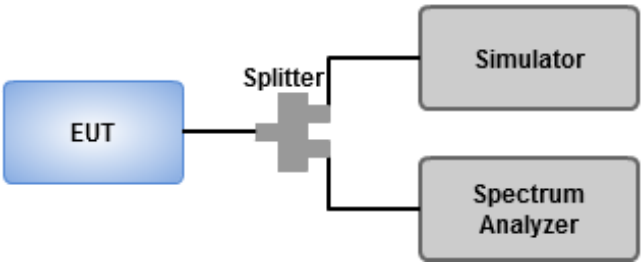
3.5 Occupied and 26 dB Bandwidth

3.5.1 Test Procedures

1. Set RBW =20 / 30 / 100 / 100 / 200 / 200 kHz, VBW = 100 / 100 / 300 / 300 / 1000 / 1000 kHz for LTE channel bandwidth 1.4 / 3 / 5 / 10 / 15 / 20 MHz.
2. Detector = Peak, Trace mode = max hold.
3. Sweep = auto couple, Allow the trace to stabilize.
4. Using occupied bandwidth measurement function of spectrum analyzer to measure occupied bandwidth.
5. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower) that are attenuated by 26dB relative to the maximum level measured in the fundamental emission.

3.5.2 Test Setup



3.5.3 Test Result of Occupied Bandwidth

Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
Band 4	-	-	-	-	-
Band 4_LTE_1.4MHz_(QPSK)_1TX	1.274M	1.091M	1M09G7D	1.232M	1.085M
Band 4_LTE_1.4MHz_(16QAM)_1TX	1.292M	1.089M	1M09W7D	1.243M	1.083M
Band 4_LTE_3MHz_(QPSK)_1TX	2.948M	2.683M	2M68G7D	2.888M	2.678M
Band 4_LTE_3MHz_(16QAM)_1TX	2.933M	2.689M	2M69W7D	2.91M	2.681M
Band 4_LTE_5MHz_(QPSK)_1TX	4.913M	4.487M	4M49G7D	4.863M	4.47M
Band 4_LTE_5MHz_(16QAM)_1TX	4.9M	4.483M	4M48W7D	4.825M	4.472M
Band 4_LTE_10MHz_(QPSK)_1TX	9.575M	8.946M	8M95G7D	9.4M	8.921M
Band 4_LTE_10MHz_(16QAM)_1TX	9.575M	8.927M	8M93W7D	9.525M	8.914M
Band 4_LTE_15MHz_(QPSK)_1TX	14.438M	13.395M	13M4G7D	14.175M	13.366M
Band 4_LTE_15MHz_(16QAM)_1TX	14.213M	13.429M	13M4W7D	14.138M	13.366M
Band 4_LTE_20MHz_(QPSK)_1TX	18.95M	17.855M	17M9G7D	18.75M	17.756M
Band 4_LTE_20MHz_(16QAM)_1TX	18.9M	17.887M	17M9W7D	18.7M	17.783M

Max-N dB = Maximum 26dB down bandwidth; **Max-OBW** = Maximum 99% occupied bandwidth;
Min-N dB = Minimum 26dB down bandwidth; **Min-OBW** = Minimum 99% occupied bandwidth;

Result

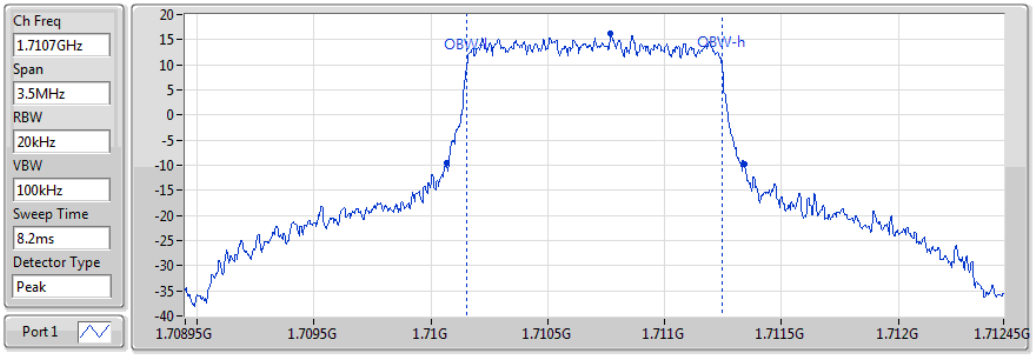
Mode	Result	RB	RB Start	Limit	P1-N dB (Hz)	P1-OBW (Hz)
Band 4_LTE_1.4MHz_(QPSK)_1TX	-	-	-	-	-	-
1710.7MHz	Pass	6	0	Inf	1.274M	1.091M
1732.5MHz	Pass	6	0	Inf	1.253M	1.085M
1754.3MHz	Pass	6	0	Inf	1.232M	1.086M
Band 4_LTE_1.4MHz_(16QAM)_1TX	-	-	-	-	-	-
1710.7MHz	Pass	6	0	Inf	1.292M	1.089M
1732.5MHz	Pass	6	0	Inf	1.243M	1.083M
1754.3MHz	Pass	6	0	Inf	1.26M	1.088M
Band 4_LTE_3MHz_(QPSK)_1TX	-	-	-	-	-	-
1711.5MHz	Pass	15	0	Inf	2.888M	2.678M
1732.5MHz	Pass	15	0	Inf	2.918M	2.68M
1753.5MHz	Pass	15	0	Inf	2.948M	2.683M
Band 4_LTE_3MHz_(16QAM)_1TX	-	-	-	-	-	-
1711.5MHz	Pass	15	0	Inf	2.91M	2.681M
1732.5MHz	Pass	15	0	Inf	2.925M	2.688M
1753.5MHz	Pass	15	0	Inf	2.933M	2.689M
Band 4_LTE_5MHz_(QPSK)_1TX	-	-	-	-	-	-
1712.5MHz	Pass	25	0	Inf	4.863M	4.483M

Mode	Result	RB	RB Start	Limit	P1-N dB (Hz)	P1-OBW (Hz)
1732.5MHz	Pass	25	0	Inf	4.863M	4.47M
1752.5MHz	Pass	25	0	Inf	4.913M	4.487M
Band 4_LTE_5MHz_(16QAM)_1TX	-	-	-	-	-	-
1712.5MHz	Pass	25	0	Inf	4.9M	4.483M
1732.5MHz	Pass	25	0	Inf	4.825M	4.472M
1752.5MHz	Pass	25	0	Inf	4.888M	4.472M
Band 4_LTE_10MHz_(QPSK)_1TX	-	-	-	-	-	-
1715MHz	Pass	50	0	Inf	9.4M	8.938M
1732.5MHz	Pass	50	0	Inf	9.575M	8.921M
1750MHz	Pass	50	0	Inf	9.5M	8.946M
Band 4_LTE_10MHz_(16QAM)_1TX	-	-	-	-	-	-
1715MHz	Pass	50	0	Inf	9.525M	8.914M
1732.5MHz	Pass	50	0	Inf	9.575M	8.927M
1750MHz	Pass	50	0	Inf	9.525M	8.927M
Band 4_LTE_15MHz_(QPSK)_1TX	-	-	-	-	-	-
1717.5MHz	Pass	75	0	Inf	14.288M	13.395M
1732.5MHz	Pass	75	0	Inf	14.438M	13.391M
1747.5MHz	Pass	75	0	Inf	14.175M	13.366M
Band 4_LTE_15MHz_(16QAM)_1TX	-	-	-	-	-	-
1717.5MHz	Pass	75	0	Inf	14.138M	13.366M
1732.5MHz	Pass	75	0	Inf	14.138M	13.429M
1747.5MHz	Pass	75	0	Inf	14.213M	13.375M
Band 4_LTE_20MHz_(QPSK)_1TX	-	-	-	-	-	-
1720MHz	Pass	100	0	Inf	18.9M	17.852M
1732.5MHz	Pass	100	0	Inf	18.95M	17.855M
1745MHz	Pass	100	0	Inf	18.75M	17.756M
Band 4_LTE_20MHz_(16QAM)_1TX	-	-	-	-	-	-
1720MHz	Pass	100	0	Inf	18.7M	17.857M
1732.5MHz	Pass	100	0	Inf	18.9M	17.887M
1745MHz	Pass	100	0	Inf	18.9M	17.783M

Port X-N dB = Port **X** 26dB down bandwidth; **Port X-OBW** = Port **X** 99% occupied bandwidth;

Band 4_LTE_1.4MHz_(QPSK)_1TX **EBW**

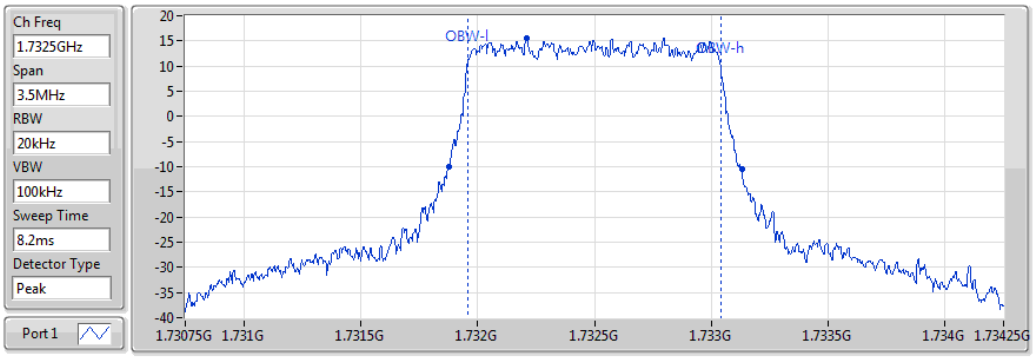
1710.7MHz



RB	RB Start	26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
6	0	1.274M	1.710067G	1.711341G	1.091M	1.710153G	1.711245G	Inf	1

Band 4_LTE_1.4MHz_(QPSK)_1TX **EBW**

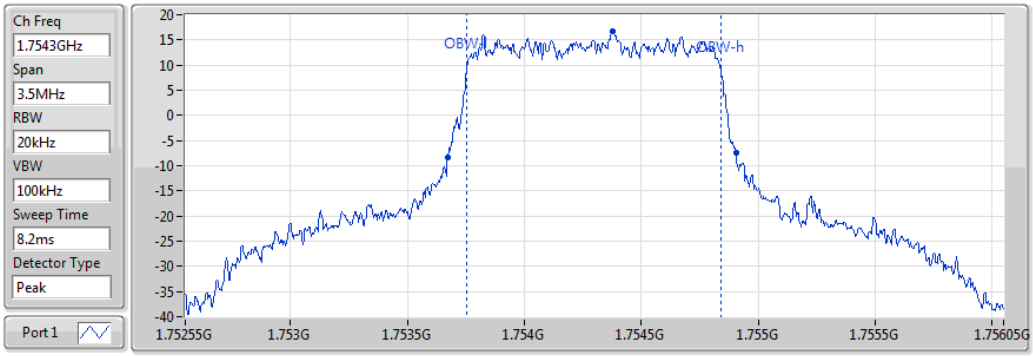
1732.5MHz



RB	RB Start	26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
6	0	1.253M	1.731877G	1.73313G	1.085M	1.731956G	1.733041G	Inf	1

Band 4_LTE_1.4MHz_(QPSK)_1TX **EBW**

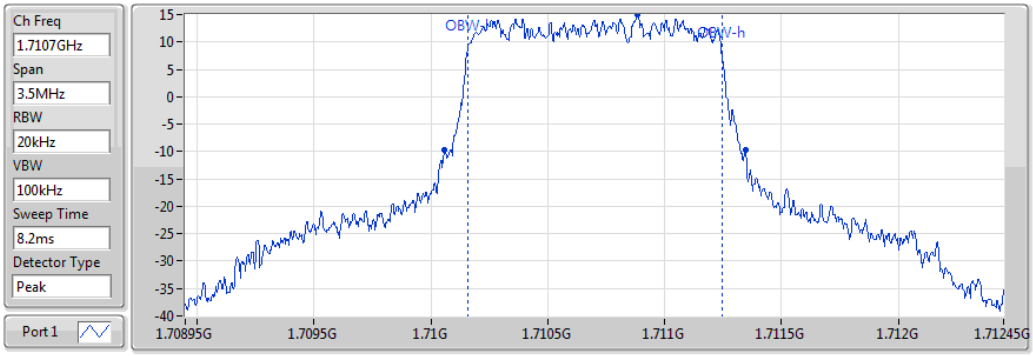
1754.3MHz



RB	RB Start	26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
6	0	1.232M	1.753674G	1.754906G	1.086M	1.753755G	1.754841G	Inf	1

Band 4_LTE_1.4MHz_(16QAM)_1TX **EBW**

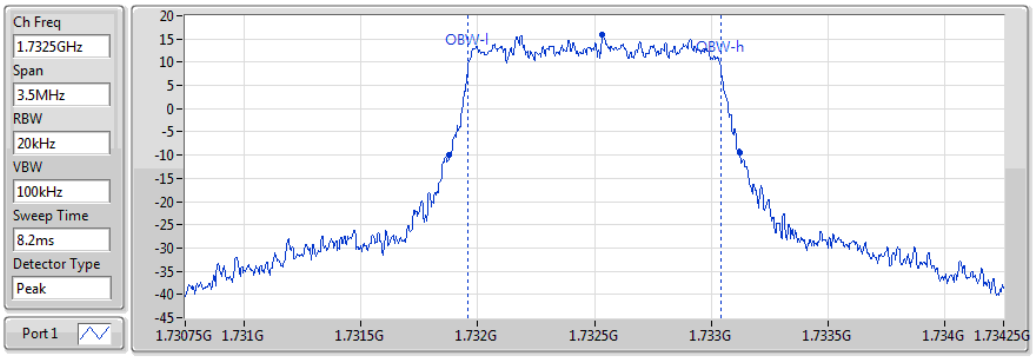
1710.7MHz



RB	RB Start	26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
6	0	1.292M	1.710056G	1.711348G	1.089M	1.710156G	1.711245G	Inf	1

Band 4_LTE_1.4MHz_(16QAM)_1TX **EBW**

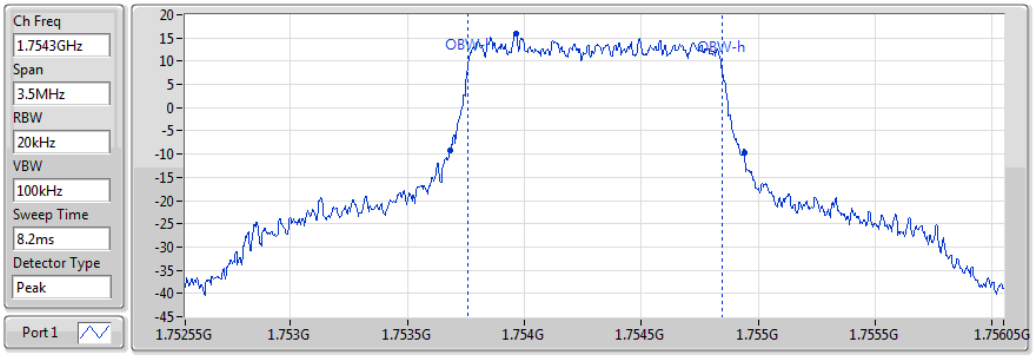
1732.5MHz



RB	RB Start	26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
6	0	1.243M	1.731881G	1.733123G	1.083M	1.73196G	1.733043G	Inf	1

Band 4_LTE_1.4MHz_(16QAM)_1TX **EBW**

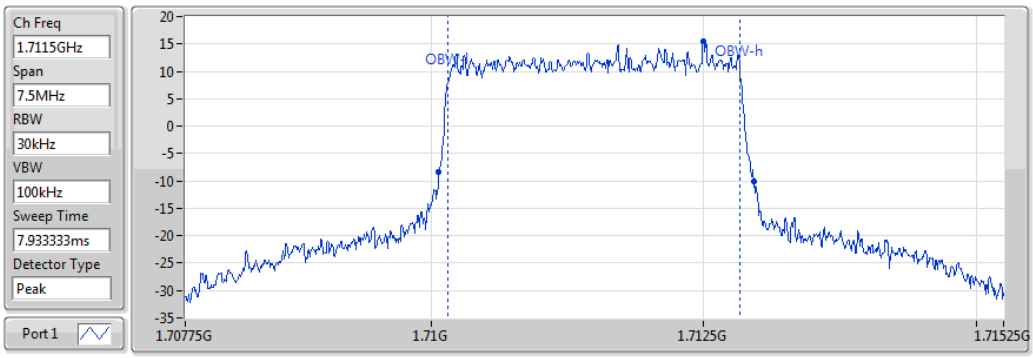
1754.3MHz



RB	RB Start	26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
6	0	1.26M	1.753684G	1.754944G	1.088M	1.753759G	1.754847G	Inf	1

Band 4_LTE_3MHz_(QPSK)_1TX EBW

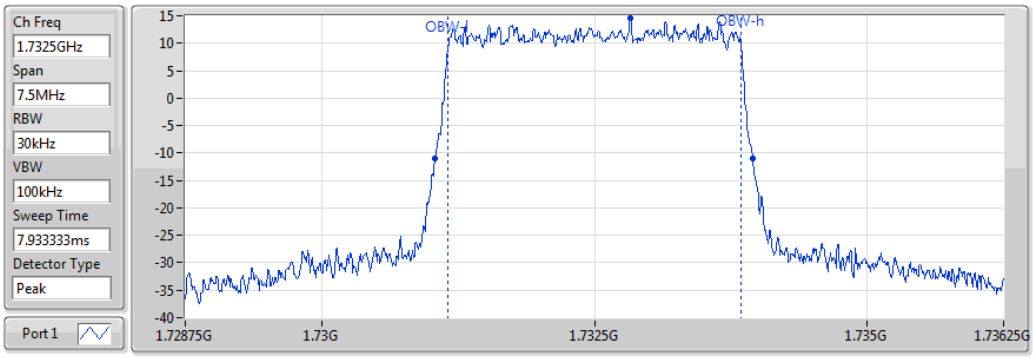
1711.5MHz



RB	RB Start	26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
15	0	2.888M	1.710075G	1.712963G	2.678M	1.71016G	1.712838G	Inf	1

Band 4_LTE_3MHz_(QPSK)_1TX EBW

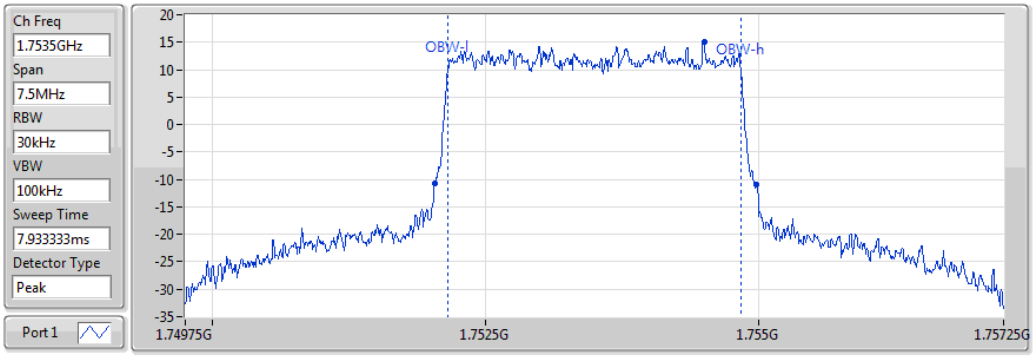
1732.5MHz



RB	RB Start	26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
15	0	2.918M	1.731038G	1.733955G	2.68M	1.73116G	1.733841G	Inf	1

Band 4_LTE_3MHz_(QPSK)_1TX EBW

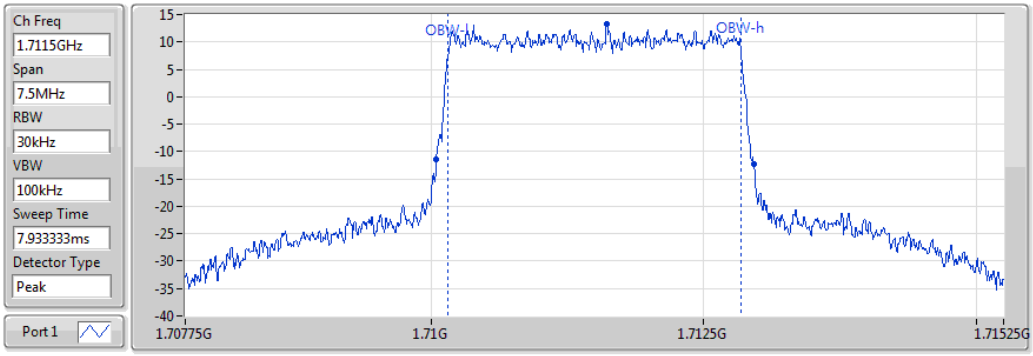
1753.5MHz



RB	RB Start	26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
15	0	2.948M	1.752038G	1.754985G	2.683M	1.752156G	1.754839G	Inf	1

Band 4_LTE_3MHz_(16QAM)_1TX EBW

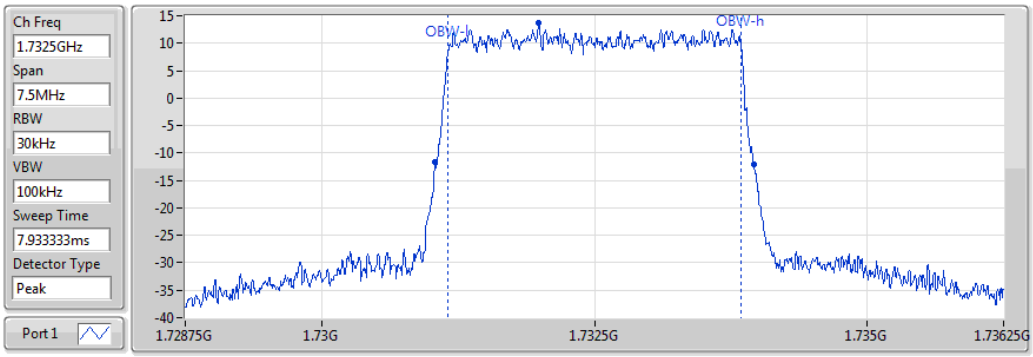
1711.5MHz



RB	RB Start	26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
15	0	2.91M	1.710053G	1.712963G	2.681M	1.71016G	1.712841G	Inf	1

Band 4_LTE_3MHz_(16QAM)_1TX EBW

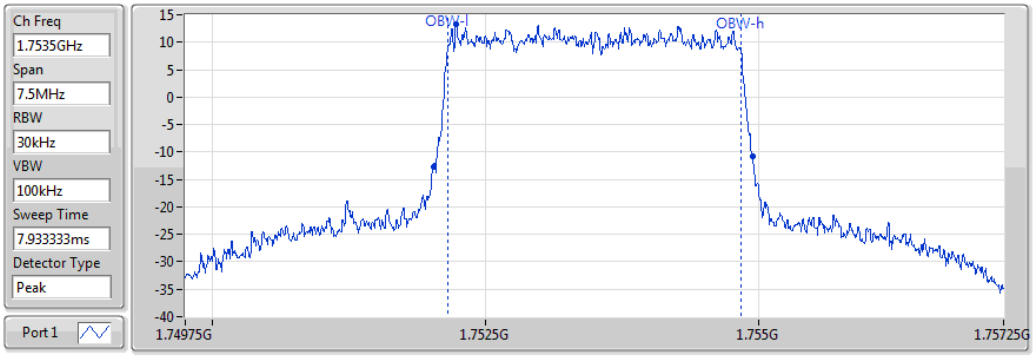
1732.5MHz



RB	RB Start	26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
15	0	2.925M	1.731038G	1.733963G	2.688M	1.731158G	1.733845G	Inf	1

Band 4_LTE_3MHz_(16QAM)_1TX EBW

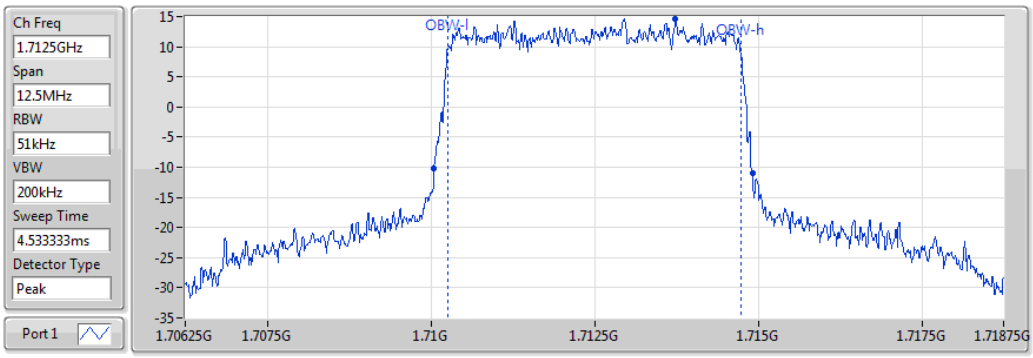
1753.5MHz



RB	RB Start	26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
15	0	2.933M	1.752023G	1.754955G	2.689M	1.752154G	1.754843G	Inf	1

Band 4_LTE_5MHz_(QPSK)_1TX **EBW**

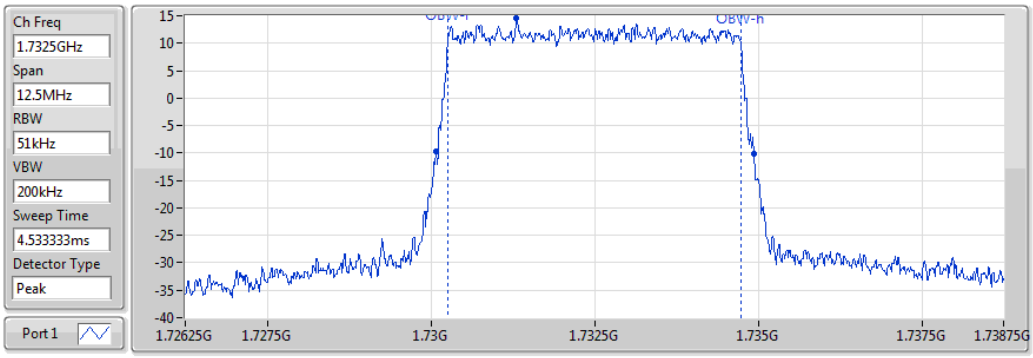
1712.5MHz



RB	RB Start	26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
25	0	4.863M	1.71005G	1.714913G	4.483M	1.710254G	1.714736G	Inf	1

Band 4_LTE_5MHz_(QPSK)_1TX **EBW**

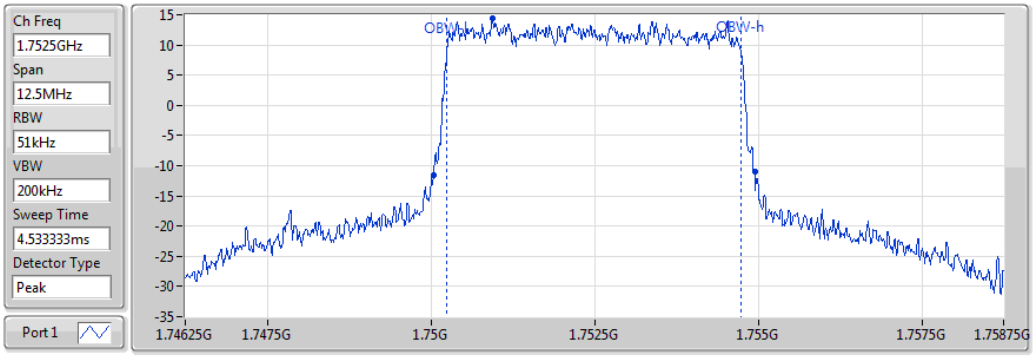
1732.5MHz



RB	RB Start	26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
25	0	4.863M	1.730075G	1.734938G	4.47M	1.730264G	1.734734G	Inf	1

Band 4_LTE_5MHz_(QPSK)_1TX **EBW**

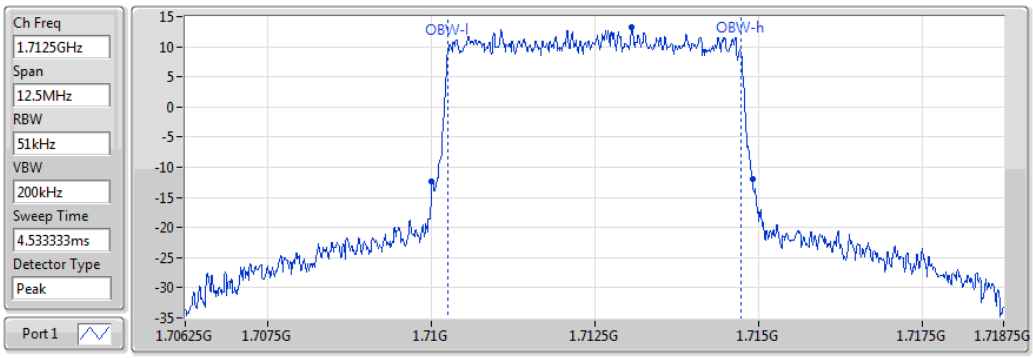
1752.5MHz



RB	RB Start	26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
25	0	4.913M	1.750038G	1.75495G	4.487M	1.750251G	1.754738G	Inf	1

Band 4_LTE_5MHz_(16QAM)_1TX EBW

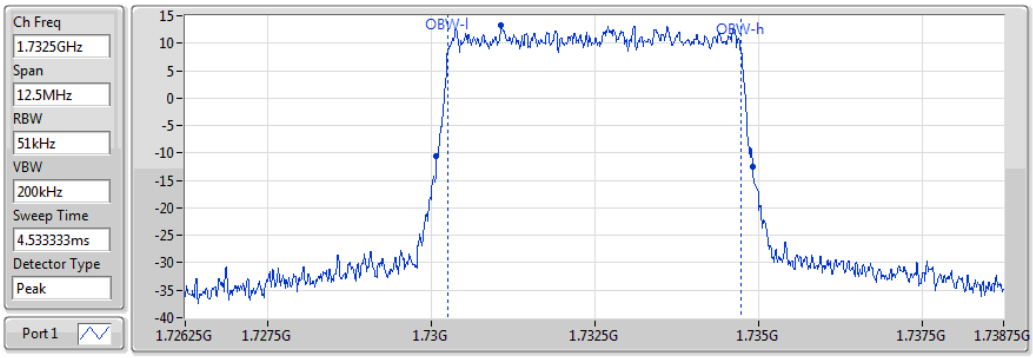
1712.5MHz



RB	RB Start	26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
25	0	4.9M	1.710013G	1.714913G	4.483M	1.710259G	1.714742G	Inf	1

Band 4_LTE_5MHz_(16QAM)_1TX EBW

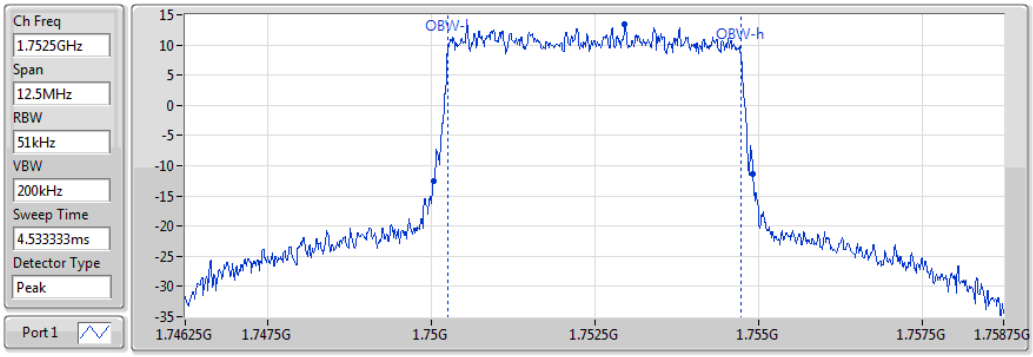
1732.5MHz



RB	RB Start	26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
25	0	4.825M	1.730088G	1.734913G	4.472M	1.730267G	1.734739G	Inf	1

Band 4_LTE_5MHz_(16QAM)_1TX EBW

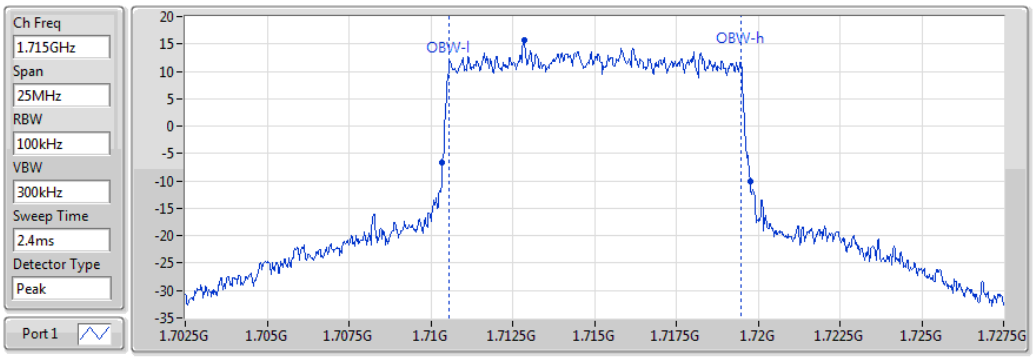
1752.5MHz



RB	RB Start	26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
25	0	4.888M	1.750038G	1.754925G	4.472M	1.750261G	1.754733G	Inf	1

Band 4_LTE_10MHz_(QPSK)_1TX **EBW**

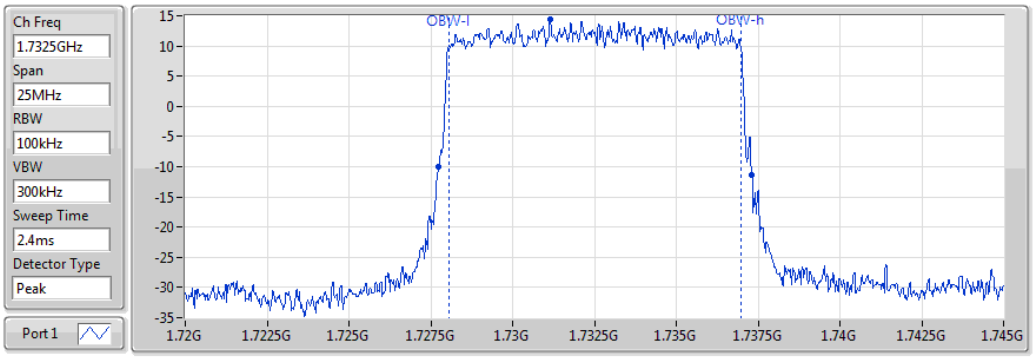
1715MHz



RB	RB Start	26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
50	0	9.4M	1.71035G	1.71975G	8.938M	1.710547G	1.719485G	Inf	1

Band 4_LTE_10MHz_(QPSK)_1TX **EBW**

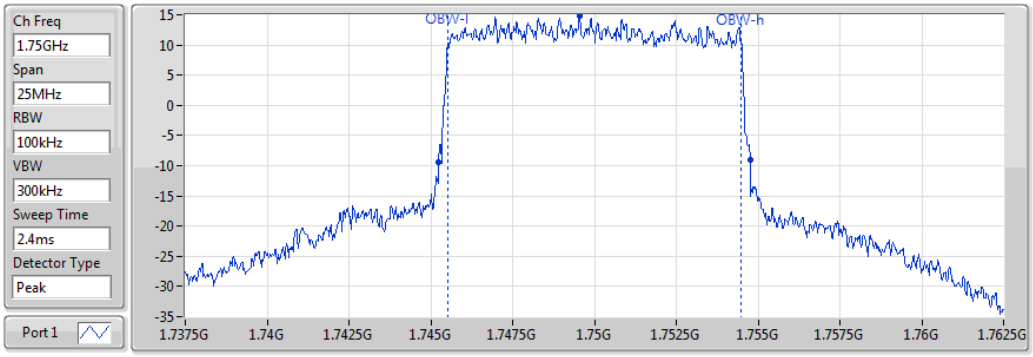
1732.5MHz



RB	RB Start	26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
50	0	9.575M	1.727725G	1.7373G	8.921M	1.728042G	1.736962G	Inf	1

Band 4_LTE_10MHz_(QPSK)_1TX **EBW**

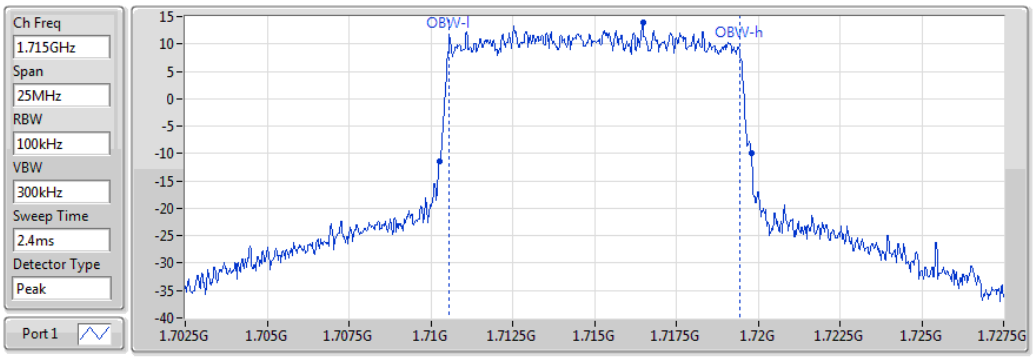
1750MHz



RB	RB Start	26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
50	0	9.5M	1.74525G	1.75475G	8.946M	1.74553G	1.754476G	Inf	1

Band 4_LTE_10MHz_(16QAM)_1TX **EBW**

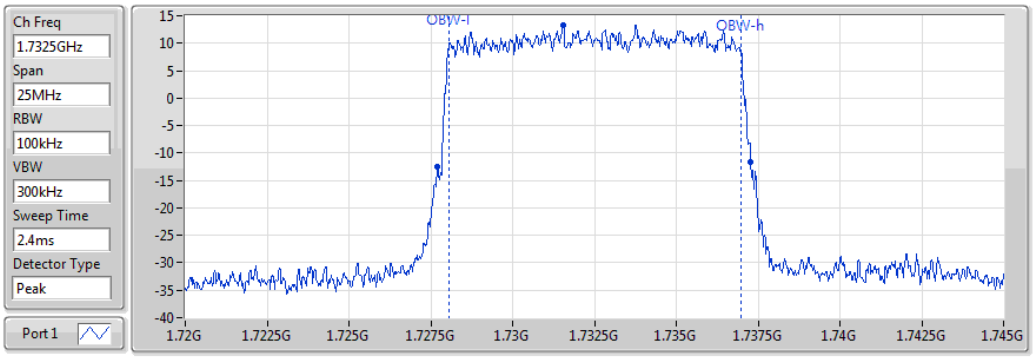
1715MHz



RB	RB Start	26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
50	0	9.525M	1.710275G	1.7198G	8.914M	1.710542G	1.719456G	Inf	1

Band 4_LTE_10MHz_(16QAM)_1TX **EBW**

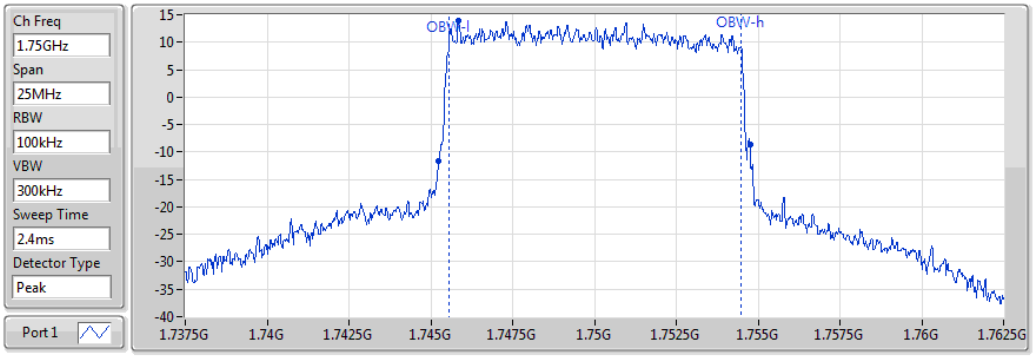
1732.5MHz



RB	RB Start	26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
50	0	9.575M	1.7277G	1.737275G	8.927M	1.728043G	1.73697G	Inf	1

Band 4_LTE_10MHz_(16QAM)_1TX **EBW**

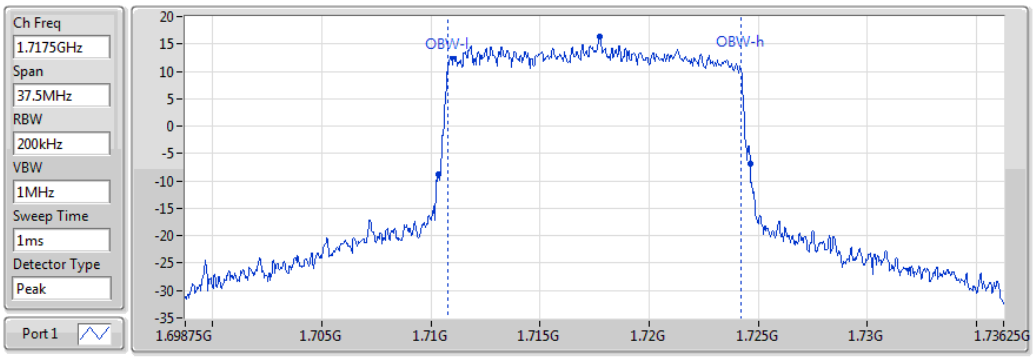
1750MHz



RB	RB Start	26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
50	0	9.525M	1.745225G	1.75475G	8.927M	1.745542G	1.75447G	Inf	1

Band 4_LTE_15MHz_(QPSK)_1TX **EBW**

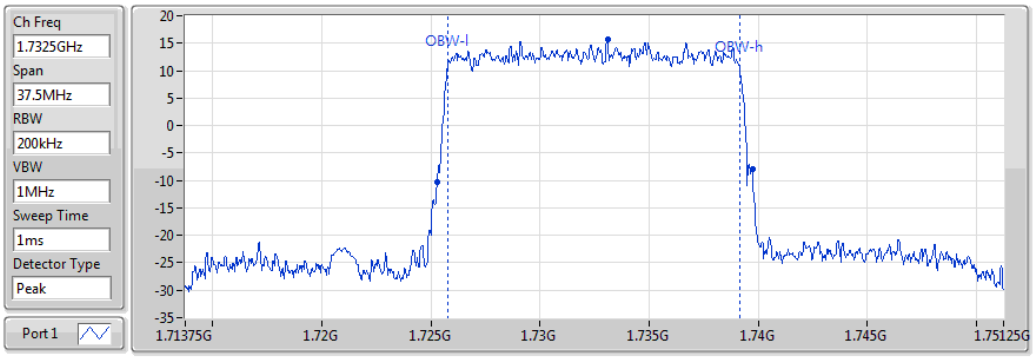
1717.5MHz



RB	RB Start	26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
75	0	14.288M	1.710338G	1.724625G	13.395M	1.710798G	1.724193G	Inf	1

Band 4_LTE_15MHz_(QPSK)_1TX **EBW**

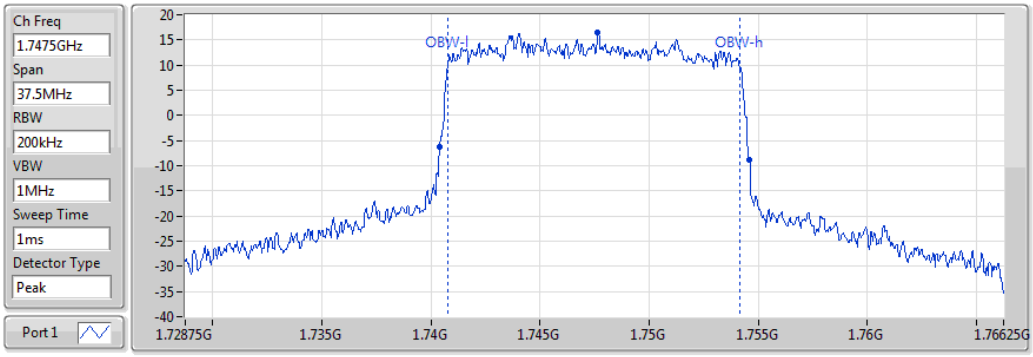
1732.5MHz



RB	RB Start	26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
75	0	14.438M	1.7253G	1.739738G	13.391M	1.725774G	1.739166G	Inf	1

Band 4_LTE_15MHz_(QPSK)_1TX **EBW**

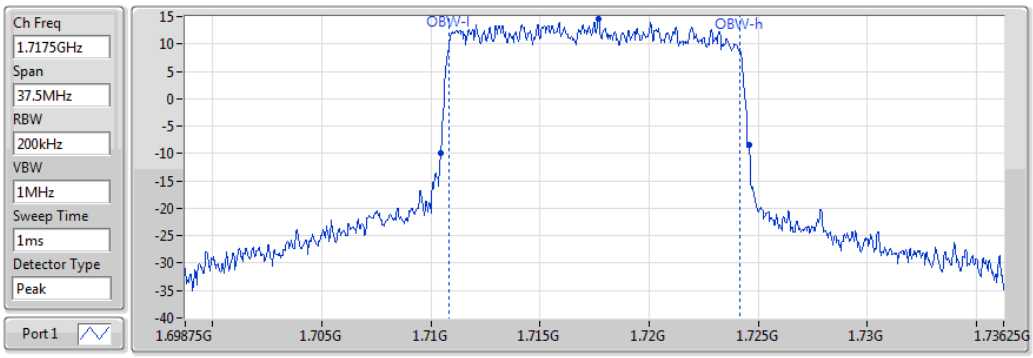
1747.5MHz



RB	RB Start	26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
75	0	14.175M	1.740413G	1.754588G	13.366M	1.740806G	1.754172G	Inf	1

Band 4_LTE_15MHz_(16QAM)_1TX **EBW**

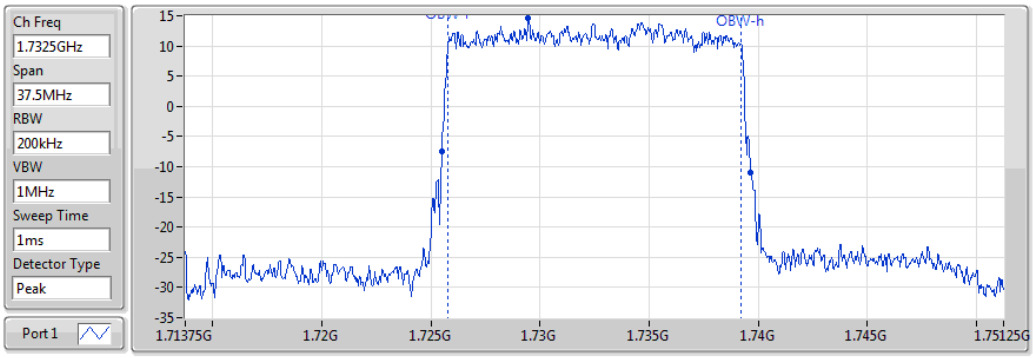
1717.5MHz



RB	RB Start	26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
75	0	14.138M	1.71045G	1.724588G	13.366M	1.710811G	1.724177G	Inf	1

Band 4_LTE_15MHz_(16QAM)_1TX **EBW**

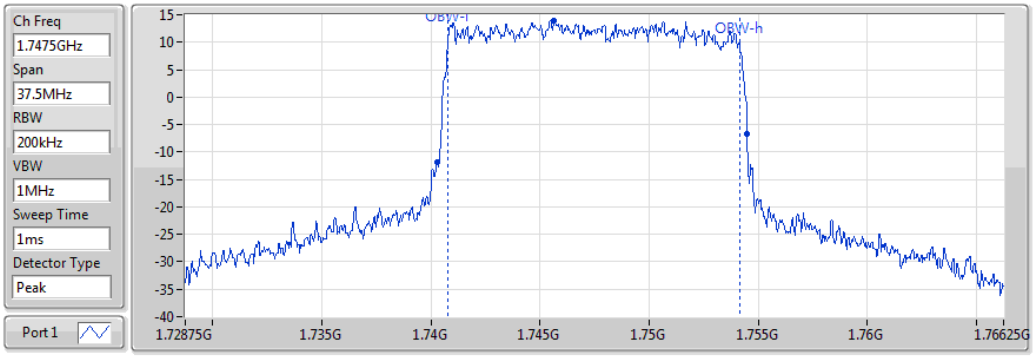
1732.5MHz



RB	RB Start	26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
75	0	14.138M	1.725488G	1.739625G	13.429M	1.725809G	1.739238G	Inf	1

Band 4_LTE_15MHz_(16QAM)_1TX **EBW**

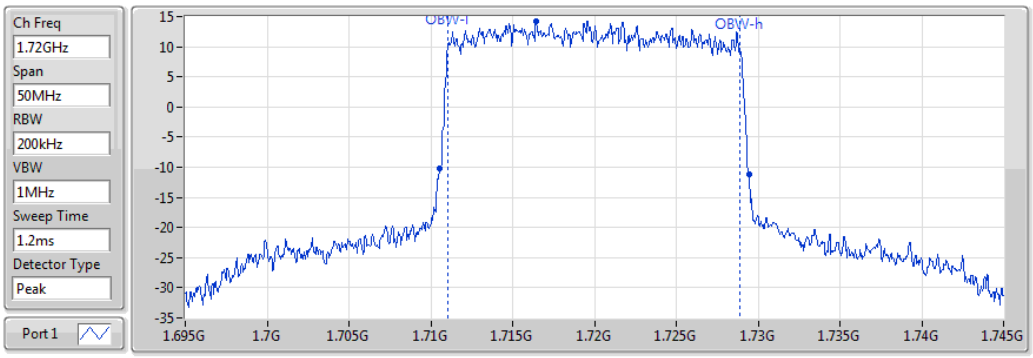
1747.5MHz



RB	RB Start	26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
75	0	14.213M	1.7403G	1.754513G	13.375M	1.740795G	1.75417G	Inf	1

Band 4_LTE_20MHz_(QPSK)_1TX **EBW**

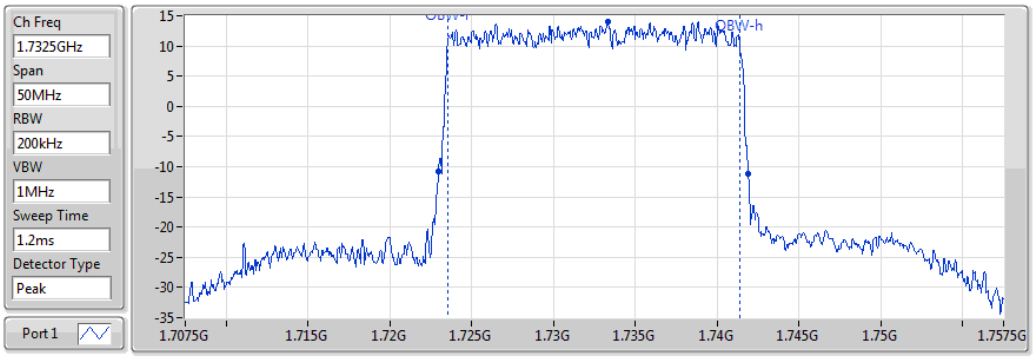
1720MHz



RB	RB Start	26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
100	0	18.9M	1.71055G	1.72945G	17.852M	1.711062G	1.728913G	Inf	1

Band 4_LTE_20MHz_(QPSK)_1TX **EBW**

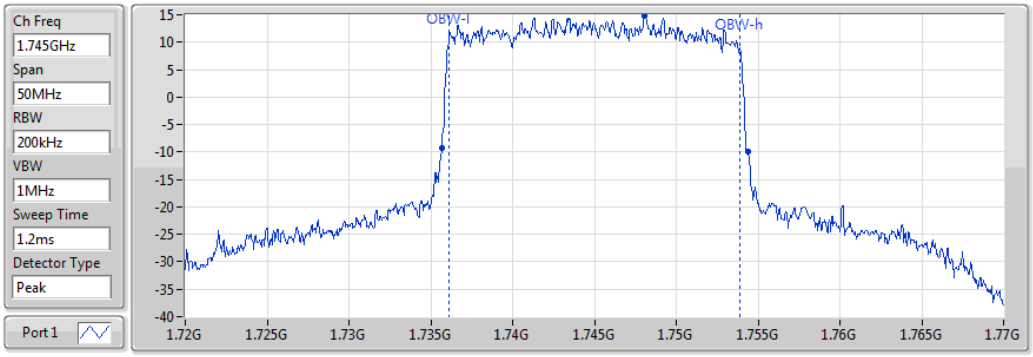
1732.5MHz



RB	RB Start	26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
100	0	18.95M	1.72295G	1.7419G	17.855M	1.72356G	1.741414G	Inf	1

Band 4_LTE_20MHz_(QPSK)_1TX **EBW**

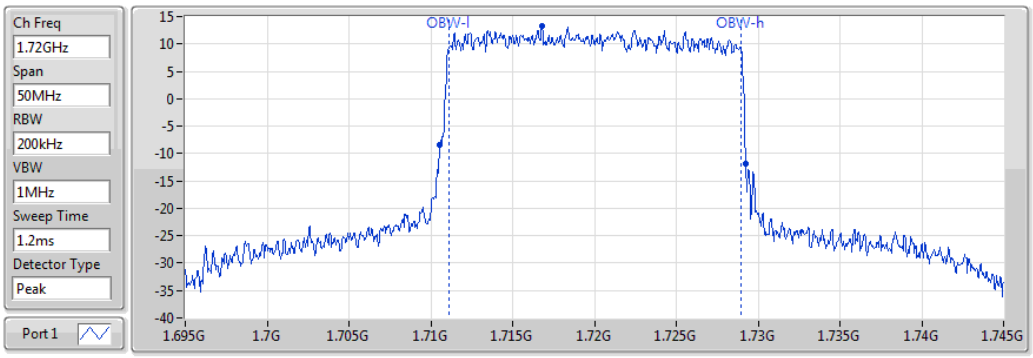
1745MHz



RB	RB Start	26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
100	0	18.75M	1.73565G	1.7544G	17.756M	1.736096G	1.753851G	Inf	1

Band 4_LTE_20MHz_(16QAM)_1TX **EBW**

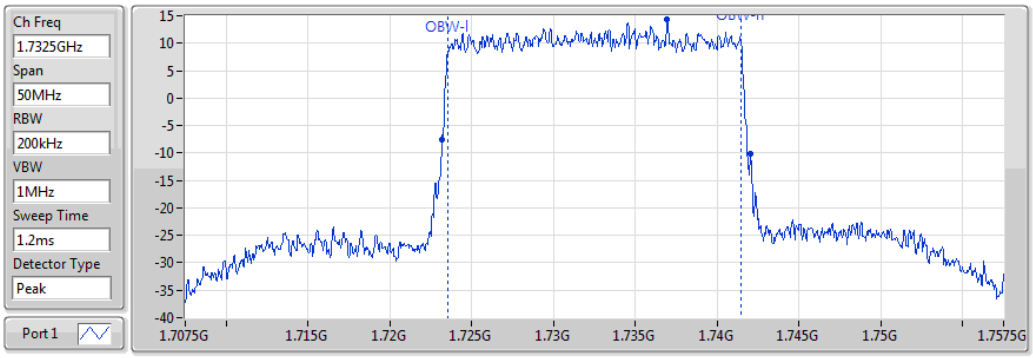
1720MHz



RB	RB Start	26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
100	0	18.7M	1.71055G	1.72925G	17.857M	1.711083G	1.728939G	Inf	1

Band 4_LTE_20MHz_(16QAM)_1TX **EBW**

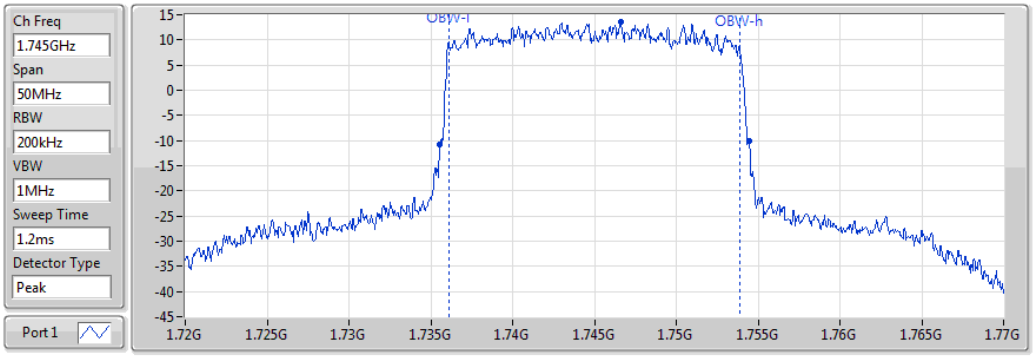
1732.5MHz



RB	RB Start	26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
100	0	18.9M	1.72315G	1.74205G	17.887M	1.723571G	1.741457G	Inf	1

Band 4_LTE_20MHz_(16QAM)_1TX **EBW**

1745MHz



RB	RB Start	26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
100	0	18.9M	1.73555G	1.75445G	17.783M	1.736088G	1.753871G	Inf	1

3.6 Peak to Average Ratio

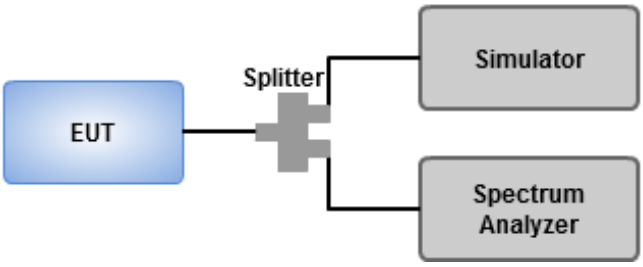
3.6.1 Limit of Peak to Average Ratio

The Peakto-average ratio (PAR) of the transmiss ion may not exceed 13 dB.

3.6.2 Test Procedures

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

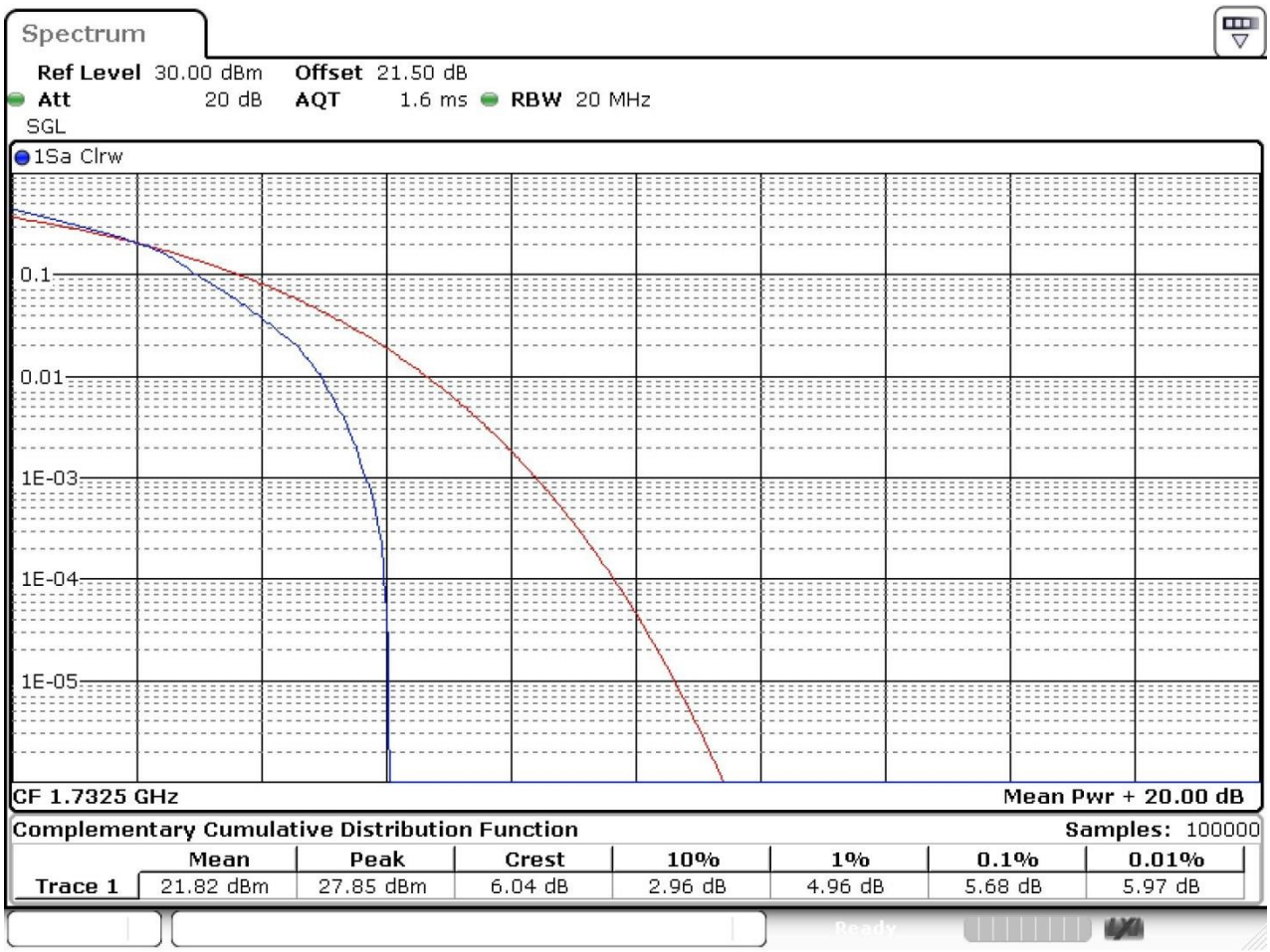
3.6.3 Test Setup



3.6.4 Test Result of Peak to Average Ratio

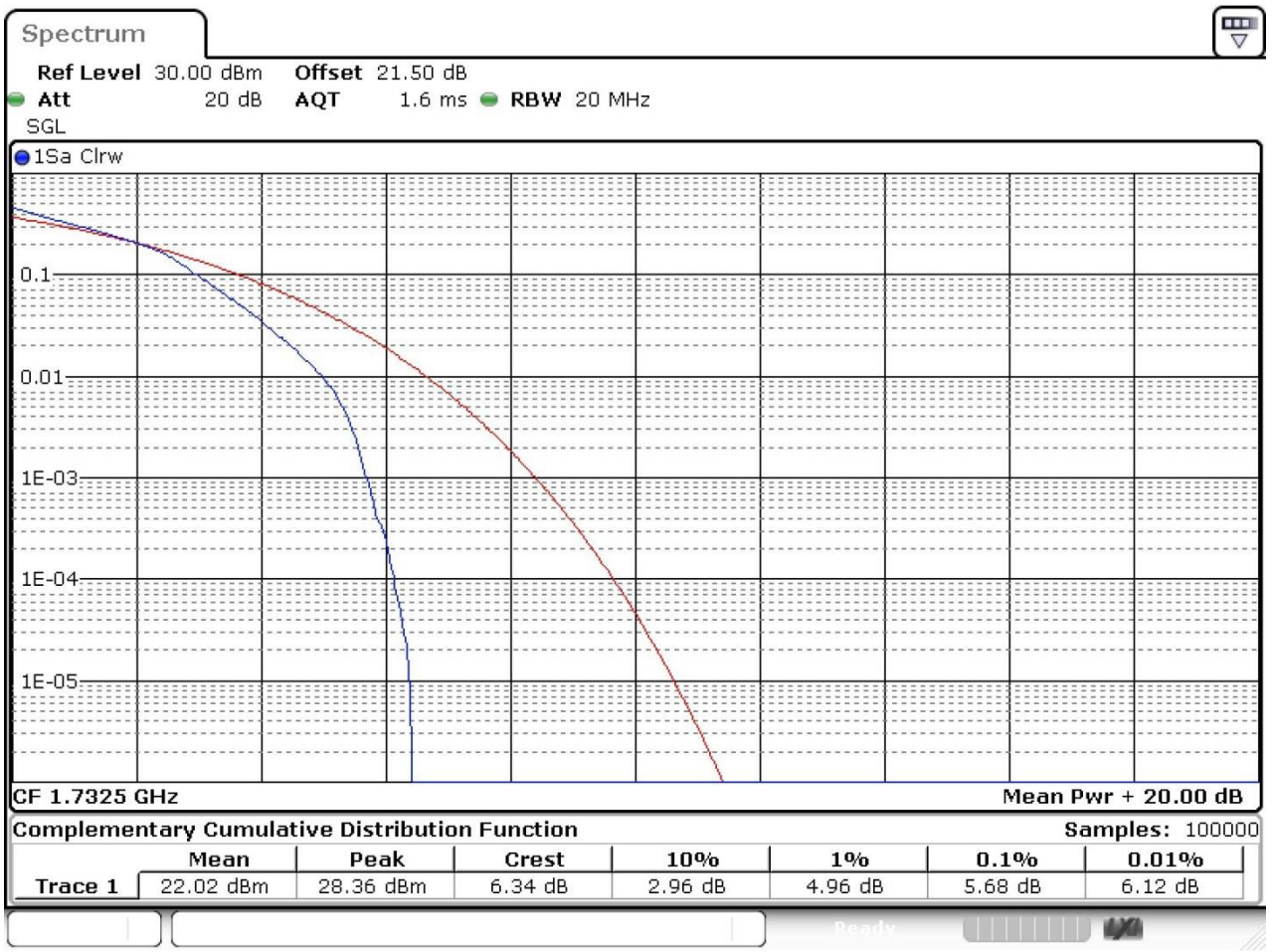
Mode	CB (MHz)	Modulation	Channel	Frequency (MHz)	Peak to Average ratio (dB)
LTE Band 4	1.4	QPSK	19957	1710.7	4.20
LTE Band 4	1.4	QPSK	20175	1732.5	4.84
LTE Band 4	1.4	QPSK	20393	1754.3	4.12
LTE Band 4	1.4	16QAM	19957	1710.7	5.13
LTE Band 4	1.4	16QAM	20175	1732.5	5.68
LTE Band 4	1.4	16QAM	20393	1754.3	4.84

Worst plots



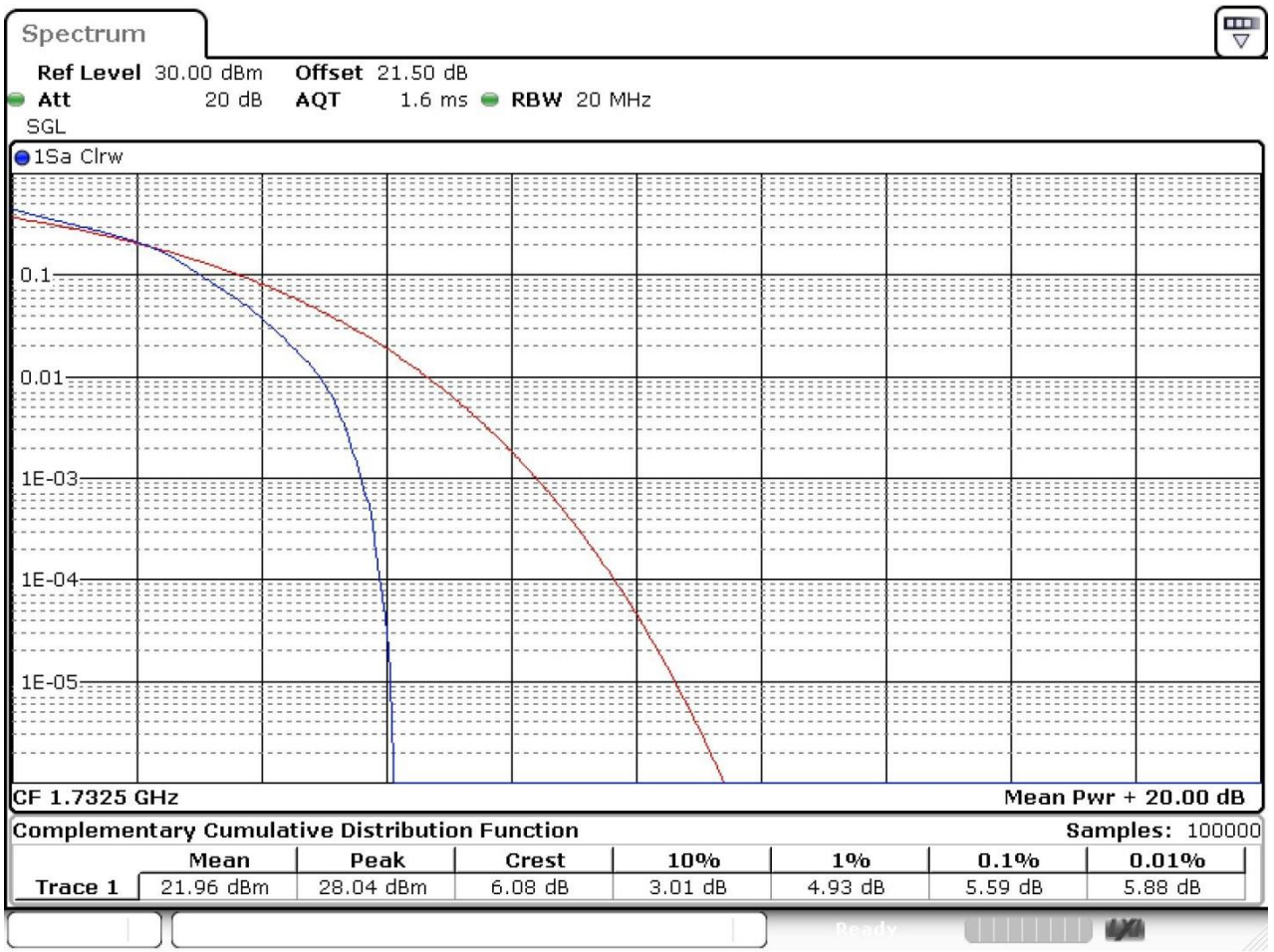
Mode	CB (MHz)	Modulation	Channel	Frequency (MHz)	Peak to Average ratio (dB)
LTE Band 4	3	QPSK	19965	1711.5	4.20
LTE Band 4	3	QPSK	20175	1732.5	4.93
LTE Band 4	3	QPSK	20385	1753.5	4.17
LTE Band 4	3	16QAM	19965	1711.5	5.19
LTE Band 4	3	16QAM	20175	1732.5	5.68
LTE Band 4	3	16QAM	20385	1753.5	4.93

Worst plots



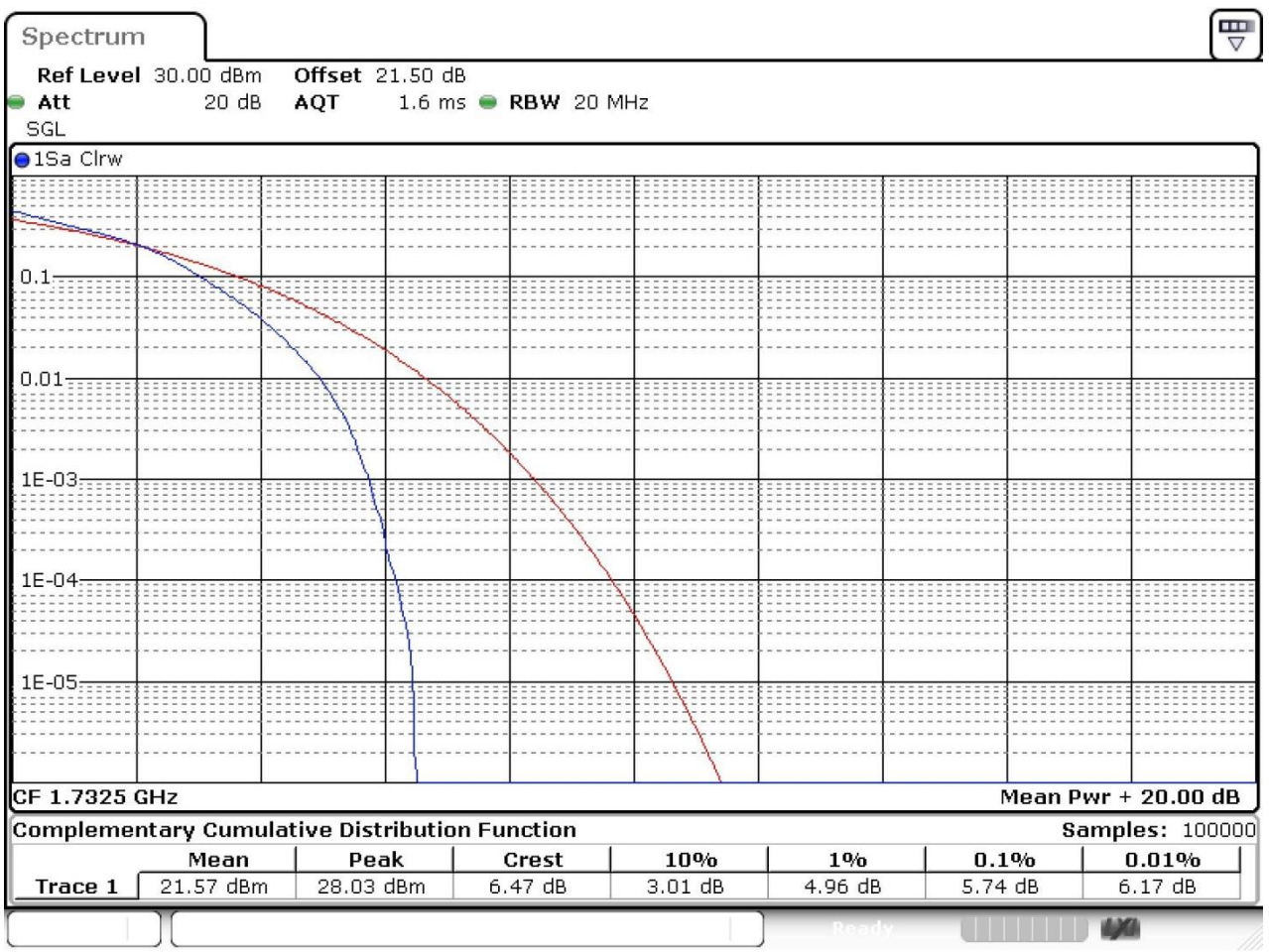
Mode	CB (MHz)	Modulation	Channel	Frequency (MHz)	Peak to Average ratio (dB)
LTE Band 4	5	QPSK	19975	1712.5	4.17
LTE Band 4	5	QPSK	20175	1732.5	4.87
LTE Band 4	5	QPSK	20375	1752.5	4.06
LTE Band 4	5	16QAM	19975	1712.5	4.96
LTE Band 4	5	16QAM	20175	1732.5	5.59
LTE Band 4	5	16QAM	20375	1752.5	4.90

Worst plots



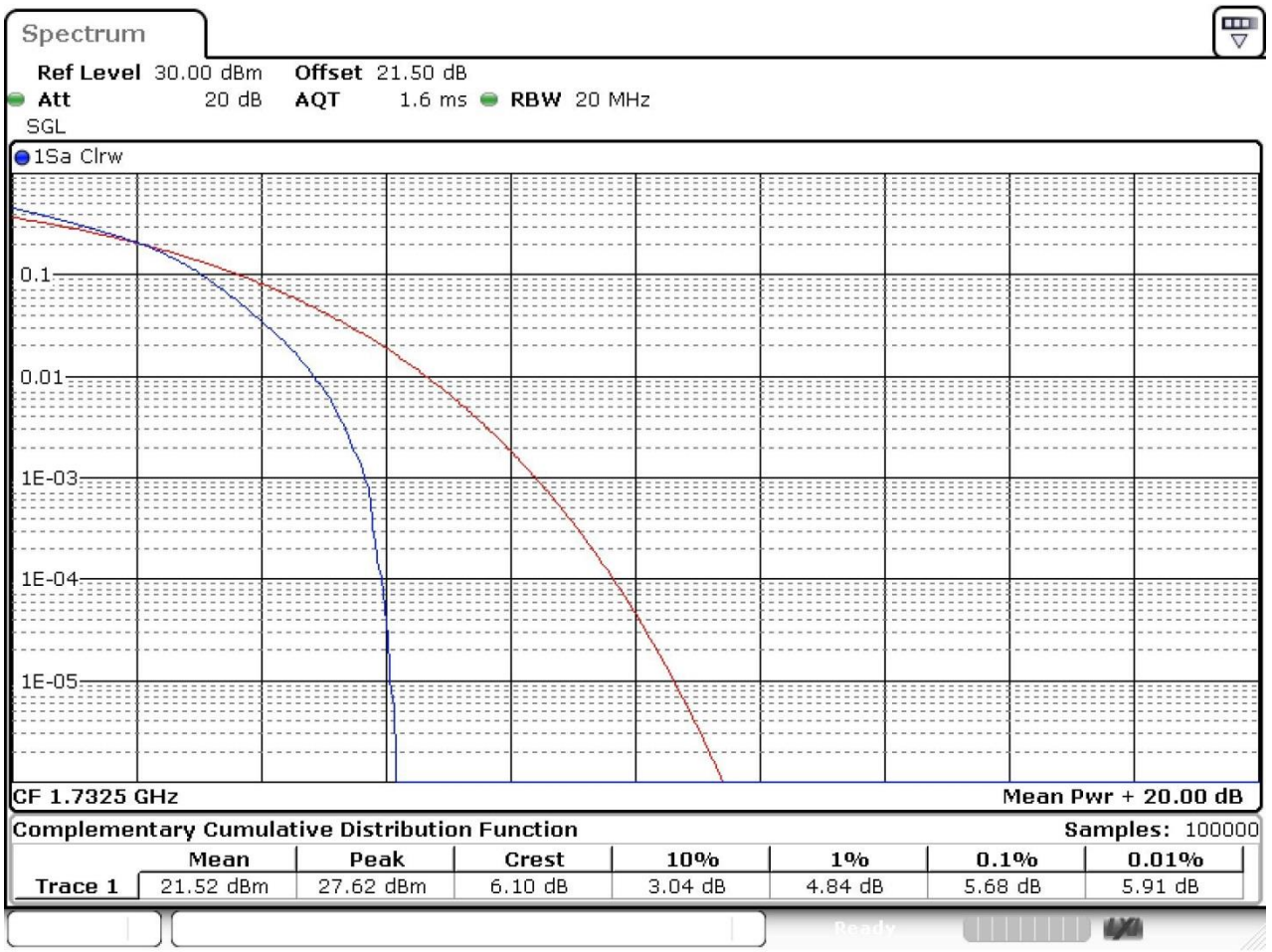
Mode	CB (MHz)	Modulation	Channel	Frequency (MHz)	Peak to Average ratio (dB)
LTE Band 4	10	QPSK	20000	1715.0	4.29
LTE Band 4	10	QPSK	20175	1732.5	4.87
LTE Band 4	10	QPSK	20350	1750.0	4.26
LTE Band 4	10	16QAM	20000	1715.0	5.10
LTE Band 4	10	16QAM	20175	1732.5	5.74
LTE Band 4	10	16QAM	20350	1750.0	5.01

Worst plots



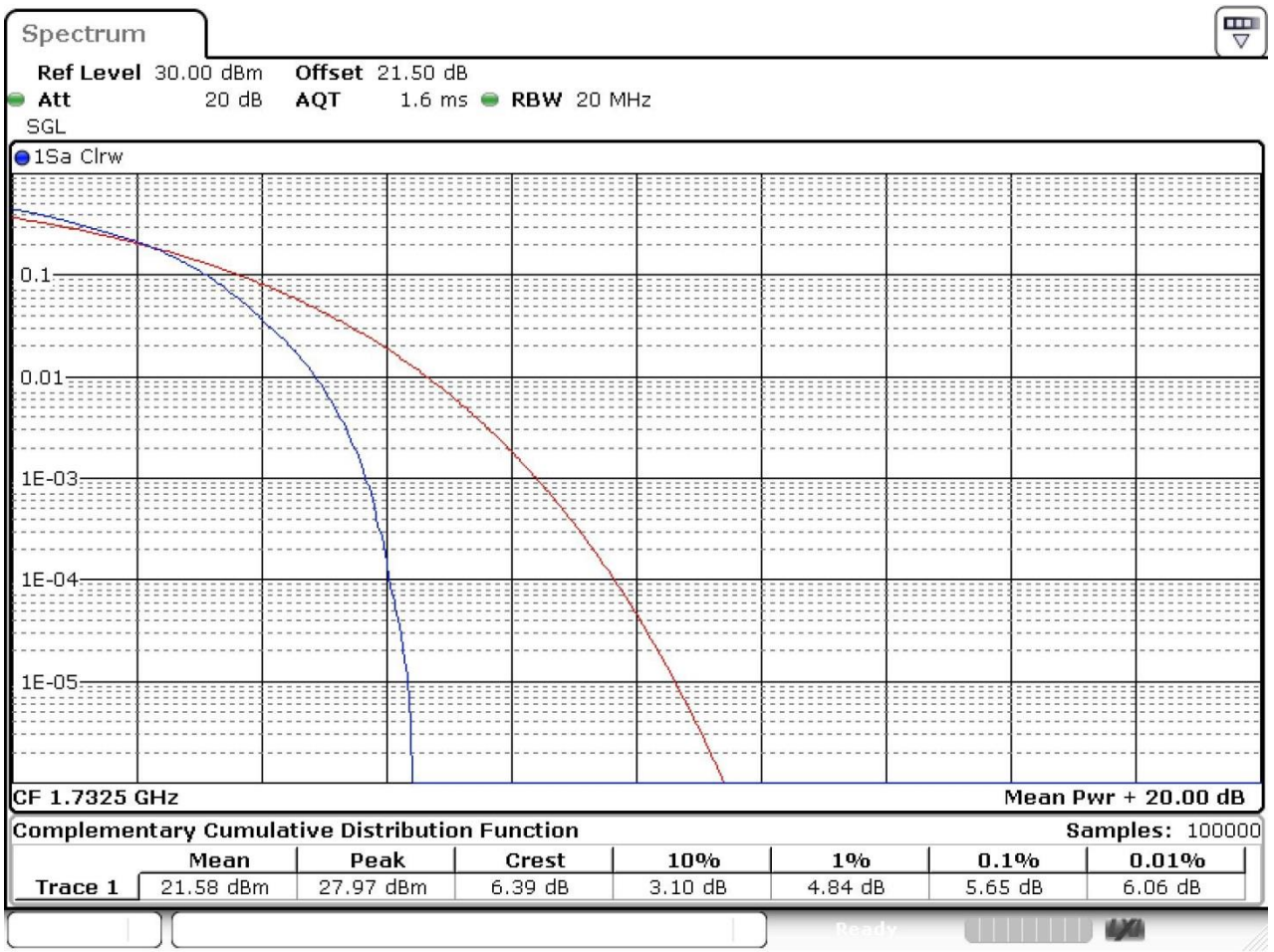
Mode	CB (MHz)	Modulation	Channel	Frequency (MHz)	Peak to Average ratio (dB)
LTE Band 4	15	QPSK	20025	1717.5	4.29
LTE Band 4	15	QPSK	20175	1732.5	4.78
LTE Band 4	15	QPSK	20325	1747.5	4.23
LTE Band 4	15	16QAM	20025	1717.5	5.16
LTE Band 4	15	16QAM	20175	1732.5	5.68
LTE Band 4	15	16QAM	20325	1747.5	5.10

Worst plots



Mode	CB (MHz)	Modulation	Channel	Frequency (MHz)	Peak to Average ratio (dB)
LTE Band 4	20	QPSK	20050	1720.0	4.26
LTE Band 4	20	QPSK	20175	1732.5	4.58
LTE Band 4	20	QPSK	20300	1745.0	4.23
LTE Band 4	20	16QAM	20050	1720.0	5.33
LTE Band 4	20	16QAM	20175	1732.5	5.65
LTE Band 4	20	16QAM	20300	1745.0	5.22

Worst plots



3.7 Frequency Stability

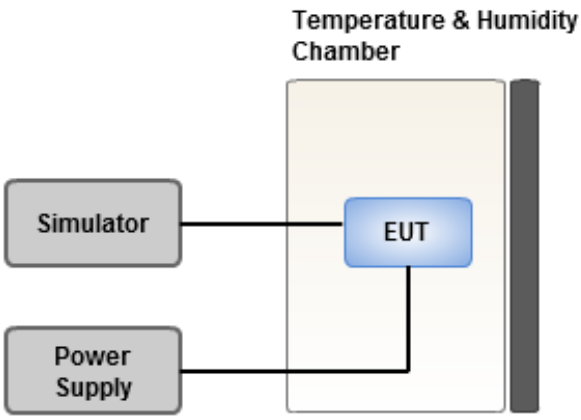
3.7.1 Limit of Frequency Stability

The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

3.7.2 Test Procedures

1. EUT was placed at temperature chamber and connected to an external power supply.
2. Temperature and voltage condition shall be tested to confirm frequency stability.
3. The test shall be performed under normal and extreme condition for temperature and voltage.
4. Tem Link up EUT and simulator. Confirm frequency drift value of simulator and record it.

3.7.3 Test Setup



3.7.4 Test Result of Frequency Stability

LTE Band 4, CB: 1.4MHz			
Temperature (°C)	**Voltage (ac)**	**Frequency Drift (ppm)**	**Limit (ppm)**
T20°CVmax	120	0.021	2.5
T20°CVmin	120	0.02	2.5
T50°CVnom	120	0.021	2.5
T40°CVnom	120	0.018	2.5
T30°CVnom	120	0.022	2.5
T20°CVnom	120	0.019	2.5
T10°CVnom	120	0.022	2.5
T0°CVnom	120	0.023	2.5
T-10°CVnom	120	0.024	2.5
T-20°CVnom	120	0.021	2.5
T-30°CVnom	120	0.022	2.5
Vnom [Vac]: 120	Vmax [Vac]: 138		Vmin [Vac]: 102
Tnom [°C]: 20	Tmax [°C]: 50		Tmin [°C]: -30

LTE Band 4, CB: 3MHz			
Temperature (°C)	**Voltage (ac)**	**Frequency Drift (ppm)**	**Limit (ppm)**
T20°CVmax	120	0.023	2.5
T20°CVmin	120	0.021	2.5
T50°CVnom	120	0.022	2.5
T40°CVnom	120	0.021	2.5
T30°CVnom	120	0.019	2.5
T20°CVnom	120	0.018	2.5
T10°CVnom	120	0.017	2.5
T0°CVnom	120	0.019	2.5
T-10°CVnom	120	0.021	2.5
T-20°CVnom	120	0.022	2.5
T-30°CVnom	120	0.024	2.5
Vnom [Vac]: 120	Vmax [Vac]: 138		Vmin [Vac]: 102
Tnom [°C]: 20	Tmax [°C]: 50		Tmin [°C]: -30

LTE Band 4, CB: 5MHz			
Temperature (°C)	**Voltage (ac)**	**Frequency Drift (ppm)**	**Limit (ppm)**
T20°CVmax	120	0.018	2.5
T20°CVmin	120	0.016	2.5
T50°CVnom	120	0.02	2.5
T40°CVnom	120	0.021	2.5
T30°CVnom	120	0.018	2.5
T20°CVnom	120	0.019	2.5
T10°CVnom	120	0.022	2.5
T0°CVnom	120	0.023	2.5
T-10°CVnom	120	0.021	2.5
T-20°CVnom	120	0.018	2.5
T-30°CVnom	120	0.019	2.5
Vnom [Vac]: 120	Vmax [Vac]: 138		Vmin [Vac]: 102
Tnom [°C]: 20	Tmax [°C]: 50		Tmin [°C]: -30

LTE Band 4, CB: 10MHz			
Temperature (°C)	**Voltage (ac)**	**Frequency Drift (ppm)**	**Limit (ppm)**
T20°CVmax	120	0.016	2.5
T20°CVmin	120	0.018	2.5
T50°CVnom	120	0.019	2.5
T40°CVnom	120	0.021	2.5
T30°CVnom	120	0.022	2.5
T20°CVnom	120	0.023	2.5
T10°CVnom	120	0.024	2.5
T0°CVnom	120	0.021	2.5
T-10°CVnom	120	0.022	2.5
T-20°CVnom	120	0.019	2.5
T-30°CVnom	120	0.018	2.5
Vnom [Vac]: 120	Vmax [Vac]: 138		Vmin [Vac]: 102
Tnom [°C]: 20	Tmax [°C]: 50		Tmin [°C]: -30

LTE Band 4, CB: 15MHz			
Temperature (°C)	**Voltage (ac)**	**Frequency Drift (ppm)**	**Limit (ppm)**
T20°CVmax	120	0.023	2.5
T20°CVmin	120	0.021	2.5
T50°CVnom	120	0.018	2.5
T40°CVnom	120	0.019	2.5
T30°CVnom	120	0.016	2.5
T20°CVnom	120	0.016	2.5
T10°CVnom	120	0.017	2.5
T0°CVnom	120	0.019	2.5
T-10°CVnom	120	0.021	2.5
T-20°CVnom	120	0.022	2.5
T-30°CVnom	120	0.021	2.5
Vnom [Vac]: 120	Vmax [Vac]: 138		Vmin [Vac]: 102
Tnom [°C]: 20	Tmax [°C]: 50		Tmin [°C]: -30

LTE Band 4, CB: 20MHz			
Temperature (°C)	**Voltage (ac)**	**Frequency Drift (ppm)**	**Limit (ppm)**
T20°CVmax	120	0.015	2.5
T20°CVmin	120	0.016	2.5
T50°CVnom	120	0.021	2.5
T40°CVnom	120	0.022	2.5
T30°CVnom	120	0.019	2.5
T20°CVnom	120	0.018	2.5
T10°CVnom	120	0.021	2.5
T0°CVnom	120	0.022	2.5
T-10°CVnom	120	0.016	2.5
T-20°CVnom	120	0.017	2.5
T-30°CVnom	120	0.019	2.5
Vnom [Vac]: 120	Vmax [Vac]: 138		Vmin [Vac]: 102
Tnom [°C]: 20	Tmax [°C]: 50		Tmin [°C]: -30

4 Test laboratory information

Established in 2012, ICC provides foremost EMC & RF Testing and advisory consultation services by our skilled engineers and technicians. Our services employ a wide variety of advanced edge test equipment and one of the widest certification extents in the business.

International Certification Corp (EMC and Wireless Communication Laboratory), it is our definitive objective is to institute long term, trust-based associations with our clients. The expectation we set up with our clients is based on outstanding service, practical expertise and devotion to a certified value structure. Our passion is to grant our clients with best EMC / RF services by oriented knowledgeable and accommodating staff.

Our Test sites are located at Linkou District and Kwei Shan Hsiang. Location map can be found on our website http://www.icertifi.com.tw.

Linkou	**Kwei Shan**	**Kwei Shan Site II**
Tel: 886-2-2601-1640	Tel: 886-3-271-8666	Tel: 886-3-271-8640
No. 30-2, Ding Fwu Tsuen, Lin Kou District, New Taipei City, Taiwan, R.O.C.	No. 3-1, Lane 6, Wen San 3rd St., Kwei Shan District, Tao Yuan City 333, Taiwan, R.O.C.	No. 14-1, Lane 19, Wen San 3rd St., Kwei Shan District, Tao Yuan City 333, Taiwan, R.O.C..

If you have any suggestion, please feel free to contact us as below information

Tel: 886-3-271-8666
Fax: 886-3-318-0155
Email: ICC_Service@icertifi.com.tw

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