ULCA 66B												
Ch.	PCC					SCC					Power	
	BW [㎒]	Freq. [㎒]	Ch.	RB	RB Offset	BW [㎒]	Freq. [㎒]	Ch.	RB	RB Offset	(㏈m)	(W)
Low	5	1 712.5	131997	25	0	5	1 717.3	132045	25	0	20.85	0.122
	5	1 712.8	132000	25	0	10	1 720.0	132072	50	0	20.73	0.118
	10	1 715.0	132022	50	0	5	1 722.2	132094	25	0	20.72	0.118
	5	1 713.0	132002	25	0	15	1 722.3	132095	75	0	20.85	0.122
	15	1 717.5	132047	75	0	5	1 726.8	132140	25	0	**20.95**	**0.124**
	10	1 715.0	132022	50	0	10	1 724.9	132121	50	0	20.91	0.123
Middle	5	1 752.6	132398	25	0	5	1 757.4	132446	25	0	20.74	0.119
	5	1 750.3	132375	25	0	10	1 757.5	132447	50	0	20.79	0.120
	10	1 752.5	132397	50	0	5	1 759.7	132469	25	0	20.74	0.119
	5	1 748.1	132353	25	0	15	1 757.4	132446	75	0	20.80	0.120
	15	1 752.6	132398	75	0	5	1 761.9	132491	25	0	**20.87**	**0.122**
	10	1 750.1	132373	50	0	10	1 760.0	132472	50	0	20.86	0.122
High	5	1 772.7	132599	25	0	5	1 777.5	132647	25	0	20.84	0.121
	5	1 767.8	132550	25	0	10	1 775.0	132622	50	0	20.85	0.121
	10	1 770.0	132572	50	0	5	1 777.2	132644	25	0	20.86	0.122
	5	1 763.2	132504	25	0	15	1 772.5	132597	75	0	20.87	0.122
	15	1 767.7	132549	75	0	5	1 777.0	132642	25	0	**20.93**	**0.124**
	10	1 765.1	132523	50	0	10	1 775.0	132622	50	0	20.90	0.123

Note;

QPSK Modulation with Full RB

ULCA 66B												
Ch.	PCC					SCC					Power	
	BW [㎒]	Freq. [㎒]	Ch.	RB	RB Offset	BW [㎒]	Freq. [㎒]	Ch.	RB	RB Offset	(㏈m)	(W)
Low	5	1 712.5	131997	25	0	5	1 717.3	132045	25	0	19.04	0.080
	5	1 712.8	132000	25	0	10	1 720.0	132072	50	0	19.04	0.080
	10	1 715.0	132022	50	0	5	1 722.2	132094	25	0	19.02	0.080
	5	1 713.0	132002	25	0	15	1 722.3	132095	75	0	19.05	0.080
	15	1 717.5	132047	75	0	5	1 726.8	132140	25	0	**19.07**	**0.081**
	10	1 715.0	132022	50	0	10	1 724.9	132121	50	0	18.99	0.079
Middle	5	1 752.6	132398	25	0	5	1 757.4	132446	25	0	19.20	0.083
	5	1 750.3	132375	25	0	10	1 757.5	132447	50	0	19.19	0.083
	10	1 752.5	132397	50	0	5	1 759.7	132469	25	0	19.17	0.083
	5	1 748.1	132353	25	0	15	1 757.4	132446	75	0	19.12	0.082
	15	1 752.6	132398	75	0	5	1 761.9	132491	25	0	**19.20**	**0.083**
	10	1 750.1	132373	50	0	10	1 760.0	132472	50	0	19.13	0.082
High	5	1 772.7	132599	25	0	5	1 777.5	132647	25	0	19.30	0.085
	5	1 767.8	132550	25	0	10	1 775.0	132622	50	0	19.31	0.085
	10	1 770.0	132572	50	0	5	1 777.2	132644	25	0	19.30	0.085
	5	1 763.2	132504	25	0	15	1 772.5	132597	75	0	19.27	0.084
	15	1 767.7	132549	75	0	5	1 777.0	132642	25	0	**19.34**	**0.086**
	10	1 765.1	132523	50	0	10	1 775.0	132622	50	0	19.26	0.084

Note;

16QAM Modulation with Full RB

ULCA 66C												
Ch.	PCC					SCC					Power	
	BW [㎒]	Freq. [㎒]	Ch.	RB	RB Offset	BW [㎒]	Freq. [㎒]	Ch.	RB	RB Offset	(㏈m)	(W)
Low	10	1 715.3	132025	1	49	15	1 727.3	132145	1	0	22.72	0.187
	15	1 717.5	132047	1	74	10	1 729.5	132167	1	0	22.71	0.186
	10	1 715.5	132027	1	49	20	1 729.9	132171	1	0	**22.77**	**0.189**
	20	1 720.0	132072	1	99	10	1 734.4	132216	1	0	22.73	0.187
	15	1 717.5	132047	1	74	15	1 732.5	132197	1	0	22.66	0.184
	15	1 717.8	132050	1	74	20	1 734.9	132221	1	0	22.58	0.181
	20	1 720.0	132072	1	99	15	1 737.1	132243	1	0	22.68	0.185
	20	1 720.0	132072	1	99	5	1 731.7	132189	1	0	22.74	0.188
	5	1 713.3	132005	1	24	20	1 725.0	132122	1	0	22.71	0.187
	20	1 720.0	132072	1	99	20	1 739.8	132270	1	0	22.62	0.183
Middle	10	1 747.9	132351	1	49	15	1 759.9	132471	1	0	22.51	0.178
	15	1 750.1	132373	1	74	10	1 762.1	132493	1	0	22.53	0.179
	10	1 745.6	132328	1	49	20	1 760.0	132472	1	0	**22.75**	**0.188**
	20	1 750.1	132373	1	99	10	1 764.5	132517	1	0	22.50	0.178
	15	1 747.5	132347	1	74	15	1 762.5	132497	1	0	22.74	0.188
	15	1 745.3	132325	1	74	20	1 762.4	132496	1	0	22.71	0.187
	20	1 747.6	132348	1	99	15	1 764.7	132519	1	0	22.71	0.187
	20	1 752.5	132397	1	99	5	1 764.2	132514	1	0	22.63	0.183
	5	1 745.8	132330	1	24	20	1 757.5	132447	1	0	22.69	0.186
	20	1 745.1	132323	1	99	20	1 764.9	132521	1	0	22.50	0.178
High	10	1 760.5	132477	1	49	15	1 772.5	132597	1	0	22.45	0.176
	15	1 762.7	132499	1	74	10	1 774.7	132619	1	0	22.38	0.173
	10	1 755.6	132428	1	49	20	1 770.0	132572	1	0	**22.65**	**0.184**
	20	1 760.1	132473	1	99	10	1 774.5	132617	1	0	22.55	0.180
	15	1 757.5	132447	1	74	15	1 772.5	132597	1	0	22.44	0.175
	15	1 752.9	132401	1	74	20	1 770.0	132572	1	0	22.43	0.175
	20	1 755.1	132423	1	99	15	1 772.2	132594	1	0	22.22	0.167
	20	1 765.0	132522	1	99	5	1 776.7	132639	1	0	22.65	0.184
	20	1 758.3	132455	1	24	20	1 770.0	132572	1	0	22.72	0.187
	20	1 750.2	132374	1	99	20	1 770.0	132572	1	0	22.59	0.181

Note;

QPSK Modulation with 1 RB

ULCA 66C												
Ch.	PCC					SCC					Power	
	BW [㎒]	Freq. [㎒]	Ch.	RB	RB Offset	BW [㎒]	Freq. [㎒]	Ch.	RB	RB Offset	(㏈m)	(W)
Low	10	1 715.3	132025	1	49	15	1 727.3	132145	1	0	21.63	0.146
	15	1 717.5	132047	1	74	10	1 729.5	132167	1	0	21.26	0.134
	10	1 715.5	132027	1	49	20	1 729.9	132171	1	0	**21.64**	**0.146**
	20	1 720.0	132072	1	99	10	1 734.4	132216	1	0	21.05	0.127
	15	1 717.5	132047	1	74	15	1 732.5	132197	1	0	21.33	0.136
	15	1 717.8	132050	1	74	20	1 734.9	132221	1	0	21.25	0.133
	20	1 720.0	132072	1	99	15	1 737.1	132243	1	0	21.01	0.126
	20	1 720.0	132072	1	99	5	1 731.7	132189	1	0	21.11	0.129
	5	1 713.3	132005	1	24	20	1 725.0	132122	1	0	21.51	0.142
	20	1 720.0	132072	1	99	20	1 739.8	132270	1	0	21.39	0.138
Middle	10	1 747.9	132351	1	49	15	1 759.9	132471	1	0	21.63	0.145
	15	1 750.1	132373	1	74	10	1 762.1	132493	1	0	21.32	0.136
	10	1 745.6	132328	1	49	20	1 760.0	132472	1	0	**21.63**	**0.146**
	20	1 750.1	132373	1	99	10	1 764.5	132517	1	0	21.18	0.131
	15	1 747.5	132347	1	74	15	1 762.5	132497	1	0	21.36	0.137
	15	1 745.3	132325	1	74	20	1 762.4	132496	1	0	21.43	0.139
	20	1 747.6	132348	1	99	15	1 764.7	132519	1	0	21.32	0.136
	20	1 752.5	132397	1	99	5	1 764.2	132514	1	0	20.75	0.119
	5	1 745.8	132330	1	24	20	1 757.5	132447	1	0	21.48	0.140
	20	1 745.1	132323	1	99	20	1 764.9	132521	1	0	21.56	0.143
High	10	1 760.5	132477	1	49	15	1 772.5	132597	1	0	20.68	0.117
	15	1 762.7	132499	1	74	10	1 774.7	132619	1	0	20.76	0.119
	10	1 755.6	132428	1	49	20	1 770.0	132572	1	0	21.12	0.129
	20	1 760.1	132473	1	99	10	1 774.5	132617	1	0	20.95	0.124
	15	1 757.5	132447	1	74	15	1 772.5	132597	1	0	20.65	0.116
	15	1 752.9	132401	1	74	20	1 770.0	132572	1	0	21.01	0.126
	20	1 755.1	132423	1	99	15	1 772.2	132594	1	0	20.82	0.121
	20	1 765.0	132522	1	99	5	1 776.7	132639	1	0	21.12	0.129
	20	1 758.3	132455	1	24	20	1 770.0	132572	1	0	20.98	0.125
	20	1 750.2	132374	1	99	20	1 770.0	132572	1	0	**21.18**	**0.131**

Note;

16QAM Modulation with 1 RB

ULCA 66C													
Ch.	PCC					SCC					Power	
	BW [㎒]	Freq. [㎒]	Ch.	RB	RB Offset	BW [㎒]	Freq. [㎒]	Ch.	RB	RB Offset	(㏈m)	(W)
Low	10	1 715.3	132025	50	0	15	1 727.3	132145	75	0	21.02	0.127
	15	1 717.5	132047	75	0	10	1 729.5	132167	50	0	21.07	0.128
	10	1 715.5	132027	50	0	20	1 729.9	132171	100	0	21.05	0.127
	20	1 720.0	132072	100	0	10	1 734.4	132216	50	0	20.99	0.126
	15	1 717.5	132047	75	0	15	1 732.5	132197	75	0	20.99	0.126
	15	1 717.8	132050	75	0	20	1 734.9	132221	100	0	20.96	0.125
	20	1 720.0	132072	100	0	15	1 737.1	132243	75	0	**21.82**	**0.152**
	20	1 720.0	132072	100	0	5	1 731.7	132189	25	0	20.92	0.124
	5	1 713.3	132005	25	0	20	1 725.0	132122	100	0	20.95	0.124
	20	1 720.0	132072	100	0	20	1 739.8	132270	100	0	20.93	0.124
Middle	10	1 747.9	132351	50	0	15	1 759.9	132471	75	0	20.84	0.121
	15	1 750.1	132373	75	0	10	1 762.1	132493	50	0	20.87	0.122
	10	1 745.6	132328	50	0	20	1 760.0	132472	100	0	20.91	0.123
	20	1 750.1	132373	100	0	10	1 764.5	132517	50	0	20.91	0.123
	15	1 747.5	132347	75	0	15	1 762.5	132497	75	0	21.00	0.126
	15	1 745.3	132325	75	0	20	1 762.4	132496	100	0	21.01	0.126
	20	1 747.6	132348	100	0	15	1 764.7	132519	75	0	**21.12**	**0.129**
	20	1 752.5	132397	100	0	5	1 764.2	132514	25	0	20.83	0.121
	5	1 745.8	132330	25	0	20	1 757.5	132447	100	0	20.89	0.123
	20	1 745.1	132323	100	0	20	1 764.9	132521	100	0	20.80	0.120
High	10	1 760.5	132477	50	0	15	1 772.5	132597	75	0	20.84	0.121
	15	1 762.7	132499	75	0	10	1 774.7	132619	50	0	20.84	0.121
	10	1 755.6	132428	50	0	20	1 770.0	132572	100	0	20.82	0.121
	20	1 760.1	132473	100	0	10	1 774.5	132617	50	0	20.85	0.122
	15	1 757.5	132447	75	0	15	1 772.5	132597	75	0	20.81	0.120
	15	1 752.9	132401	75	0	20	1 770.0	132572	100	0	20.30	0.107
	20	1 755.1	132423	100	0	15	1 772.2	132594	75	0	**20.94**	**0.124**
	20	1 765.0	132522	100	0	5	1 776.7	132639	25	0	20.82	0.121
	20	1 758.3	132455	25	0	20	1 770.0	132572	100	0	20.94	0.124
	20	1 750.2	132374	100	0	20	1 770.0	132572	100	0	20.84	0.121

Note;

QPSK Modulation with Full RB

ULCA 66C													
Ch.	PCC					SCC					Power	
	BW [㎒]	Freq. [㎒]	Ch.	RB	RB Offset	BW [㎒]	Freq. [㎒]	Ch.	RB	RB Offset	(㏈m)	(W)
Low	10	1 715.3	132025	50	0	15	1 727.3	132145	75	0	19.33	0.086
	15	1 717.5	132047	75	0	10	1 729.5	132167	50	0	19.36	0.086
	10	1 715.5	132027	50	0	20	1 729.9	132171	100	0	19.36	0.086
	20	1 720.0	132072	100	0	10	1 734.4	132216	50	0	19.27	0.084
	15	1 717.5	132047	75	0	15	1 732.5	132197	75	0	19.47	0.088
	15	1 717.8	132050	75	0	20	1 734.9	132221	100	0	19.40	0.087
	20	1 720.0	132072	100	0	15	1 737.1	132243	75	0	**19.60**	**0.091**
	20	1 720.0	132072	100	0	5	1 731.7	132189	25	0	19.26	0.084
	5	1 713.3	132005	25	0	20	1 725.0	132122	100	0	19.35	0.086
	20	1 720.0	132072	100	0	20	1 739.8	132270	100	0	19.34	0.086
Middle	10	1 747.9	132351	50	0	15	1 759.9	132471	75	0	19.43	0.088
	15	1 750.1	132373	75	0	10	1 762.1	132493	50	0	19.40	0.087
	10	1 745.6	132328	50	0	20	1 760.0	132472	100	0	19.39	0.087
	20	1 750.1	132373	100	0	10	1 764.5	132517	50	0	19.40	0.087
	15	1 747.5	132347	75	0	15	1 762.5	132497	75	0	19.39	0.087
	15	1 745.3	132325	75	0	20	1 762.4	132496	100	0	19.40	0.087
	20	1 747.6	132348	100	0	15	1 764.7	132519	75	0	**19.68**	**0.093**
	20	1 752.5	132397	100	0	5	1 764.2	132514	25	0	19.34	0.086
	5	1 745.8	132330	25	0	20	1 757.5	132447	100	0	19.32	0.086
	20	1 745.1	132323	100	0	20	1 764.9	132521	100	0	19.41	0.087
High	10	1 760.5	132477	50	0	15	1 772.5	132597	75	0	19.30	0.085
	15	1 762.7	132499	75	0	10	1 774.7	132619	50	0	19.14	0.082
	10	1 755.6	132428	50	0	20	1 770.0	132572	100	0	19.35	0.086
	20	1 760.1	132473	100	0	10	1 774.5	132617	50	0	19.18	0.083
	15	1 757.5	132447	75	0	15	1 772.5	132597	75	0	19.29	0.085
	15	1 752.9	132401	75	0	20	1 770.0	132572	100	0	19.28	0.085
	20	1 755.1	132423	100	0	15	1 772.2	132594	75	0	19.37	0.086
	20	1 765.0	132522	100	0	5	1 776.7	132639	25	0	19.19	0.083
	20	1 758.3	132455	25	0	20	1 770.0	132572	100	0	19.18	0.083
	20	1 750.2	132374	100	0	20	1 770.0	132572	100	0	**19.42**	**0.088**

Note;

16QAM Modulation with Full RB

4. Occupied Bandwidth

4.1. Limit

CFR 47, Section FCC §2.1049 and IC RSS-Gen Issue 5 6.7.

4.2. Test Procedure

FCC

The test follows section 5.4.4 of ANSI C63.26-2015.

a. The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be set wide enough to capture all modulation. products including the emission skirts (typically a span of 1.5 × OBW is sufficient).
b. The nominal IF filter 3 dB bandwidth (RBW) shall be in the range of 1 % to 5 % of the anticipated OBW, and the VBW shall be set ≥ 3 × RBW.
c. Set the reference level of the instrument as required to prevent the signal amplitude from exceeding the maximum spectrum analyzer input mixer level for linear operation. See guidance provided in 4.2.3.
d. Set the detection mode to peak, and the trace mode to max-hold.
e. If the instrument does not have a 99 % OBW function, recover the trace data points and sum directly in linear power terms. Place the recovered amplitude data points, beginning at the lowest frequency, in a running sum until 0.5 % of the total is reached. Record that frequency as the lower OBW frequency. Repeat the process until 99.5 % of the total is reached and record that frequency as the upper OBW frequency. The 99 % power OBW can be determined by computing the difference these two frequencies.
f. The OBW shall be reported and plot(s) of the measuring instrument display shall be provided with the test report. The frequency and amplitude axis and scale shall be clearly labeled. Tabular data can be reported in addition to the plot(s).

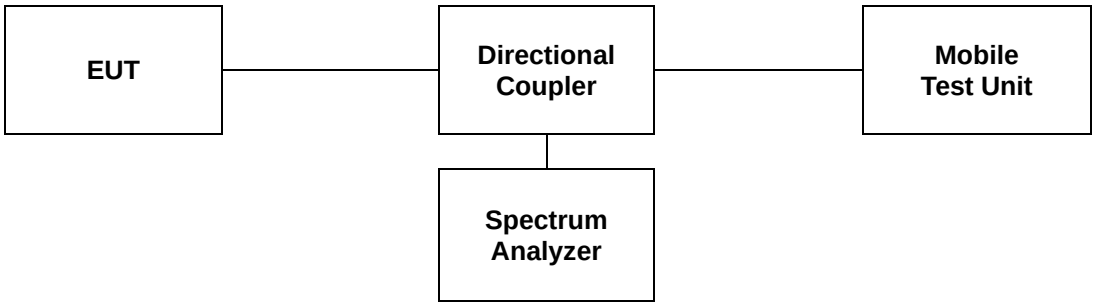
IC

The following conditions shall be observed for measuring the occupied bandwidth and x dB bandwidth:

• The transmitter shall be operated at its maximum carrier power measured under normal test conditions.
• The span of the spectrum analyzer shall be set large enough to capture all products of the modulation process, including the emission skirts, around the carrier frequency, but small enough to avoid having other emissions (e.g. on adjacent channels) within the span.
• The detector of the spectrum analyzer shall be set to “Sample”. However, a peak, or peak hold, may be used in place of the sampling detector since this usually produces a wider bandwidth than the actual bandwidth (worst-case measurement). Use of a peak hold (or “Max Hold”) may be necessary to determine the occupied / x dB bandwidth if the device is not transmitting continuously.
• The resolution bandwidth (RBW) shall be in the range of 1 % to 5 % of the actual occupied / x dB bandwidth and the video bandwidth (VBW) shall not be smaller than three times the RBW value. Video averaging is not permitted.

Note: It may be necessary to repeat the measurement a few times until the RBW and VBW are in compliance with the above requirement.

For the 99 % emission bandwidth, the trace data points are recovered and directly summed in linear power level terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5 % of the total is reached, and that frequency recorded. The process is repeated for the highest frequency data points (starting at the highest frequency, at the right side of the span, and going down in frequency). This frequency is then recorded. The difference between the two recorded frequencies is the occupied bandwidth (or the 99 % emission bandwidth).



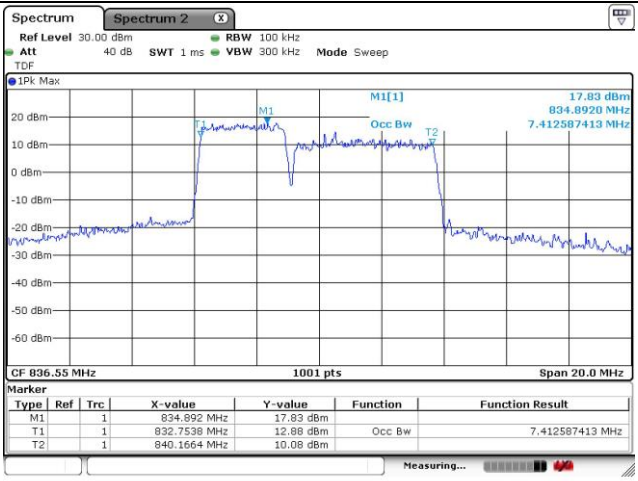
4.3 Test Results

Ambient temperature : (23 ± 1) ℃
Relative humidity : 47 % R.H.

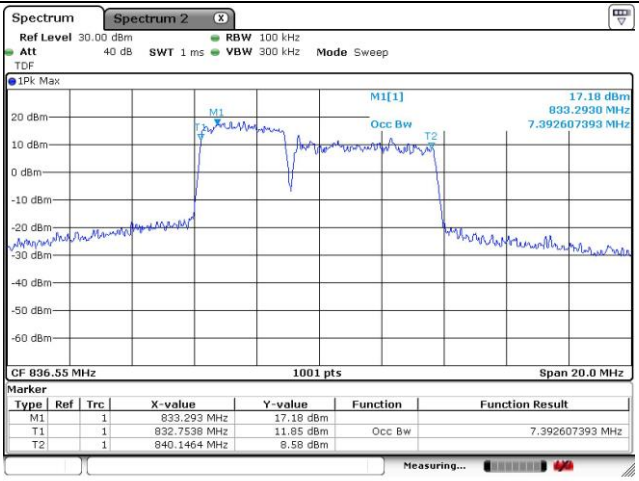
Band	PCC			SCC			Occupied Bandwidth (㎒)	
	BW (㎒)	Frequency (㎒)	Channel	BW (㎒)	Frequency (㎒)	Channel	QPSK	16QAM
5B	3	834.1	20501	5	838.0	20540	7.413	7.393
	5	835.0	20510	3	838.9	20549	7.453	7.453
	5	831.8	20478	10	839.0	20550	13.846	13.876
	10	834.0	20500	5	841.2	20572	13.966	13.936
	10	831.6	20476	10	841.5	20575	18.741	18.701
7C	10	2 525.6	21006	20	2 540.0	21150	28.112	28.052
	20	2 530.1	21051	10	2 544.5	21195	28.172	28.112
	15	2 530.1	21051	15	2 542.1	21171	28.172	28.232
	15	2 530.1	21051	10	2 542.1	21171	23.077	23.077
	15	2 525.3	21003	20	2 542.4	21174	32.867	32.937
	20	2 527.6	21026	15	2 544.7	21197	32.937	32.797
	20	2 525.1	21001	20	2 544.9	21199	37.722	37.642
66B	5	1 752.6	132398	5	1 757.4	132446	9.171	9.251
	5	1 750.3	132375	10	1 757.5	132447	13.906	13.876
	10	1 752.5	132397	5	1 759.7	132469	13.936	13.876
	5	1 748.1	132353	15	1 757.4	132446	18.182	18.182
	15	1 752.6	132398	5	1 761.9	132491	18.182	18.182
	10	1 750.1	132373	10	1 760.0	132472	18.821	18.741
66C	10	1 747.9	132351	15	1 759.9	132471	23.027	22.977
	15	1 750.1	132373	10	1 762.1	132493	23.027	23.027
	10	1 745.6	132328	20	1 760.0	132472	28.112	27.932
	20	1 750.1	132373	10	1 764.5	132517	28.052	27.932
	15	1 747.5	132347	15	1 762.5	132497	28.172	28.172
	15	1 745.3	132325	20	1 762.4	132496	32.727	32.727
	20	1 747.6	132348	15	1 764.7	132519	32.937	32.727
	20	1 752.5	132397	5	1 764.2	132514	22.777	22.777
	5	1 745.8	132330	20	1 757.5	132447	22.677	22.677
	20	1 745.1	132323	20	1 764.9	132521	37.642	37.562

- Test plots

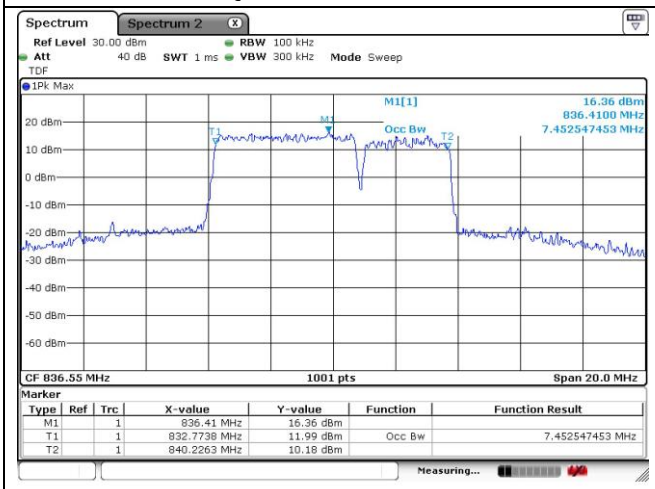
ULCA 5B



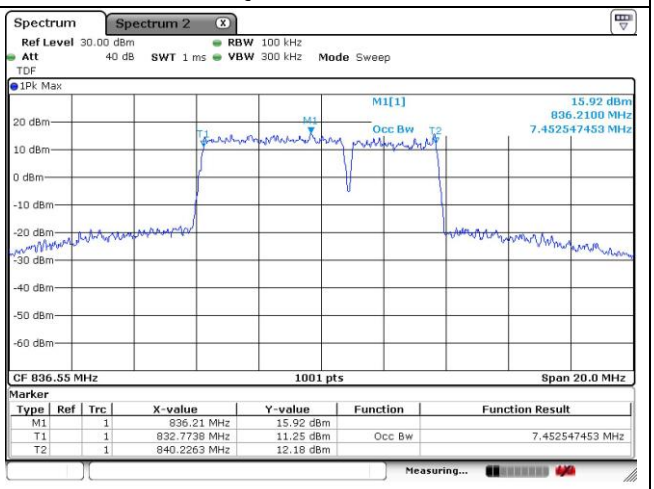
3 ㎒ + 5 ㎒ QPSK Middle Channel - Full RB



3 ㎒ + 5 ㎒ 16QAM Middle Channel - Full RB



5 ㎒ + 3 ㎒ QPSK Middle Channel - Full RB



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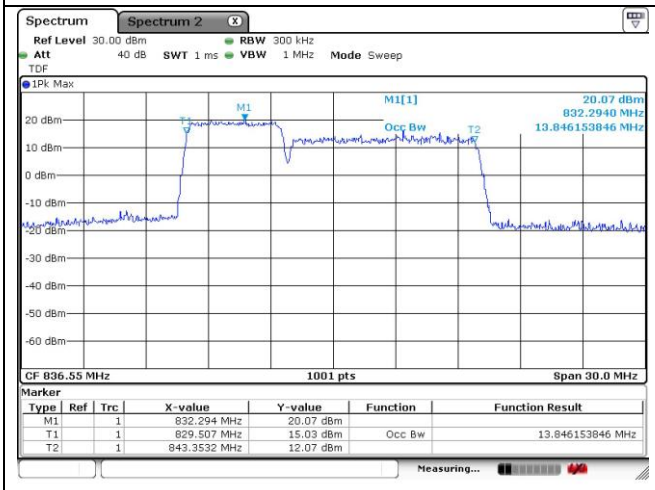
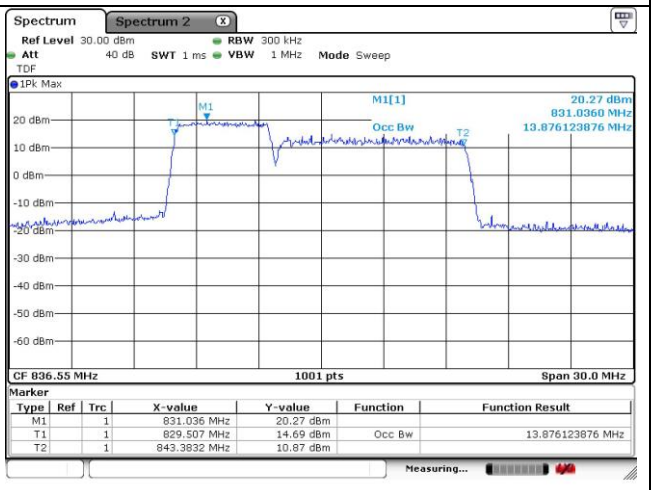
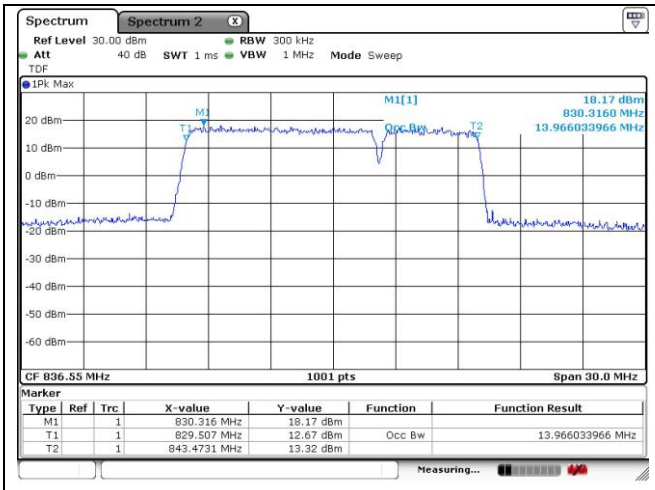


5 ㎒ + 10 ㎒ QPSK Middle Channel - Full RB

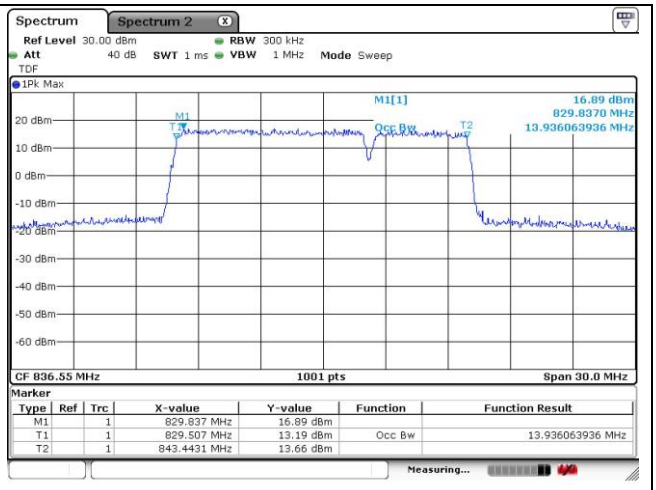


5 ㎒ + 10 ㎒ 16QAM Middle Channel - Full RB

ULCA 5B



10 ㎒ + 5 ㎒ QPSK Middle Channel - Full RB



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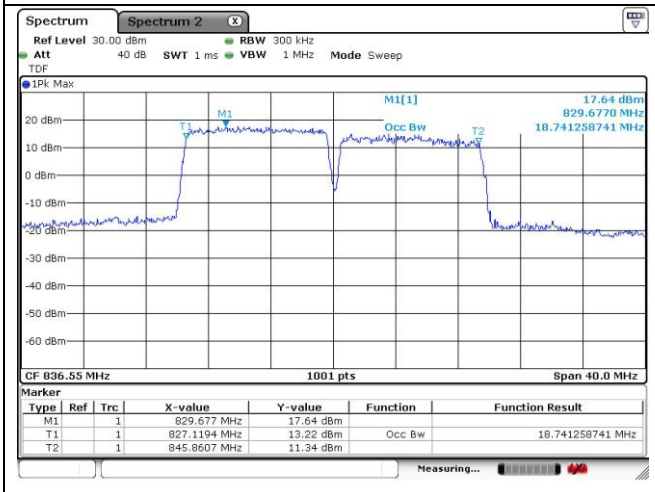

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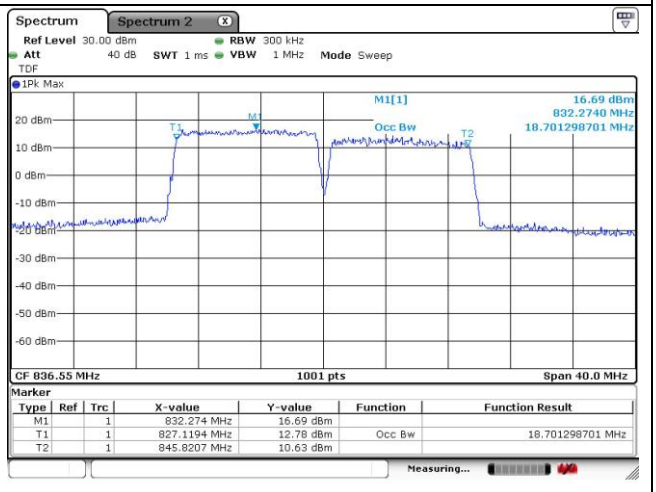
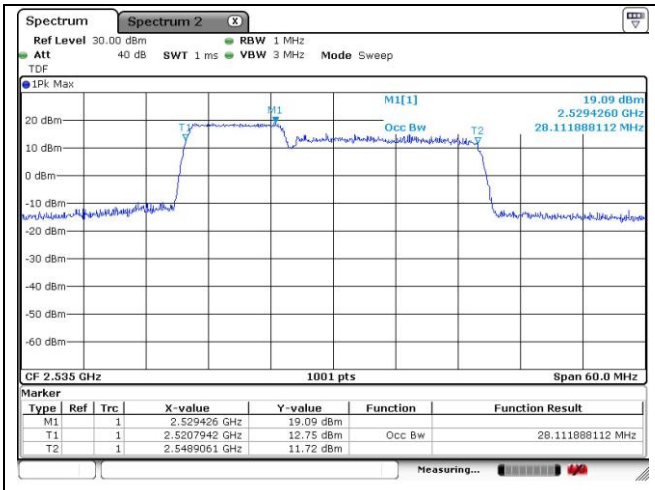
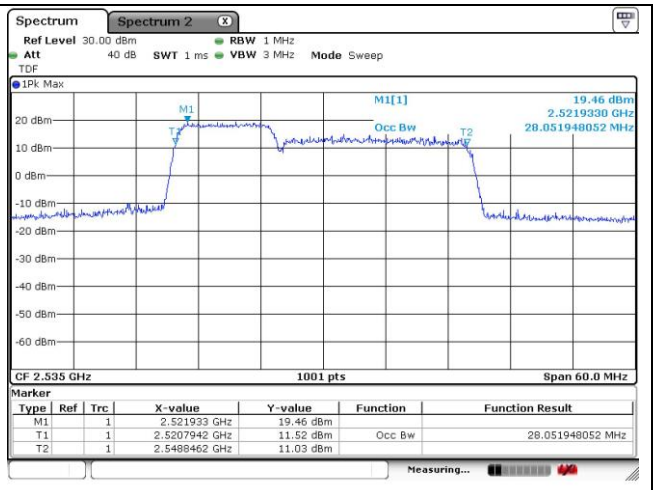


10 ㎒ + 10 ㎒ 16QAM Middle Channel - Full RB

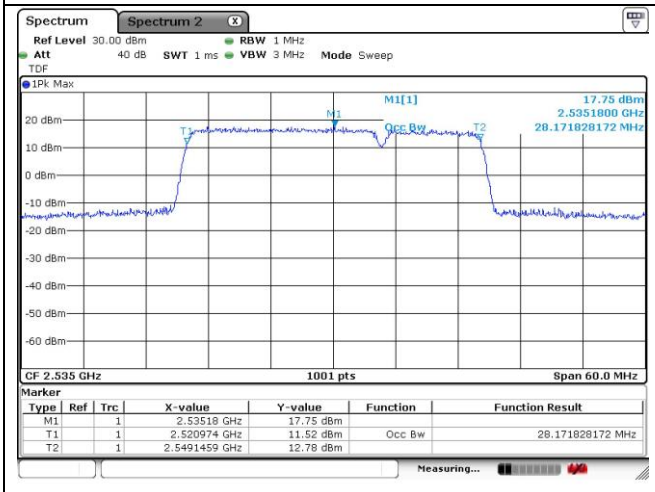
ULCA 7C



10 ㎒ + 20 ㎒ QPSK Middle Channel - Full RB



10 ㎒ + 20 ㎒ 16QAM Middle Channel - Full RB



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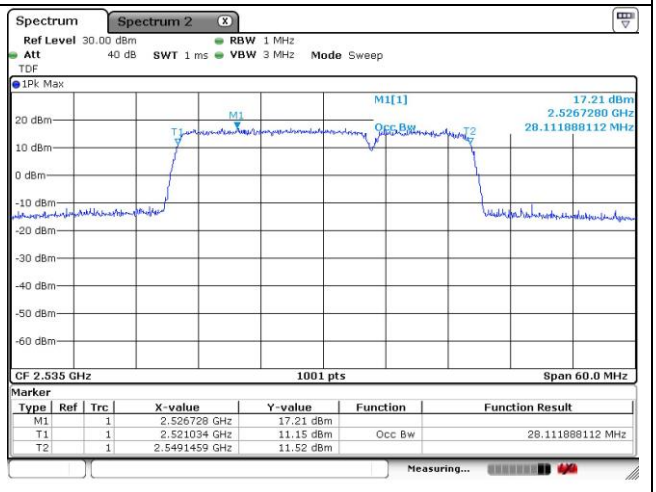

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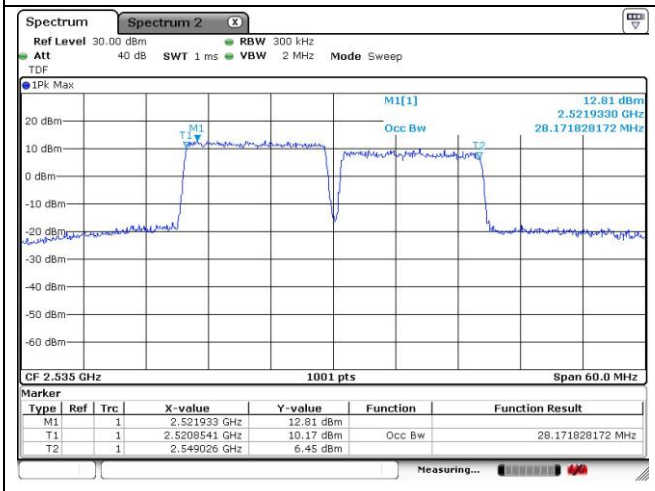
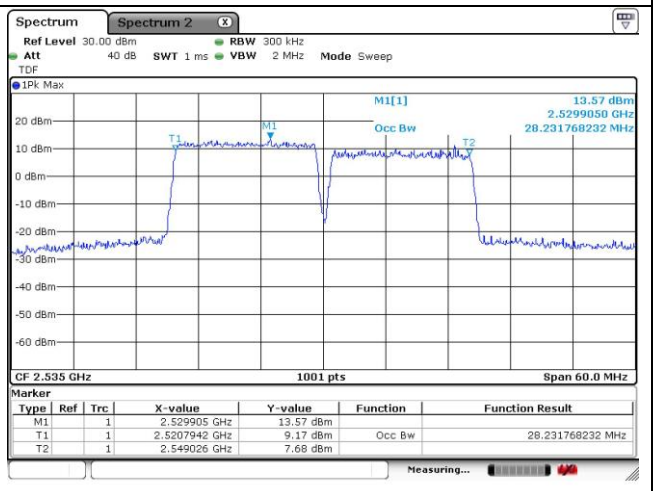
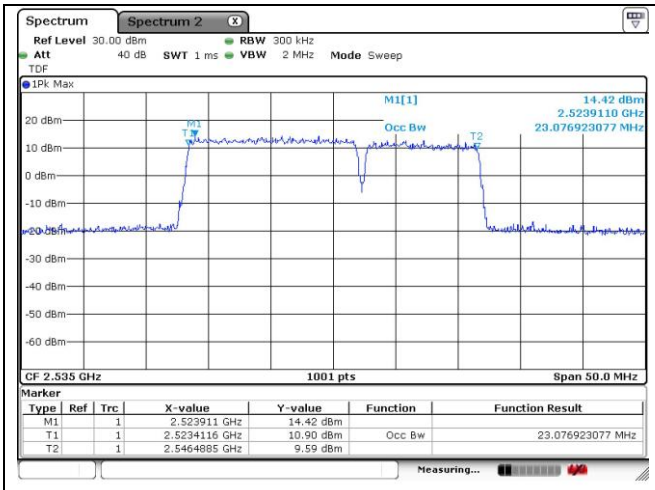


15 ㎒ + 15 ㎒ QPSK Middle Channel - Full RB



15 ㎒ + 15 ㎒ 16QAM Middle Channel - Full RB

ULCA 7C



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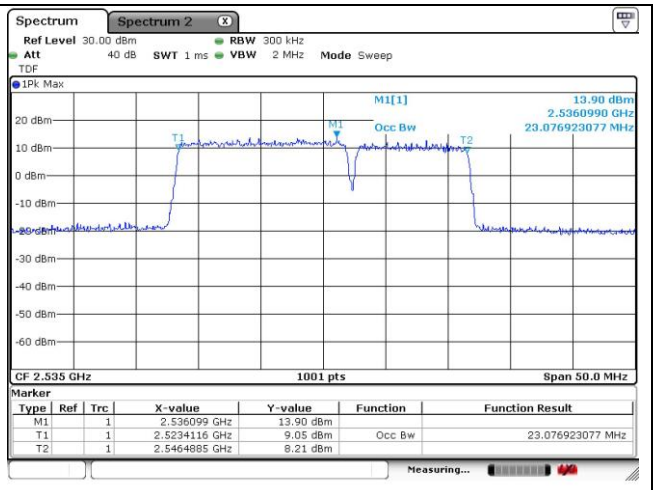

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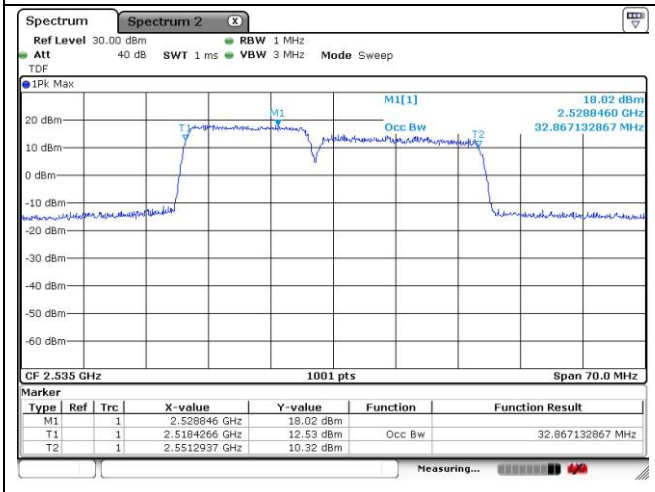

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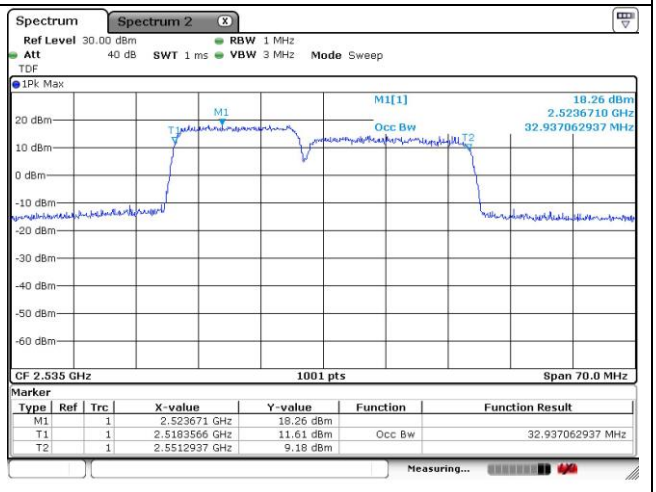

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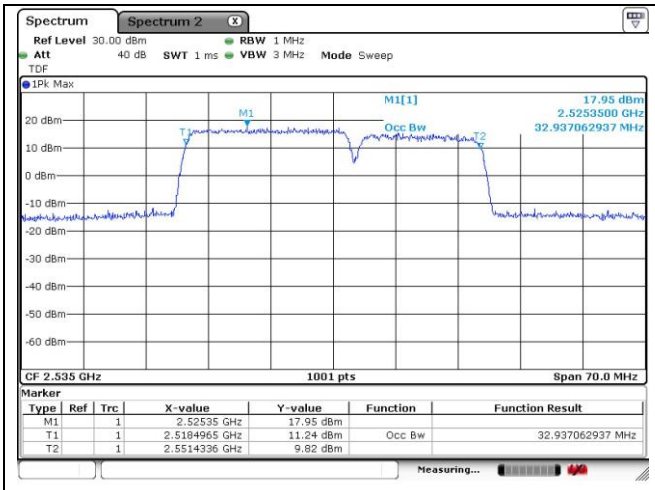
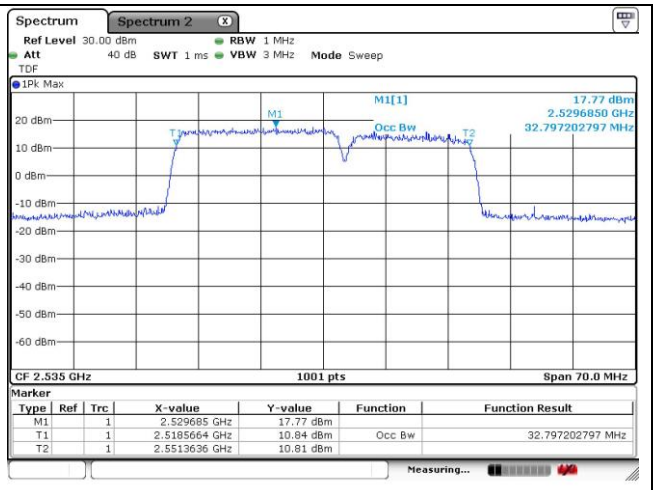
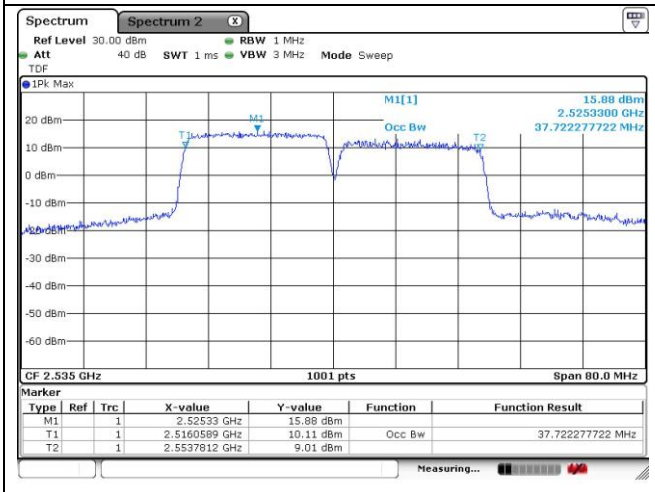
ULCA 7C



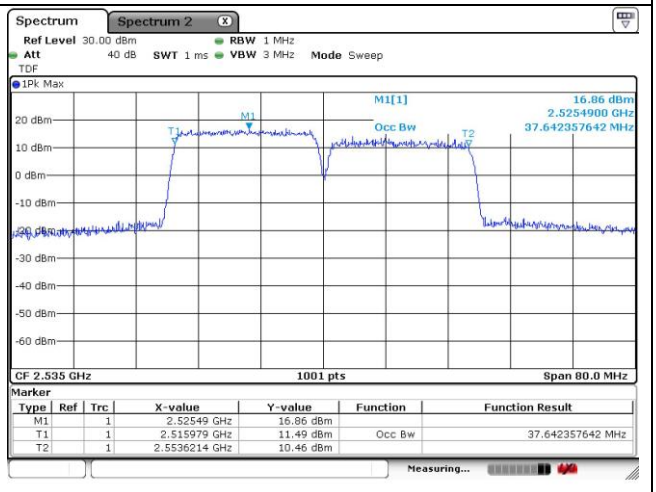
20 ㎒ + 15 ㎒ QPSK Middle Channel - Full RB



20 ㎒ + 15 ㎒ 16QAM Middle Channel - Full RB

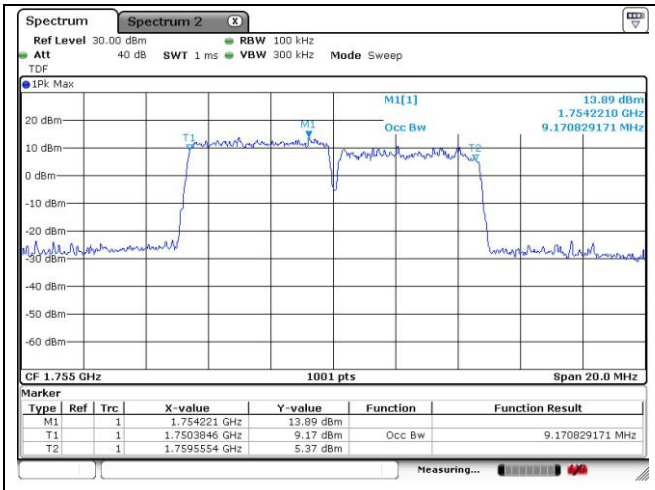


20 ㎒ + 20 ㎒ QPSK Middle Channel - Full RB

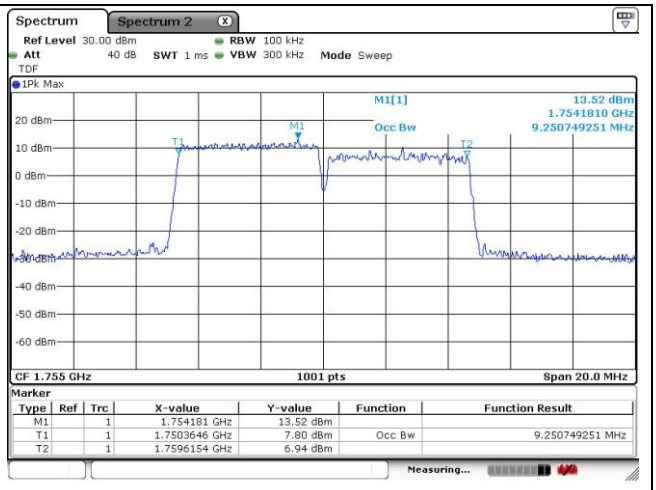


20 ㎒ + 20 ㎒ 16QAM Middle Channel - Full RB

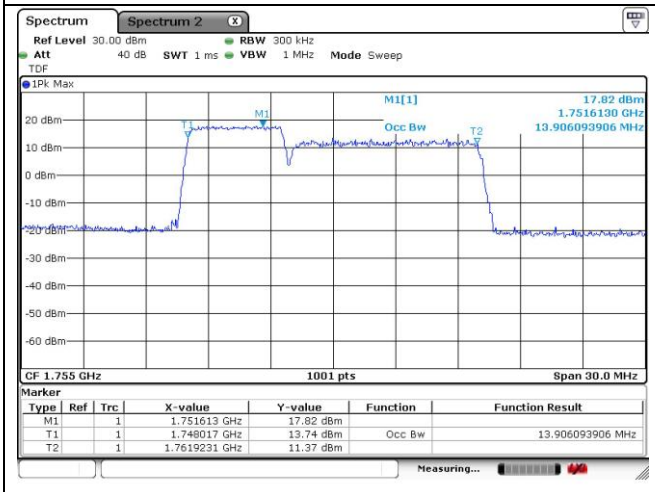
ULCA 66B



5 ㎒ + 5 ㎒ QPSK Middle Channel - Full RB



5 ㎒ + 5 ㎒ 16QAM Middle Channel - Full RB



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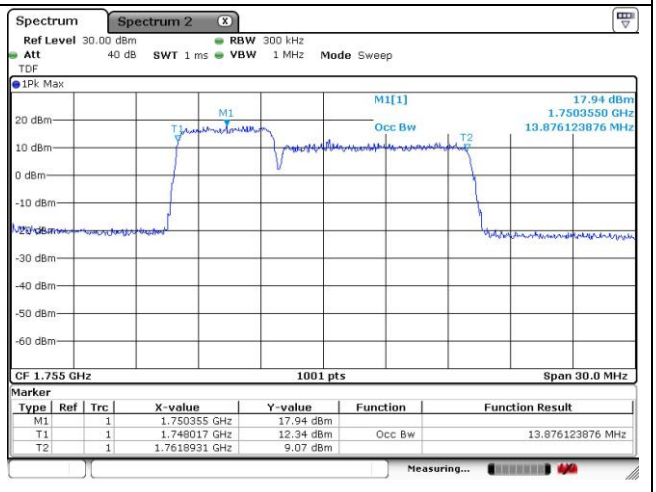

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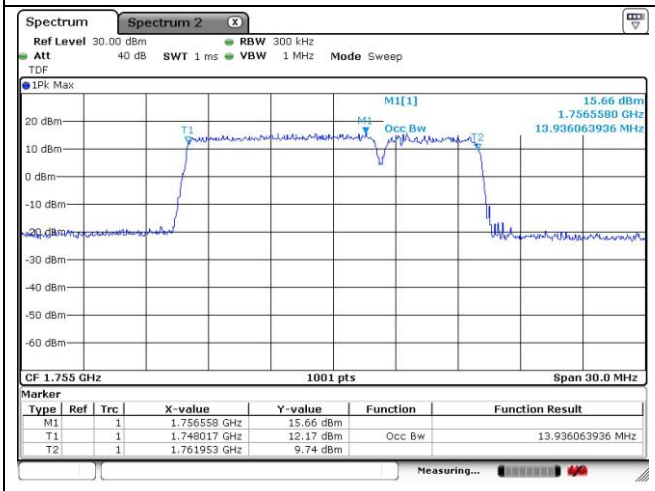

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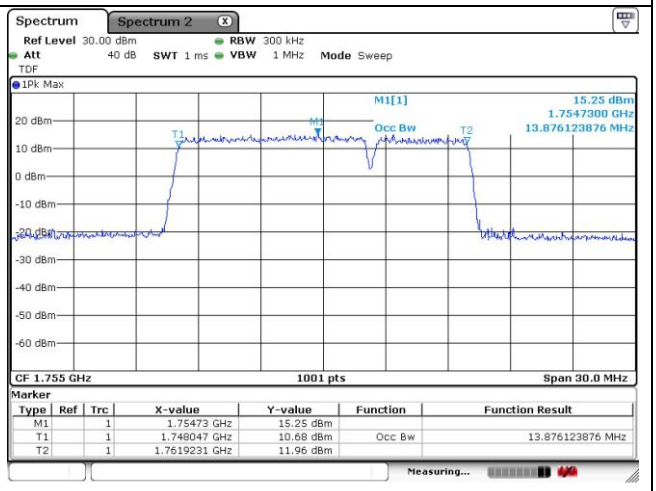

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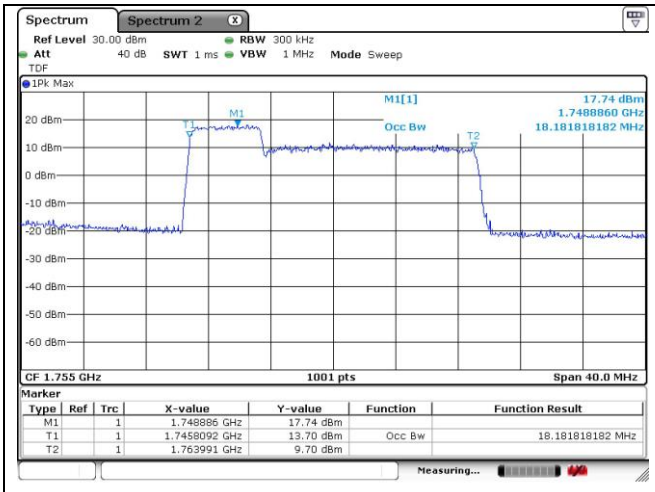
ULCA 66B



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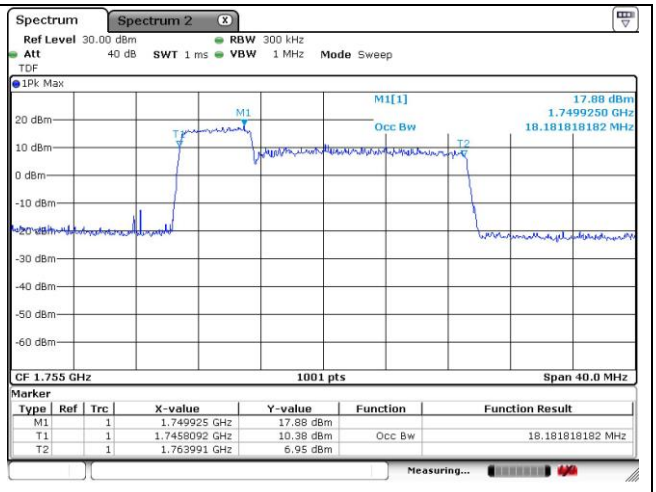

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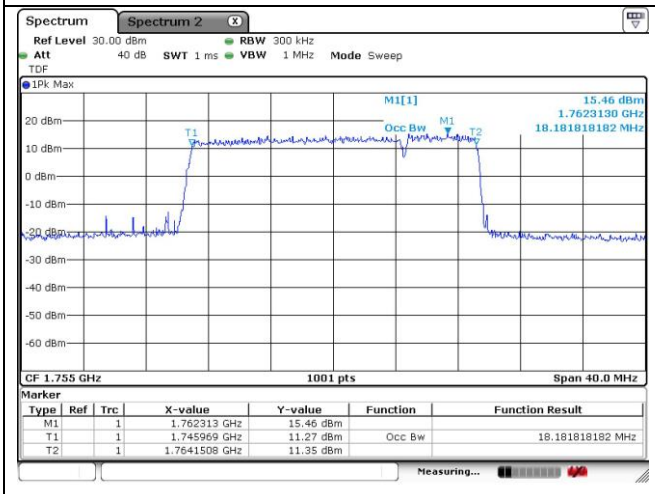

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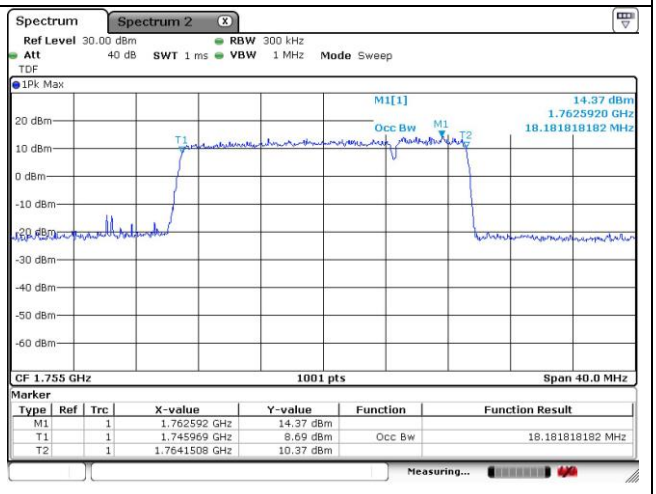

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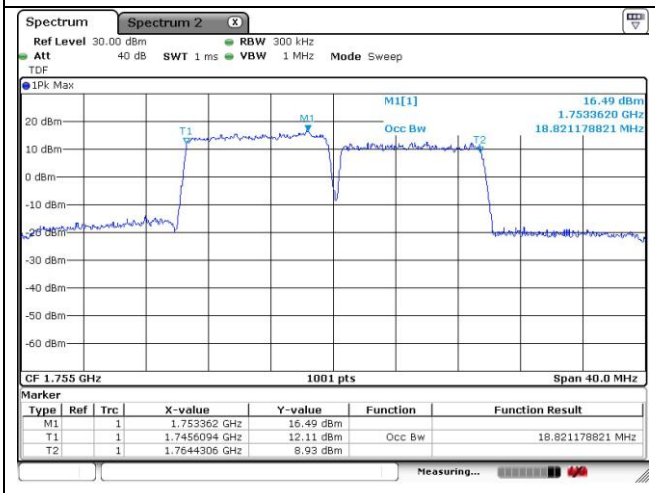

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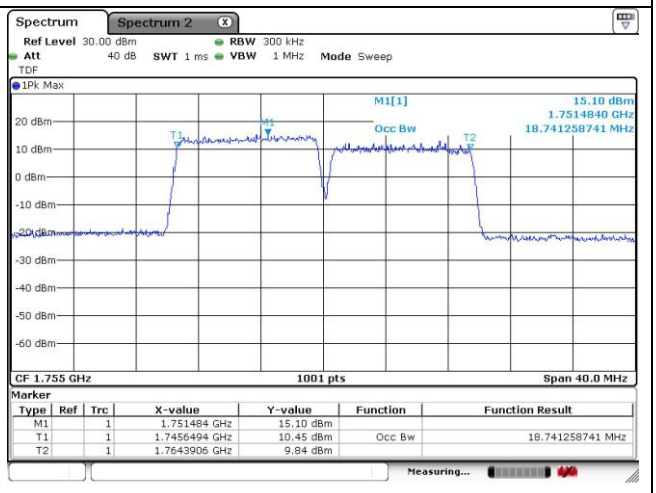

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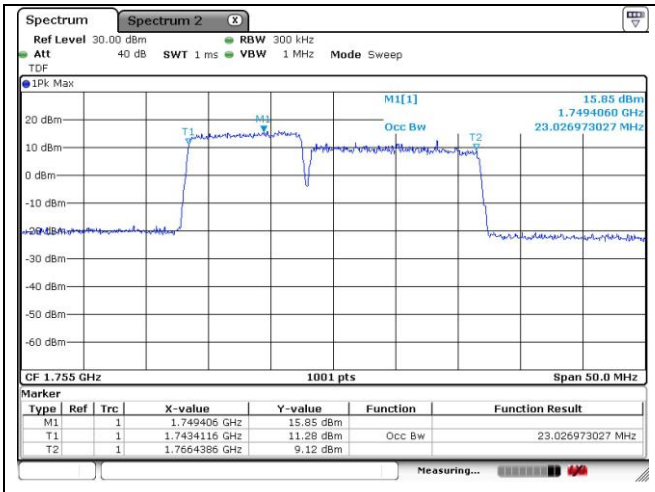
ULCA 66C



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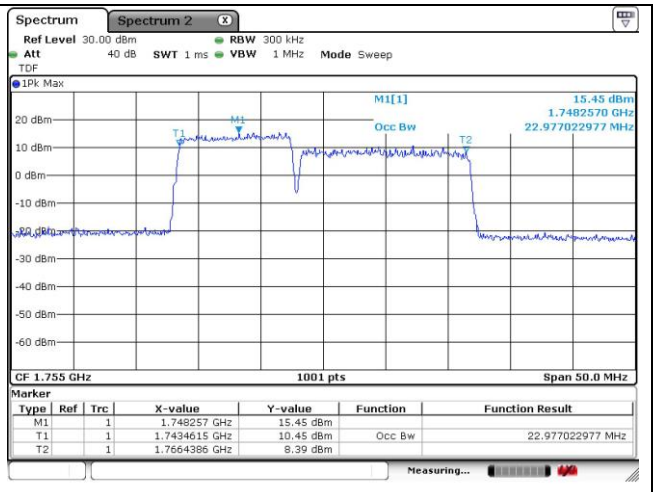

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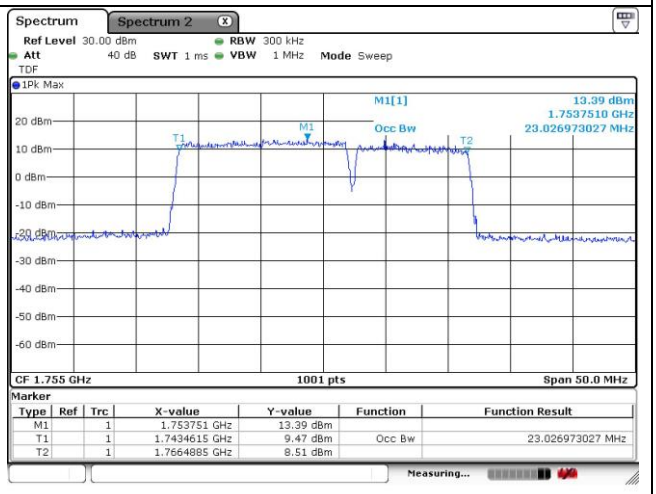
15 ㎒ + 10 ㎒ QPSK Middle Channel - Full RB



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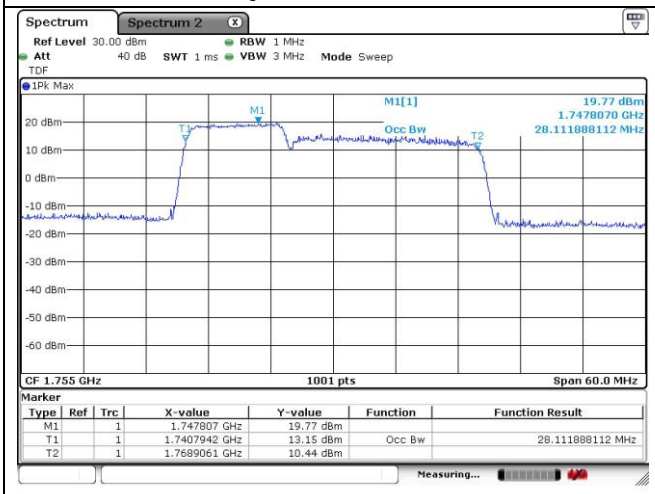

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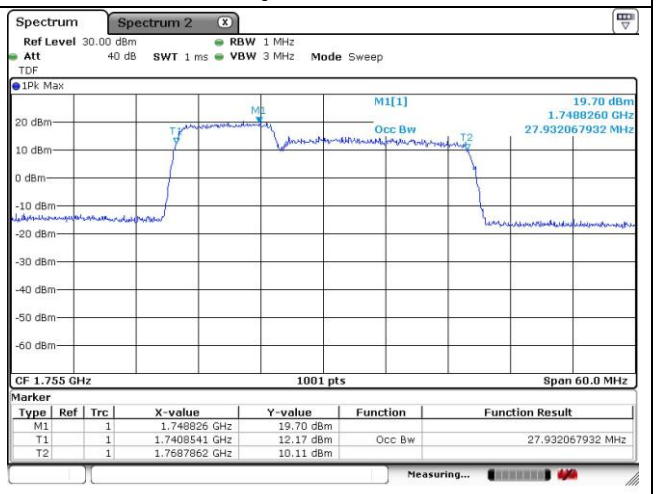
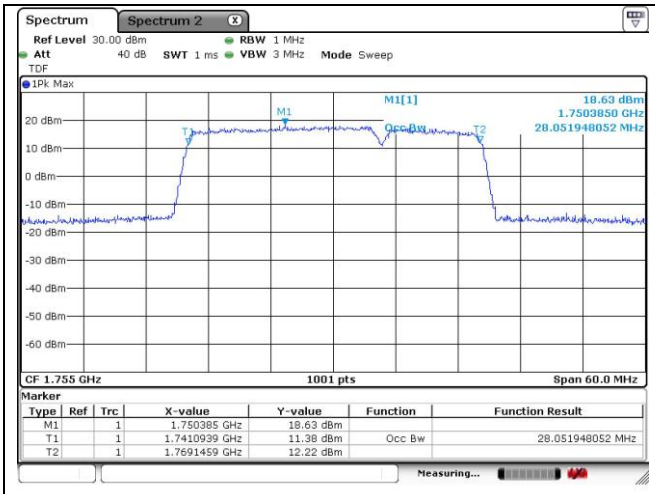


10 ㎒ + 20 ㎒ 16QAM Middle Channel - Full RB

ULCA 66C



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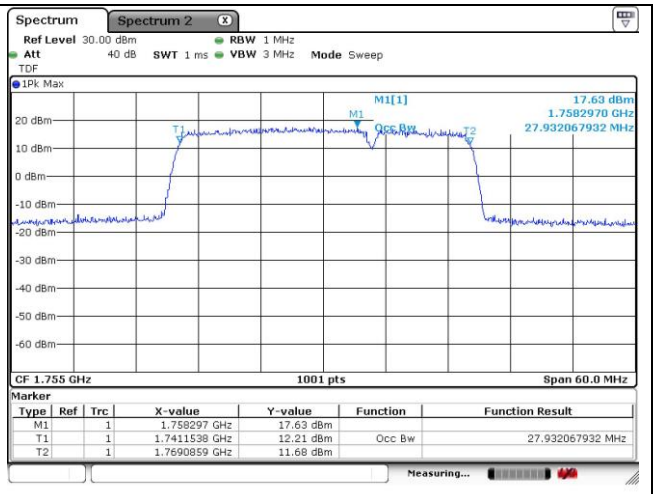

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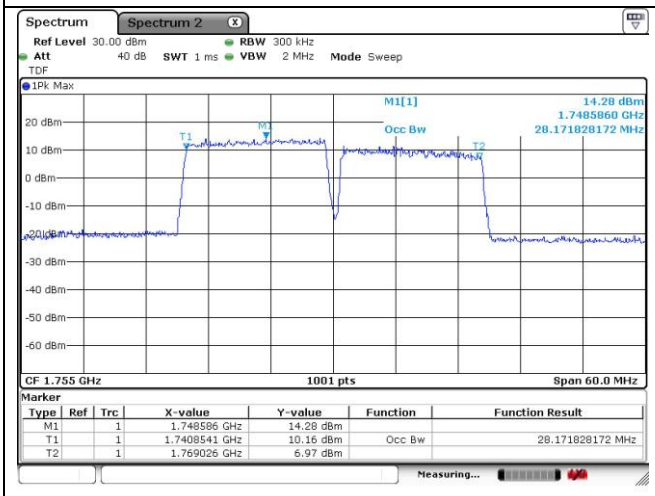
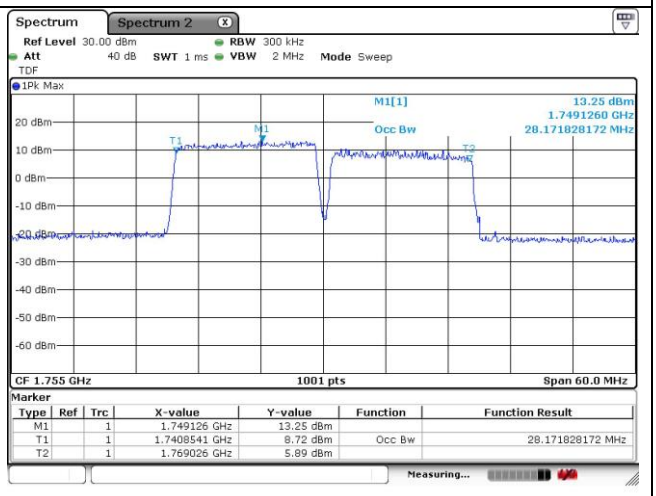
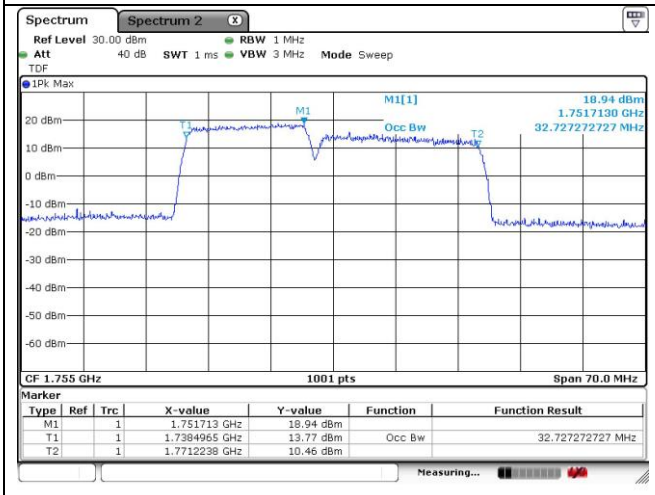


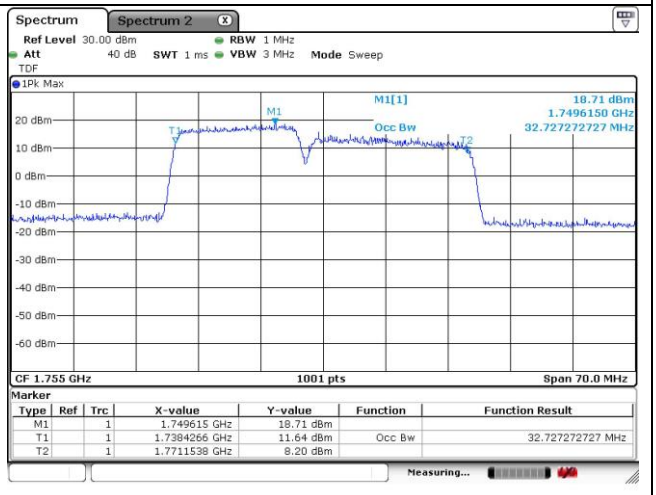
15 ㎒ + 15 ㎒ QPSK Middle Channel - Full RB



15 ㎒ + 15 ㎒ 16QAM Middle Channel - Full RB

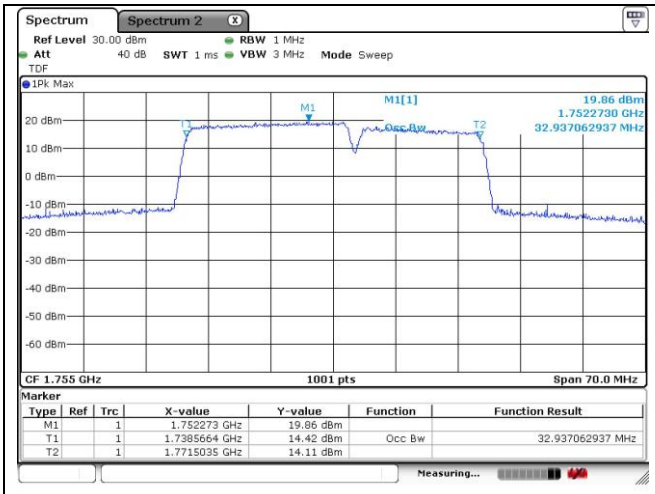


15 ㎒ + 20 ㎒ QPSK Middle Channel - Full RB

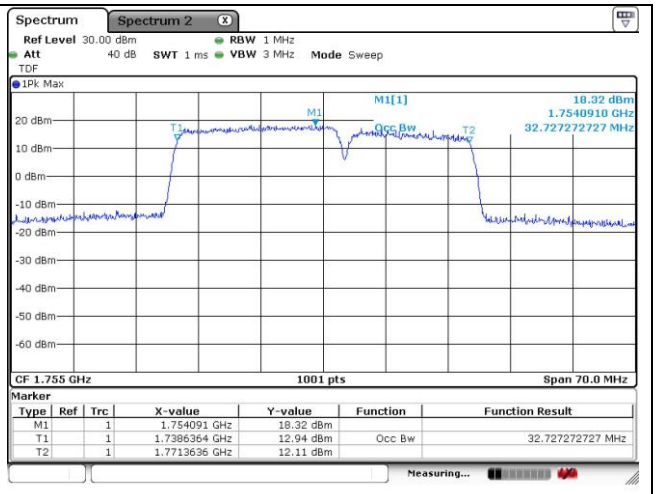


15 ㎒ + 20 ㎒ 16QAM Middle Channel - Full RB

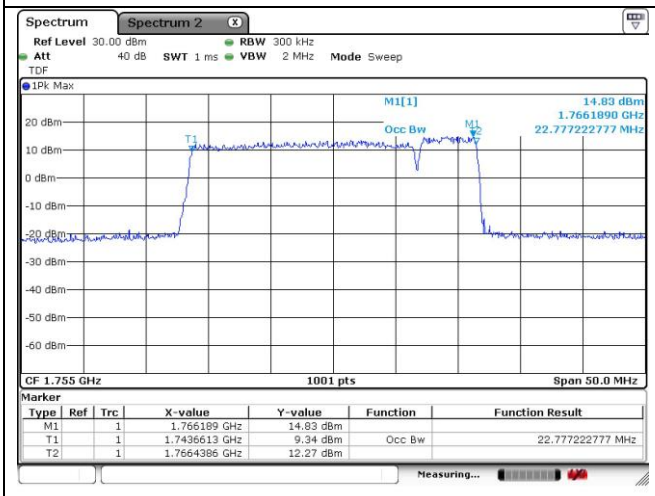
ULCA 66C



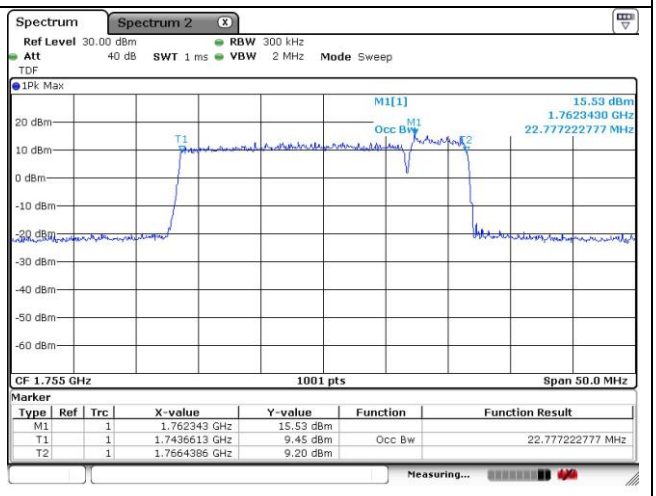
20 ㎒ + 15 ㎒ QPSK Middle Channel - Full RB



20 ㎒ + 15 ㎒ 16QAM Middle Channel - Full RB

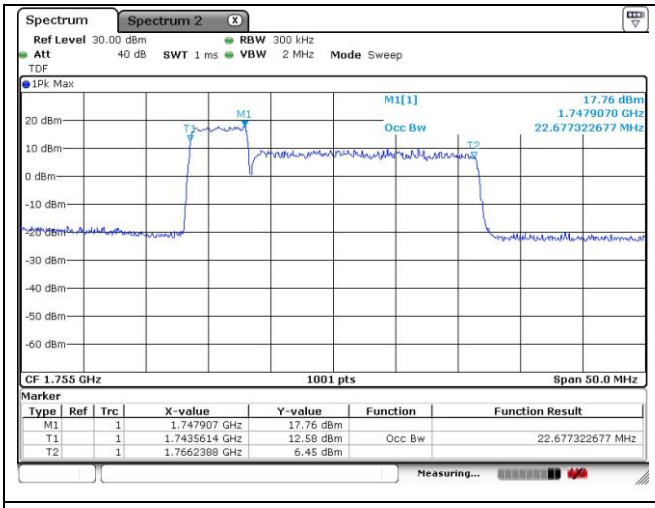


20 ㎒ + 5 ㎒ QPSK Middle Channel - Full RB

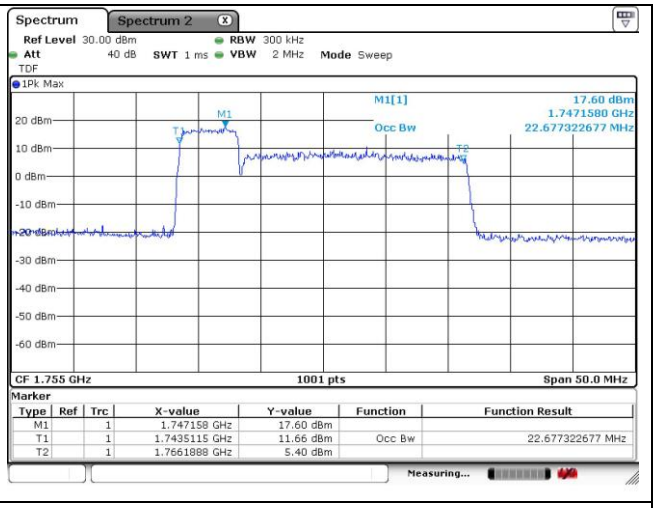


20 ㎒ + 5 ㎒ 16QAM Middle Channel - Full RB

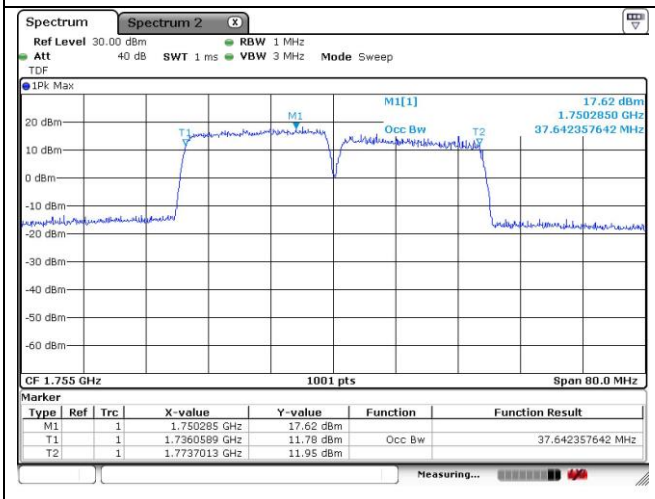
ULCA 66C



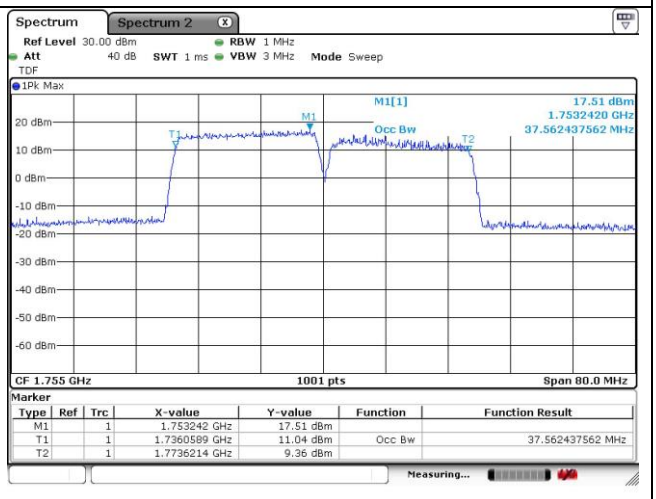
5 ㎒ + 20 ㎒ QPSK Middle Channel - Full RB



5 ㎒ + 20 ㎒ 16QAM Middle Channel - Full RB



20 ㎒ + 20 ㎒ QPSK Middle Channel - Full RB



20 ㎒ + 20 ㎒ 16QAM Middle Channel - Full RB

5. Peak-Average Ratio

5.1. Limit

FCC

- §22.913(d) Measurement of the ERP of Cellular base transmitters and repeaters must be made using an average power measurement technique. The peak-to-average ratio (PAR) of the transmission must not exceed 13 ㏈.

- §27.50(d)(5), power measurements for transmissions by stations authorized under this section may be made either in accordance with a Commission-approved average power technique or in compliance with paragraph (d)(6) of this section. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 ㏈.

IC

- RSS-132 Issue 3

5.4, the peak-to-average power ratio (PAPR) of the transmitter shall not exceed 13 ㏈ for more than 0.1% of the time using a signal corresponding to the highest PAPR during periods of continuous transmission.

- RSS-139 Issue 3

6.5, the peak to average power ratio (PAPR) of the equipment shall not exceed 13 ㏈ for more than 0.1 % of the time, using a signal that corresponds to the highest PAPR during periods of continuous transmission.

- RSS-199 Issue 3

4.4, the peak-to-average power ratio (PAPR) of the transmitter shall not exceed 13 ㏈ for more than 0.1% of the time and shall use a signal corresponding to the highest PAPR during periods of continuous transmission.

5.2. Test Procedure

The test follows section 5.2.3.4 of ANSI C63.26-2015.

See instrumentation-specific application literature for further guidance regarding use of the CCDF capability.
The following guidelines are offered for performing a CCDF measurement.

a. Set resolution/measurement bandwidth ≥ OBW or specified reference bandwidth.

b. Set the number of counts to a value that stabilizes the measured CCDF curve.

c. Set the measurement interval as follows:

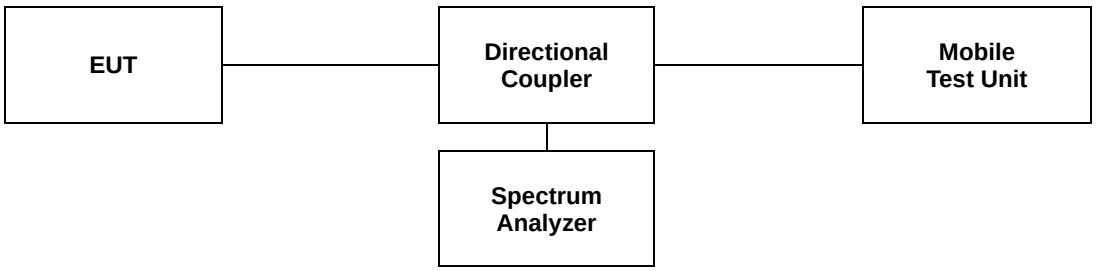
1) For continuous transmissions, set to greater of [10 x (number of points in sweep) x (transmission symbol period)] or 1 ㎳.

2) For burst transmissions, employ an external trigger that is synchronized with the EUT burst timing sequence, or use the internal burst trigger with a trigger level that allows the burst to stabilize. Set the measurement interval to a time that is less than or equal to the burst duration.

3) If there are several carriers in a single antenna port, the peak power shall be determined for each individual carrier (by disabling the other carriers while measuring the required carrier) and the total peak power calculated from the sum of the individual carrier peak powers.

d. Record the maximum PAPR level associated with a probability of 0.1 %.

e. The peak power level is calculated form the sum of the PAPR value from step d) to the measured average power.



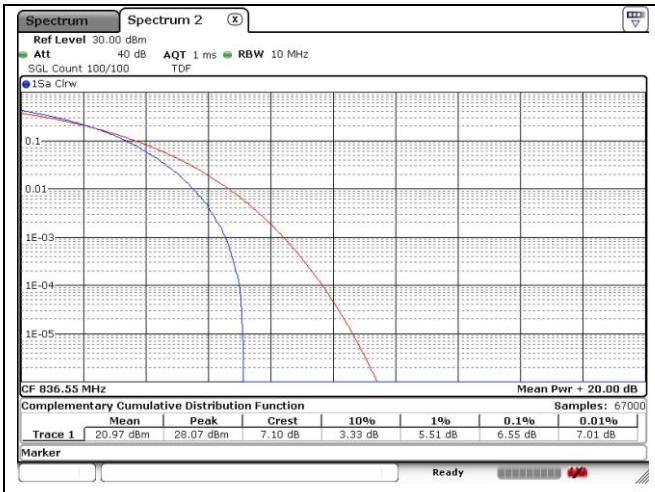
5.3 Test Results

Ambient temperature : (23 ± 1) ℃
Relative humidity : 47 % R.H.

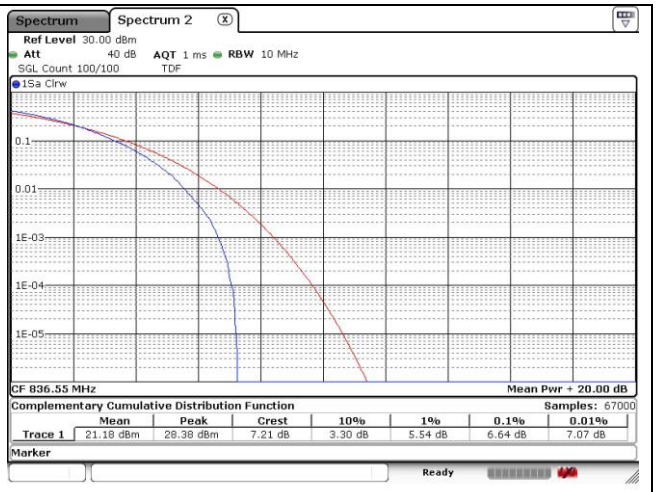
Band	PCC			SCC			PAR (dB)
	BW (㎒)	Frequency (㎒)	Channel	BW (㎒)	Frequency (㎒)	Channel	64QAM
5B	3	834.1	20501	5	838.0	20540	6.55
	5	835.0	20510	3	838.9	20549	6.64
	5	831.8	20478	10	839.0	20550	6.72
	10	834.0	20500	5	841.2	20572	6.70
	10	831.6	20476	10	841.5	20575	6.70
7C	10	2 525.6	21006	20	2 540.0	21150	7.33
	20	2 530.1	21051	10	2 544.5	21195	7.33
	15	2 530.1	21051	15	2 542.1	21171	7.04
	15	2 530.1	21051	10	2 542.1	21171	7.07
	15	2 525.3	21003	20	2 542.4	21174	7.13
	20	2 527.6	21026	15	2 544.7	21197	7.04
	20	2 525.1	21001	20	2 544.9	21199	7.42
66B	5	1 752.6	132398	5	1 757.4	132446	6.90
	5	1 750.3	132375	10	1 757.5	132447	7.22
	10	1 752.5	132397	5	1 759.7	132469	7.07
	5	1 748.1	132353	15	1 757.4	132446	6.87
	15	1 752.6	132398	5	1 761.9	132491	6.84
	10	1 750.1	132373	10	1 760.0	132472	7.16
66C	10	1 747.9	132351	15	1 759.9	132471	6.99
	15	1 750.1	132373	10	1 762.1	132493	6.99
	10	1 745.6	132328	20	1 760.0	132472	6.90
	20	1 750.1	132373	10	1 764.5	132517	6.81
	15	1 747.5	132347	15	1 762.5	132497	7.65
	15	1 745.3	132325	20	1 762.4	132496	7.01
	20	1 747.6	132348	15	1 764.7	132519	6.96
	20	1 752.5	132397	5	1 764.2	132514	6.90
	5	1 745.8	132330	20	1 757.5	132447	7.13
	20	1 745.1	132323	20	1 764.9	132521	7.51

- Test plots

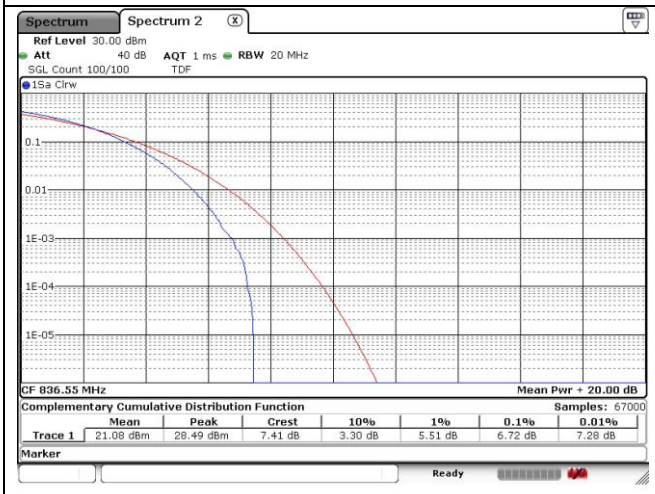
ULCA 5B



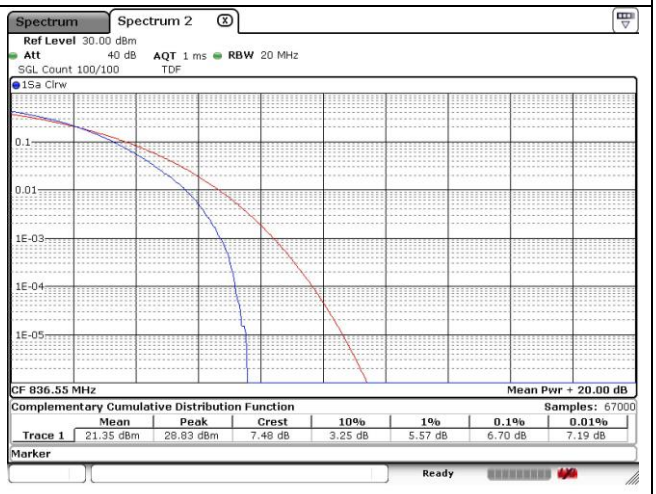
3 ㎒ + 5 ㎒ 64QAM Middle Channel - Full RB



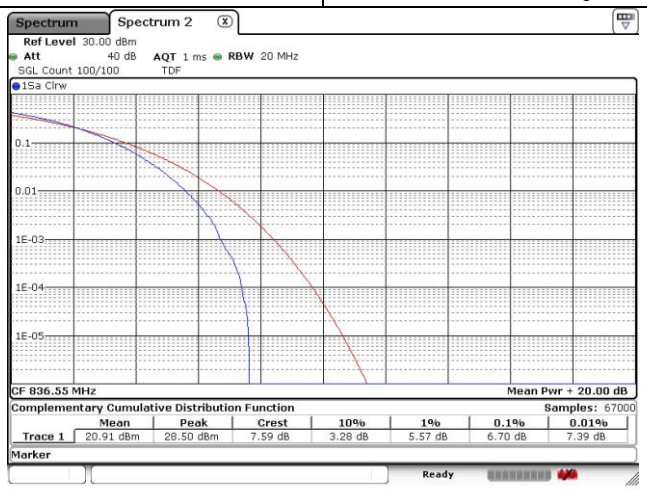
5 ㎒ + 3 ㎒ 64QAM Middle Channel - Full RB



5 ㎒ + 10 ㎒ 64QAM Middle Channel - Full RB

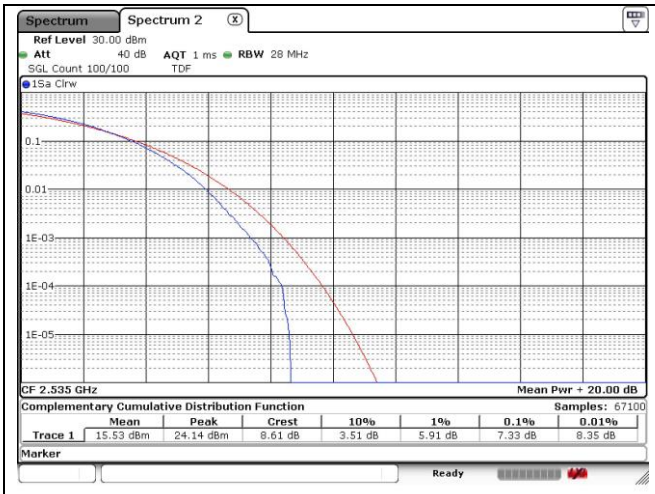


10 ㎒ + 5 ㎒ 64QAM Middle Channel - Full RB

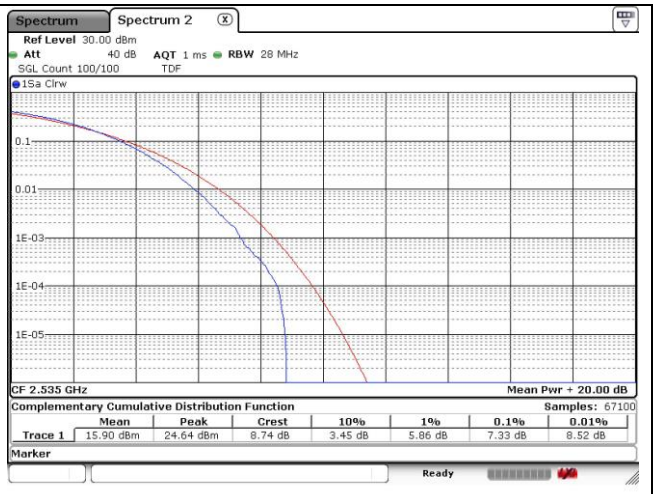


10 ㎒ + 10 ㎒ 64QAM Middle Channel - Full RB

ULCA 7C

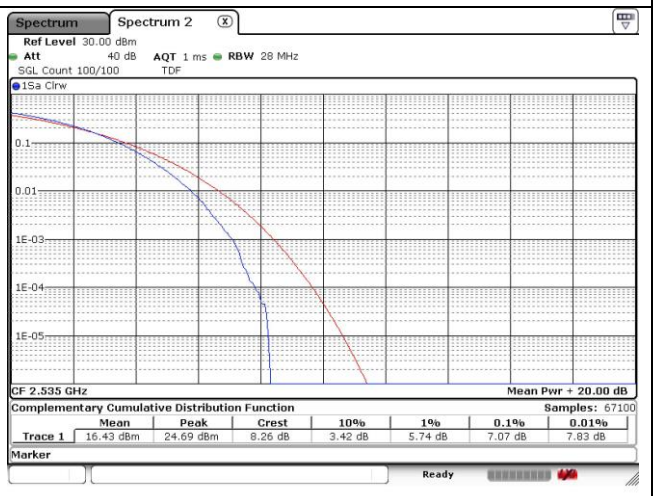


10 ㎒ + 20 ㎒ 64QAM Middle Channel - Full RB



20 ㎒ + 10 ㎒ 64QAM Middle Channel - Full RB

15 ㎒ + 15 ㎒ 64QAM Middle Channel - Full RB



15 ㎒ + 10 ㎒ 64QAM Middle Channel - Full RB