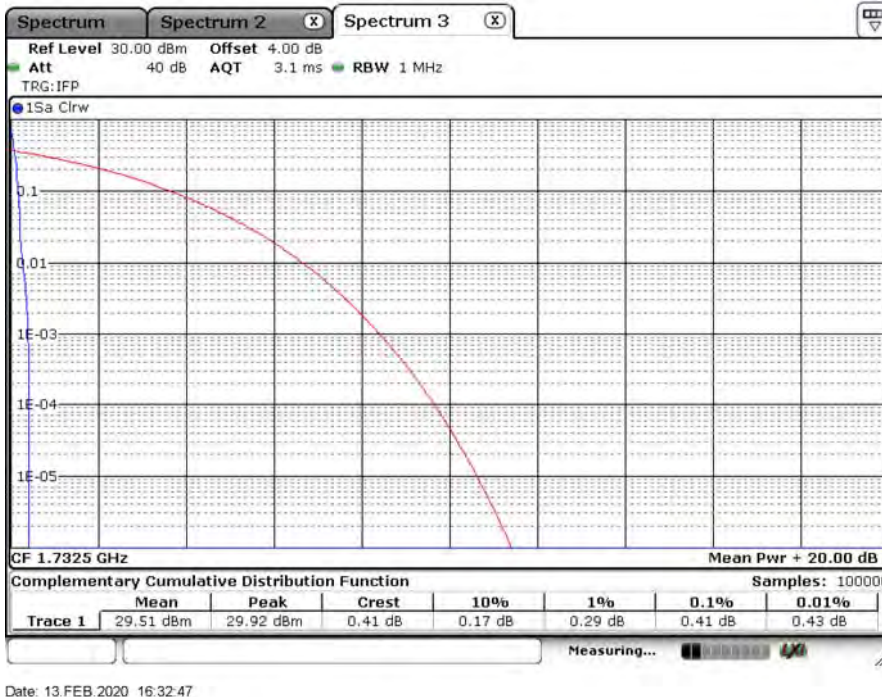
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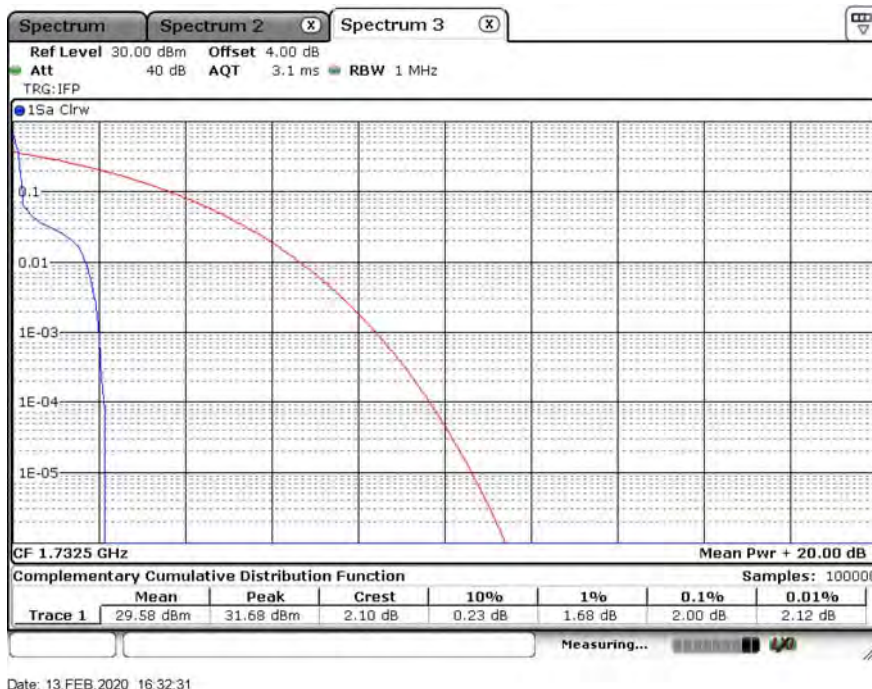
### B4\_15K\_CH19952\_QPSK\_12RB0



### B4\_15K\_CH20175\_BPSK\_1RB0



### B4\_15K\_CH20175\_QPSK\_1RB0



### B4\_15K\_CH20175\_QPSK\_12RB0

