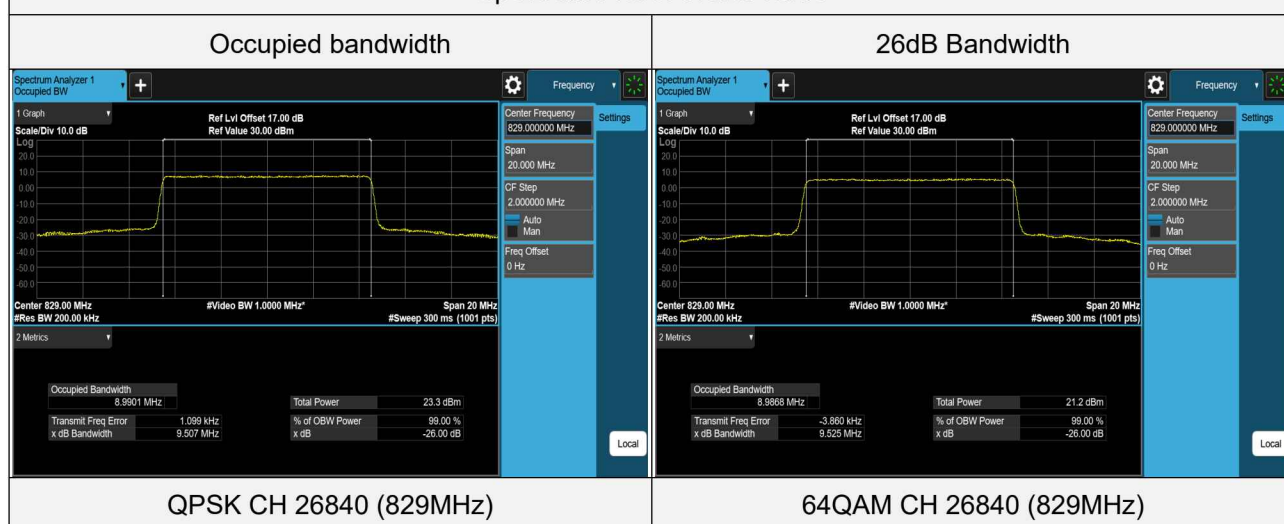


### LTE Band 26 (Channel Bandwidth 10MHz)

Test Condition	Channel	Frequency (MHz)	Occupied bandwidth (MHz)	26dB Bandwidth (MHz)
QPSK	26840	829	8.9901	9.507
QPSK	26915	836.5	8.9750	9.496
QPSK	26990	844	8.9771	9.501
16QAM	26840	829	8.9810	9.509
16QAM	26915	836.5	8.9737	9.496
16QAM	26990	844	8.9814	9.497
64QAM	26840	829	8.9868	9.525
64QAM	26915	836.5	8.9768	9.504
64QAM	26990	844	8.9804	9.497

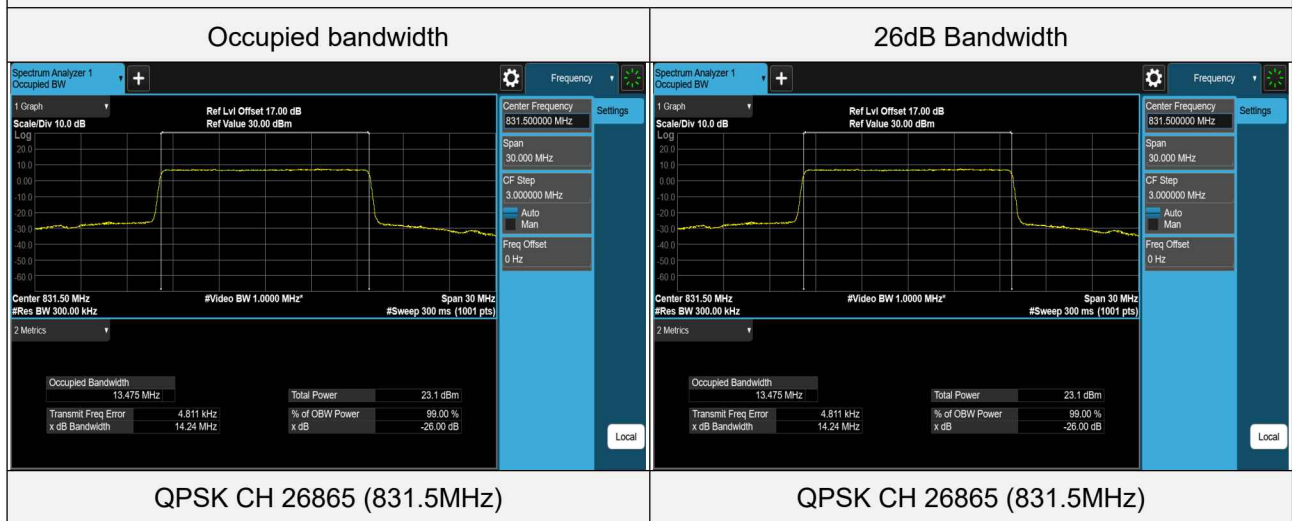
### Spectrum Plot of Worst Value



LTE Band 26 (Channel Bandwidth 15MHz)

Test Condition	Channel	Frequency (MHz)	Occupied bandwidth (MHz)	26dB Bandwidth (MHz)
QPSK	26865	831.5	13.475	14.24
QPSK	26915	836.5	13.462	14.23
QPSK	26965	841.5	13.465	14.22
16QAM	26865	831.5	13.457	14.24
16QAM	26915	836.5	13.445	14.22
16QAM	26965	841.5	13.455	14.23
64QAM	26865	831.5	13.455	14.24
64QAM	26915	836.5	13.442	14.23
64QAM	26965	841.5	13.448	14.22

Spectrum Plot of Worst Value

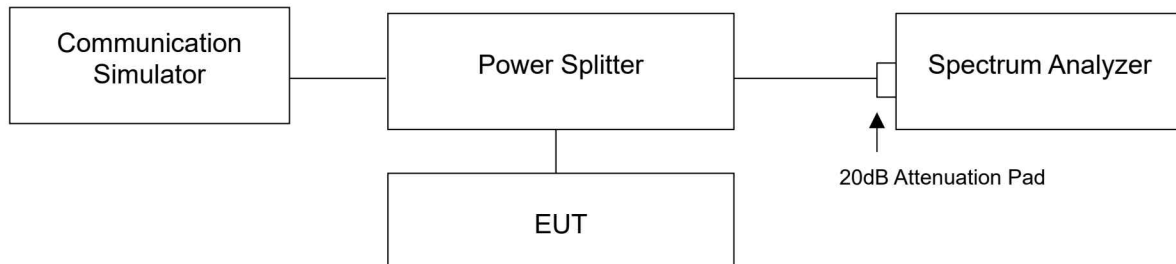


## 4.5 Band Edge Measurement

### 4.5.1 Limits of Band Edge Measurement

Power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log(P)$  dB. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

### 4.5.2 Test Setup



### 4.5.3 Test Procedures

- All measurements were done at low and high operational frequency range.
- The center frequency of spectrum is the band edge frequency and span is 2MHz. RB of the spectrum is 10kHz and VB of the spectrum is 30kHz (GPRS / EDGE).
- The center frequency of spectrum is the band edge frequency and span is 1MHz. RB of the spectrum is 30kHz and VB of the spectrum is 100kHz (LTE Channel Bandwidth 1.4MHz).
- The center frequency of spectrum is the band edge frequency and span is 1MHz. RB of the spectrum is 62kHz and VB of the spectrum is 200kHz (LTE Channel Bandwidth 3MHz).
- The center frequency of spectrum is the band edge frequency and span is 1MHz. RB of the spectrum is 100kHz and VB of the spectrum is 300kHz (LTE Channel Bandwidth 5MHz).
- The center frequency of spectrum is the band edge frequency and span is 1MHz. RB of the spectrum is 200kHz and VB of the spectrum is 620kHz (LTE Channel Bandwidth 10MHz).
- The center frequency of spectrum is the band edge frequency and span is 1MHz. RB of the spectrum is 300kHz and VB of the spectrum is 1MHz (LTE Channel Bandwidth 15MHz).
- Record the max trace plot into the test report.

### 4.5.4 Test Results

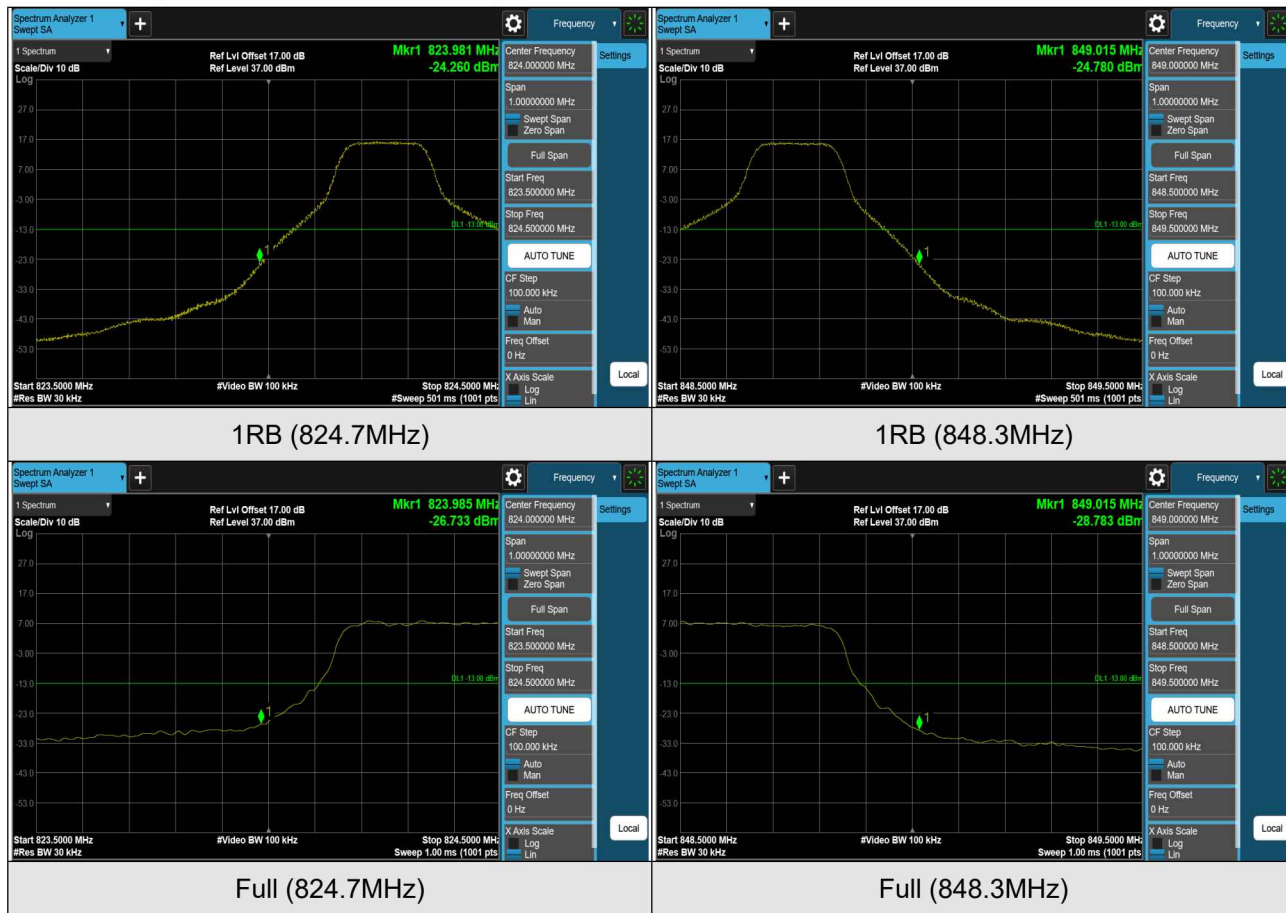
#### GPRS



#### EDGE

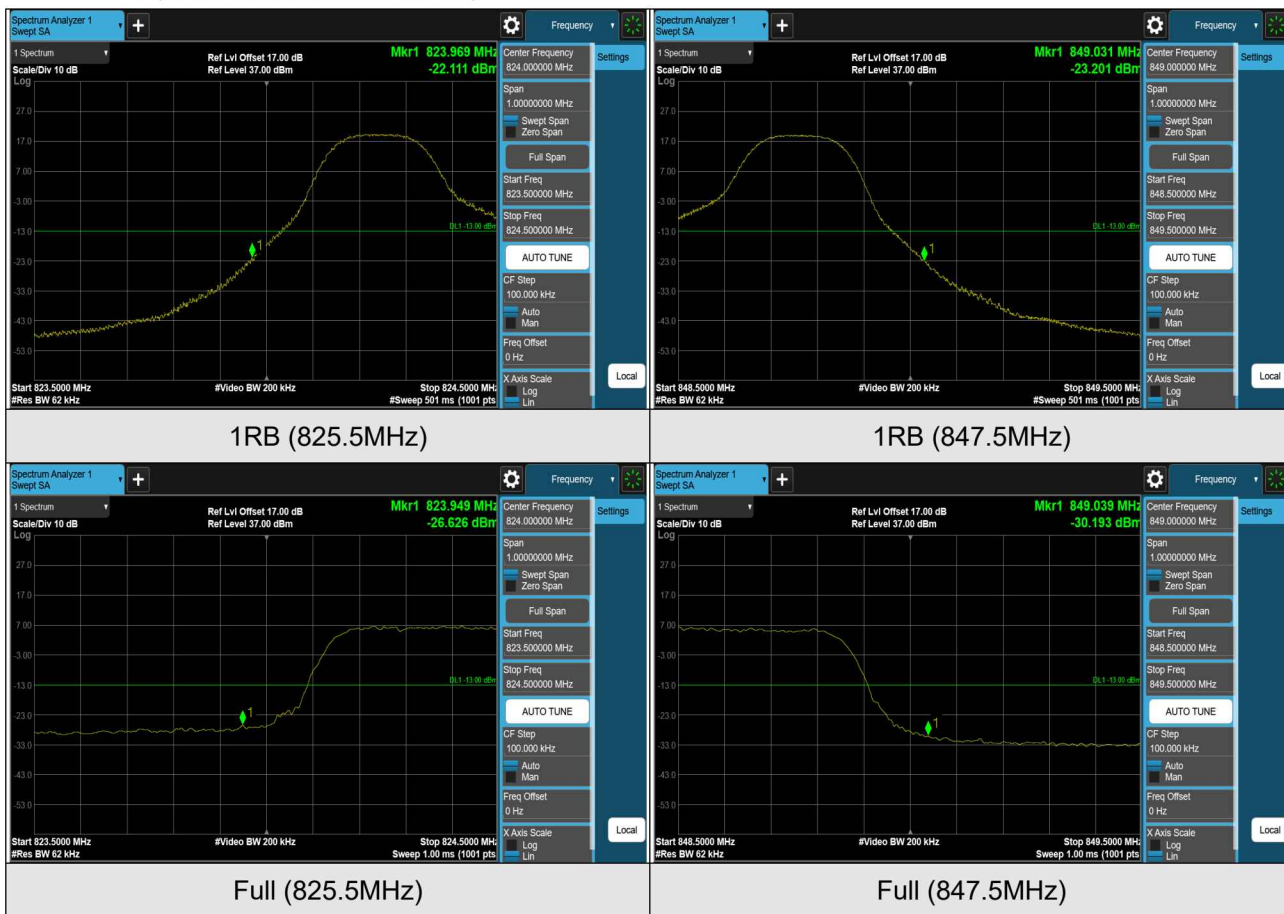


### LTE Band 5 (Channel Bandwidth 1.4MHz)

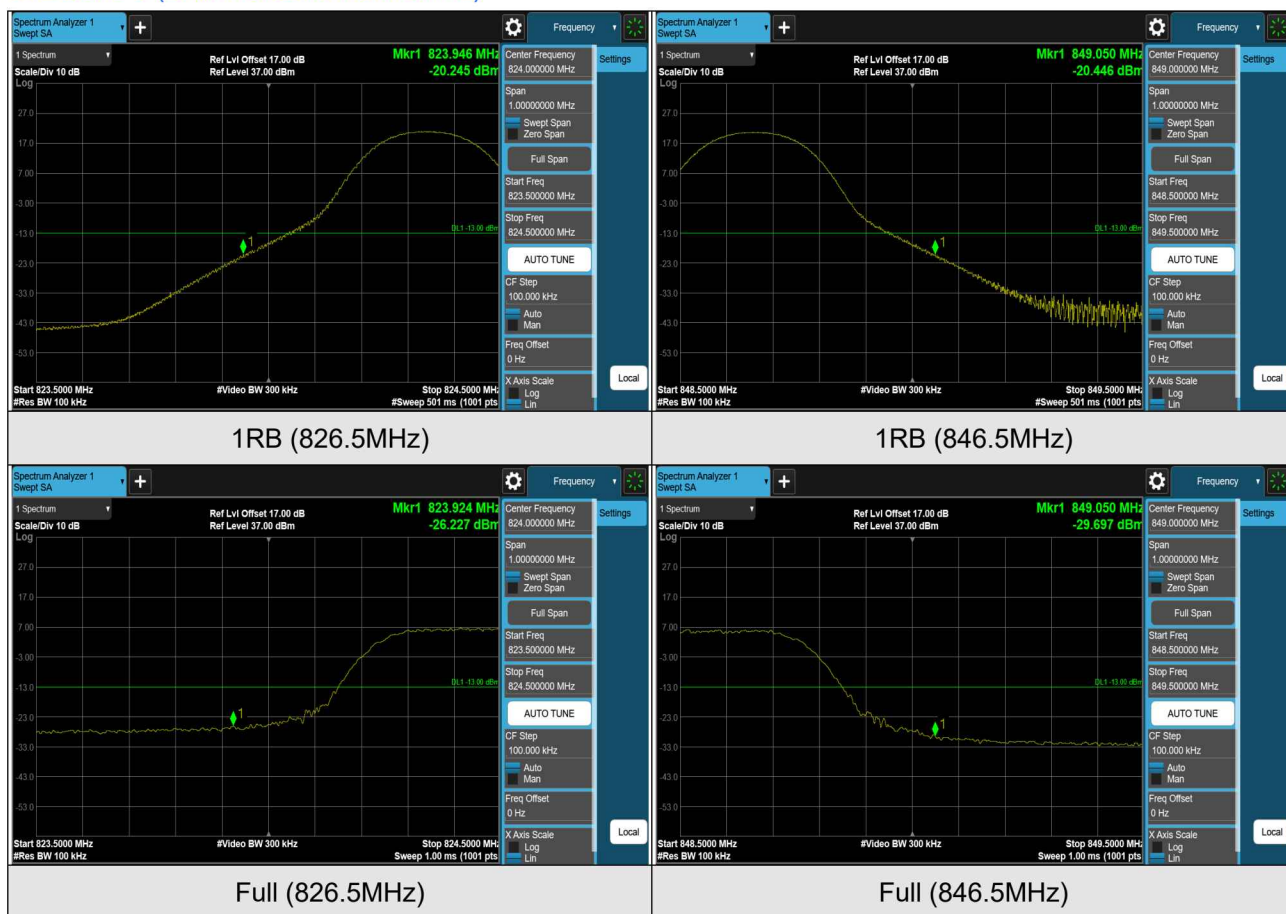




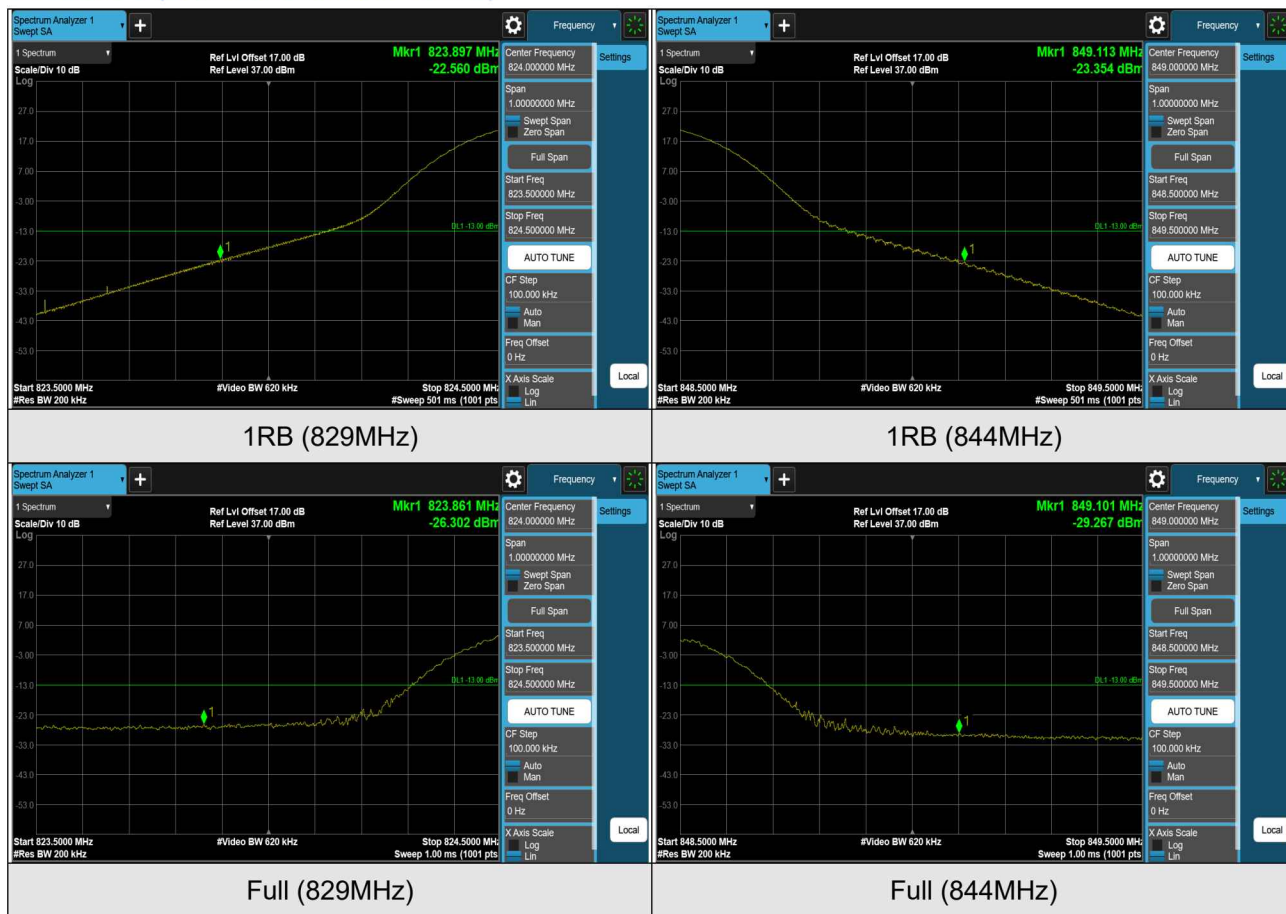
### LTE Band 5 (Channel Bandwidth 3MHz)



### LTE Band 5 (Channel Bandwidth 5MHz)

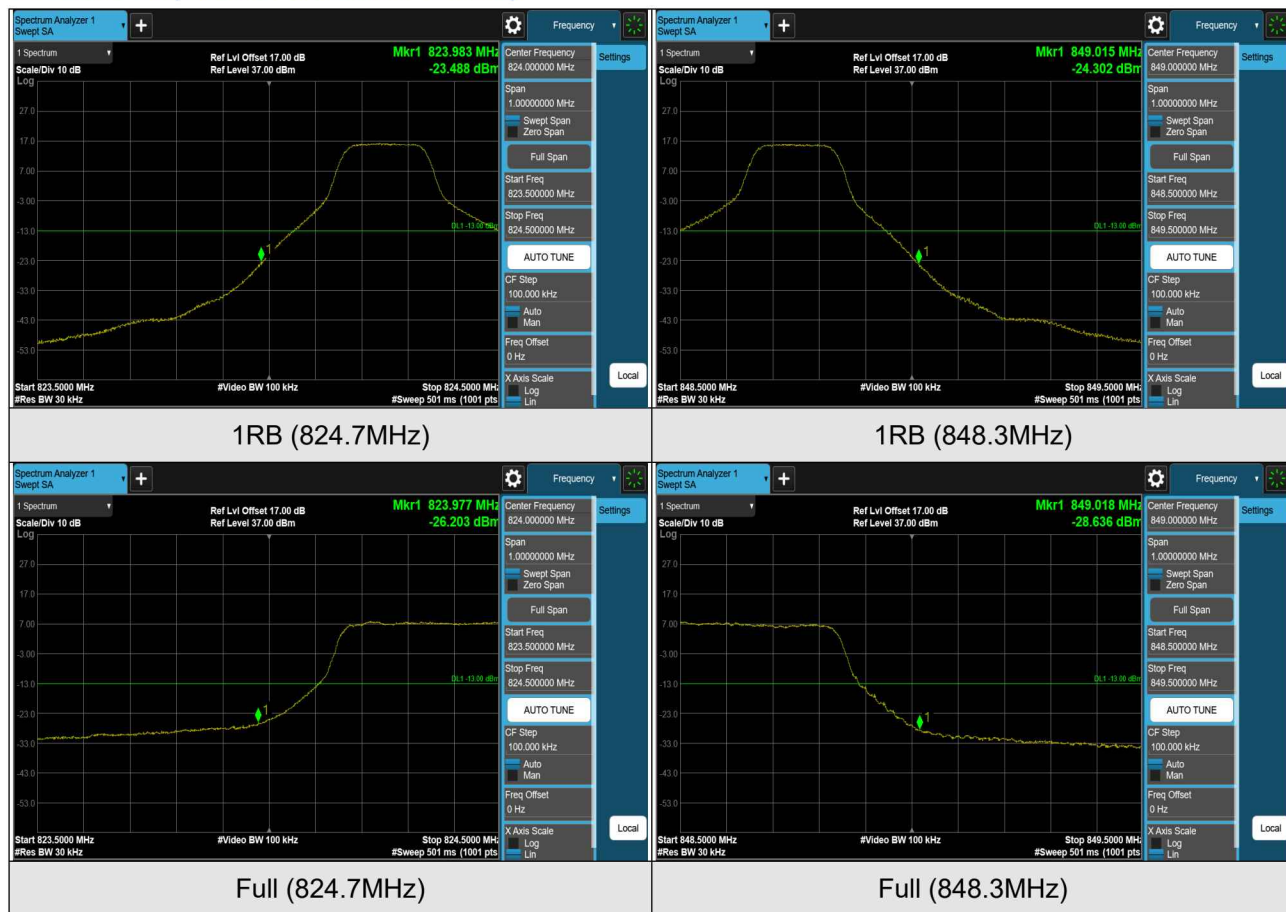


### LTE Band 5 (Channel Bandwidth 10MHz)

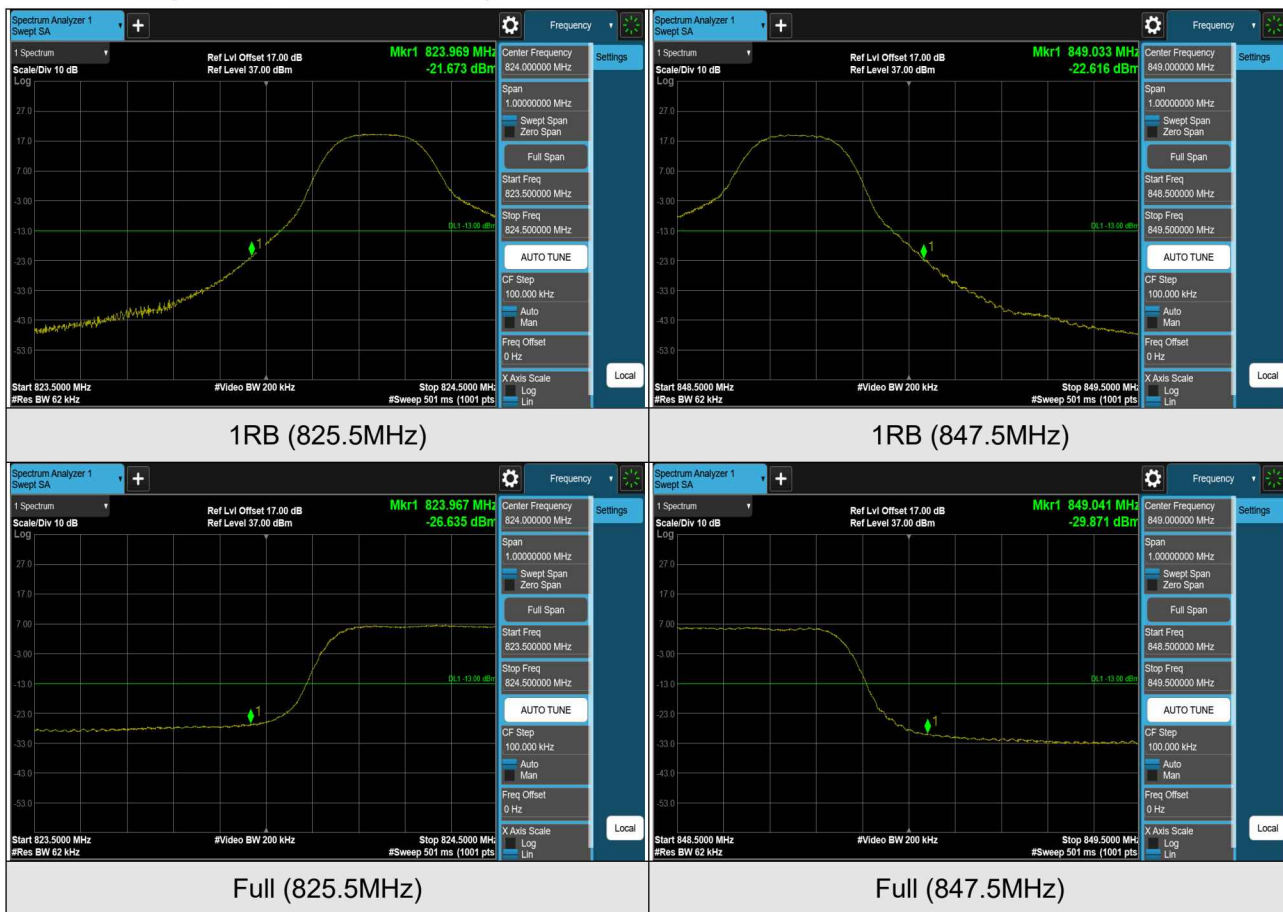




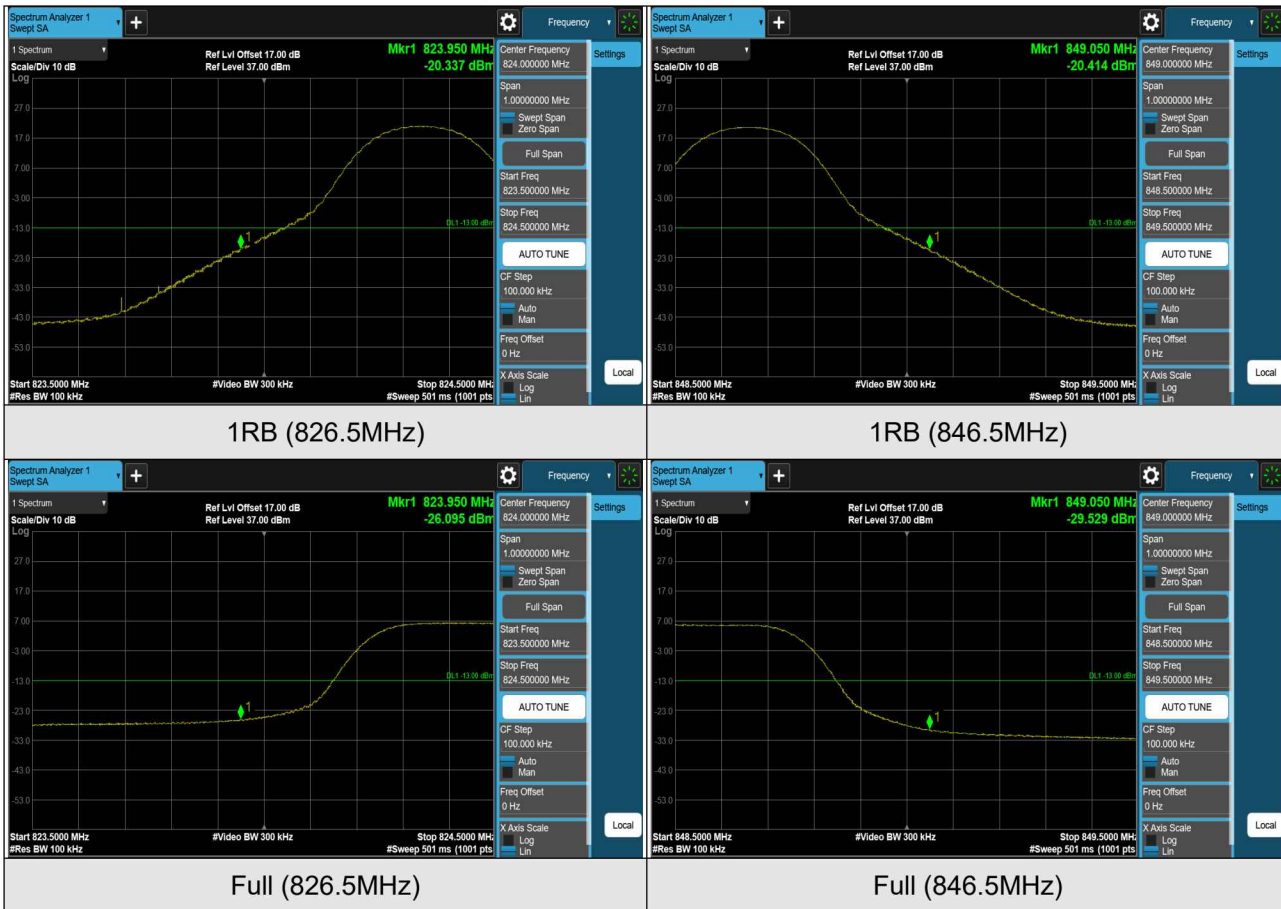
### LTE Band 26 (Channel Bandwidth 1.4MHz)



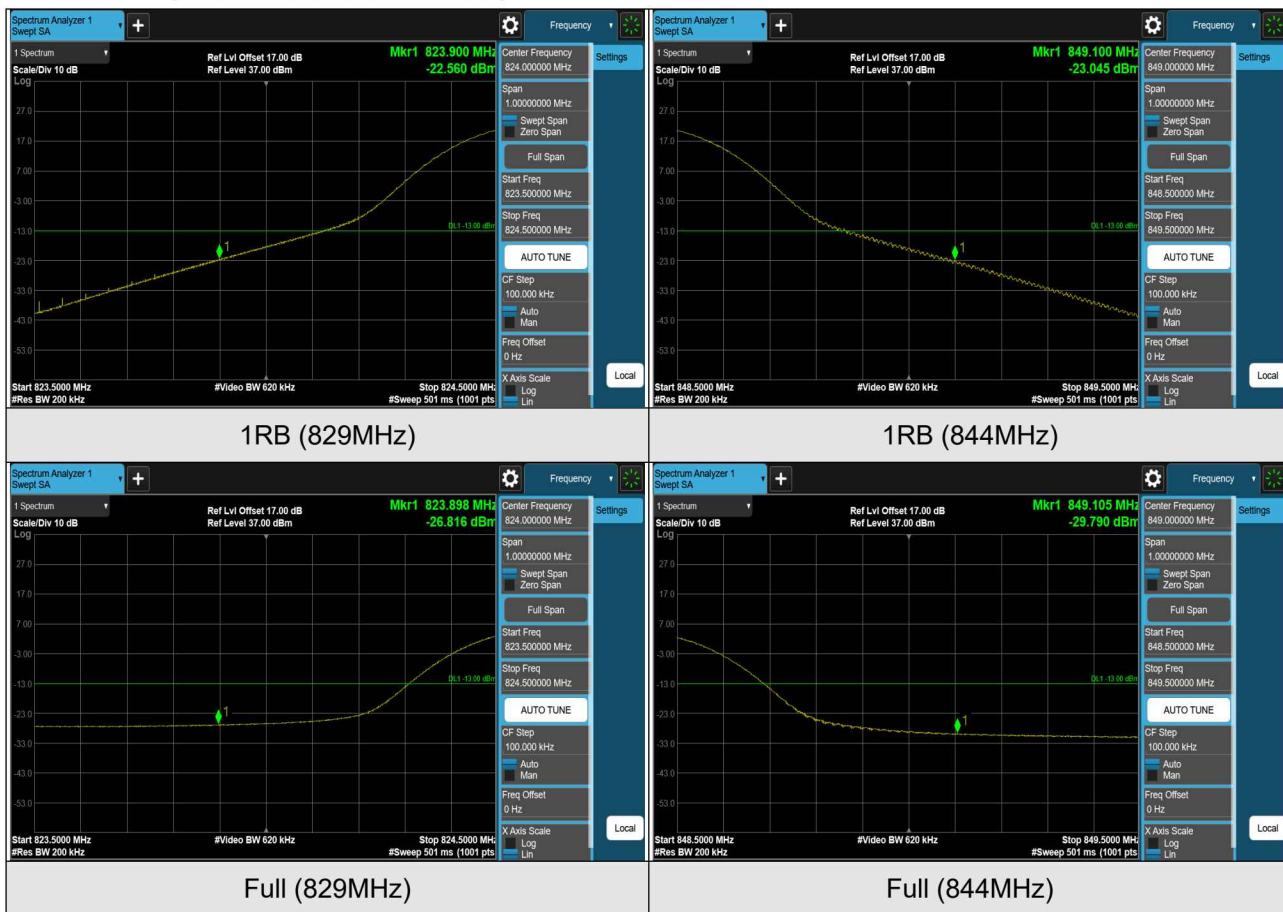
### LTE Band 26 (Channel Bandwidth 3MHz)



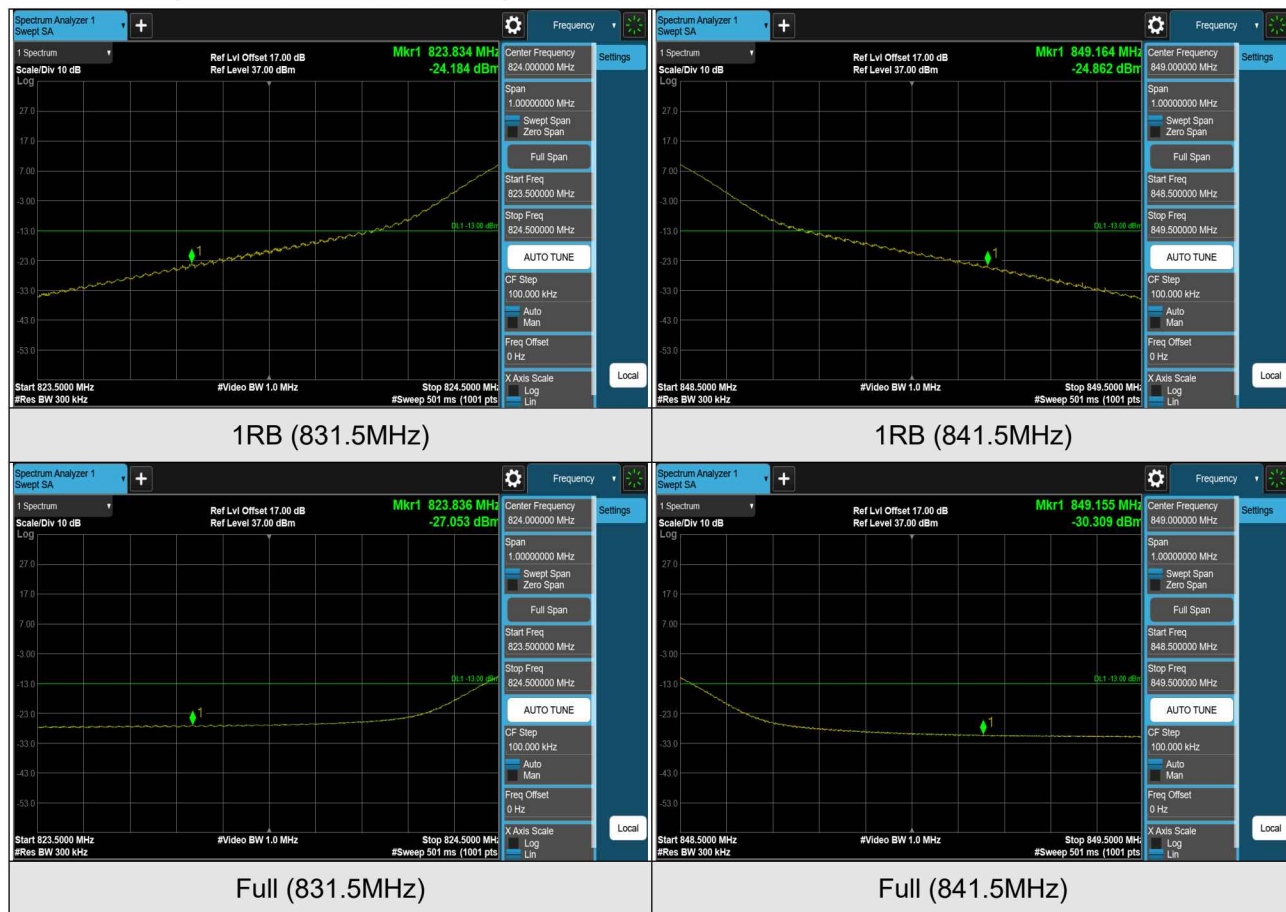
### LTE Band 26 (Channel Bandwidth 5MHz)



### LTE Band 26 (Channel Bandwidth 10MHz)



### LTE Band 26 (Channel Bandwidth 15MHz)

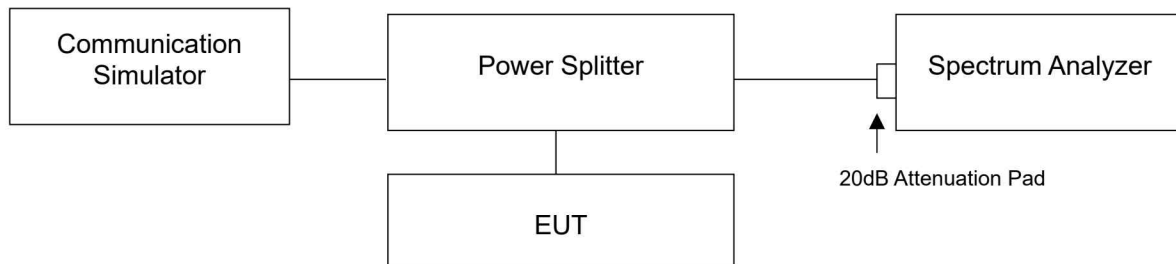


## 4.6 Peak to Average Ratio

### 4.6.1 Limits of Peak to Average Ratio Measurement

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

### 4.6.2 Test Setup



### 4.6.3 Test Procedures

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

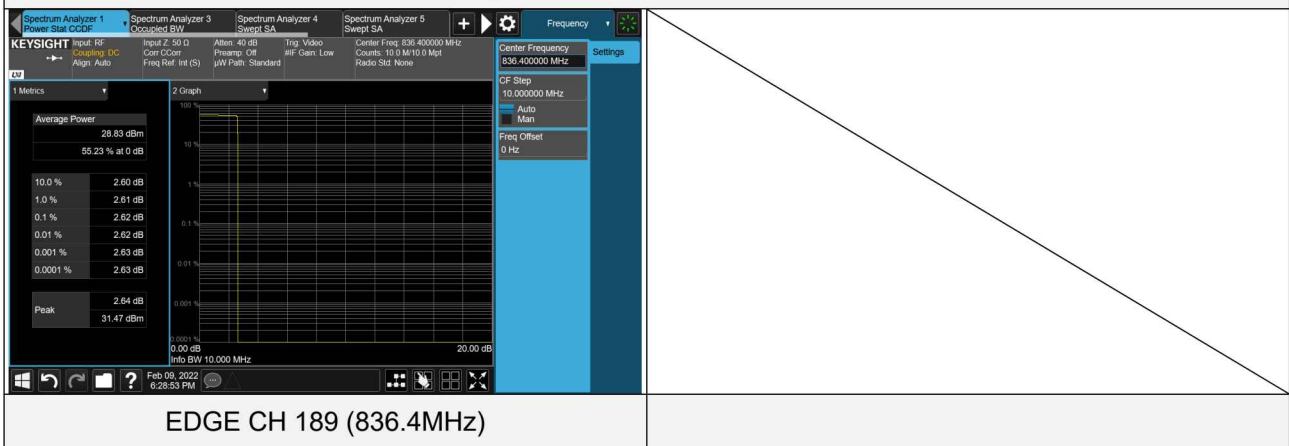


#### 4.6.4 Test Results

##### GPRS, EDGE

Test Condition	Channel	Frequency (MHz)	Measure. Value (dB)	Limit (dB)	Result
GPRS	128	824.2	2.61	13	Pass
GPRS	189	836.4	2.61	13	Pass
GPRS	251	848.8	2.62	13	Pass
EDGE	128	824.2	2.61	13	Pass
EDGE	189	836.4	2.62	13	Pass
EDGE	251	848.8	2.61	13	Pass

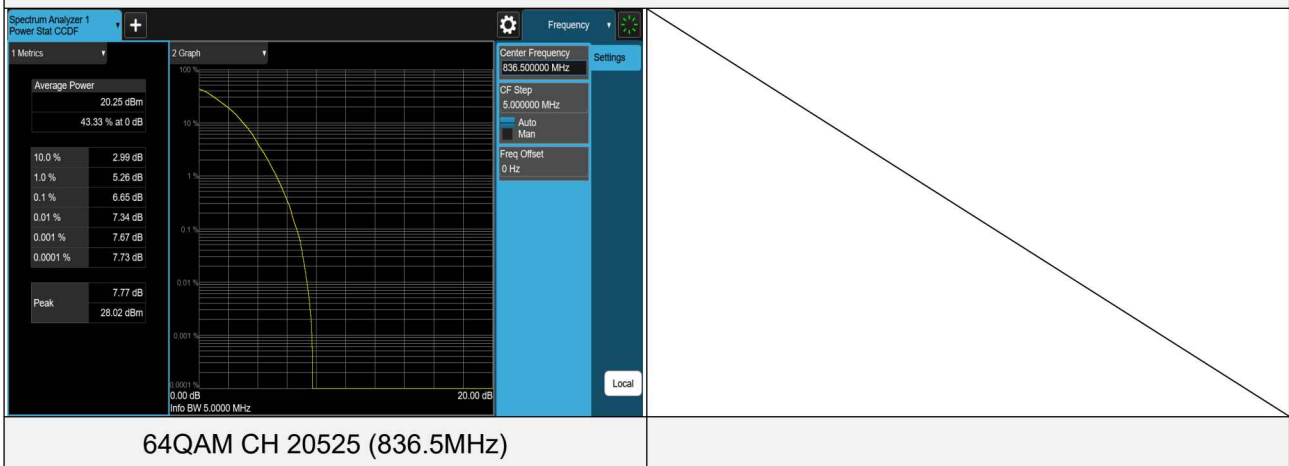
Spectrum Plot of Worst Value



LTE Band 5 (Channel Bandwidth 1.4MHz)

Test Condition	Channel	Frequency (MHz)	Measure. Value (dB)	Limit (dB)	Result
QPSK	20407	824.7	5.44	13	Pass
QPSK	20525	836.5	5.83	13	Pass
QPSK	20643	848.3	5.45	13	Pass
16QAM	20407	824.7	6.35	13	Pass
16QAM	20525	836.5	6.59	13	Pass
16QAM	20643	848.3	6.34	13	Pass
64QAM	20407	824.7	6.49	13	Pass
64QAM	20525	836.5	6.65	13	Pass
64QAM	20643	848.3	6.55	13	Pass

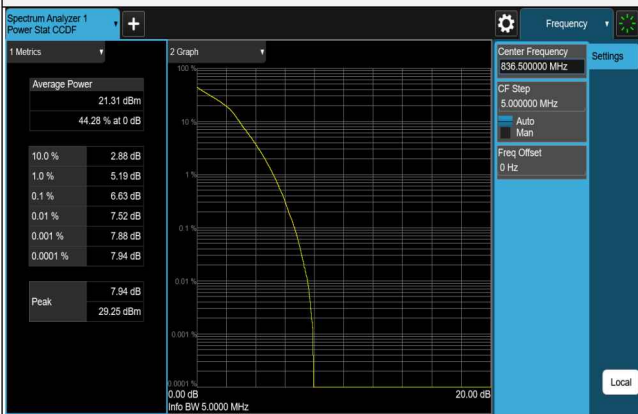
Spectrum Plot of Worst Value



LTE Band 5 (Channel Bandwidth 3MHz)

Test Condition	Channel	Frequency (MHz)	Measure. Value (dB)	Limit (dB)	Result
QPSK	20415	825.5	5.62	13	Pass
QPSK	20525	836.5	5.77	13	Pass
QPSK	20635	847.5	5.71	13	Pass
16QAM	20415	825.5	6.41	13	Pass
16QAM	20525	836.5	6.63	13	Pass
16QAM	20635	847.5	6.58	13	Pass
64QAM	20415	825.5	6.53	13	Pass
64QAM	20525	836.5	6.61	13	Pass
64QAM	20635	847.5	6.62	13	Pass

Spectrum Plot of Worst Value

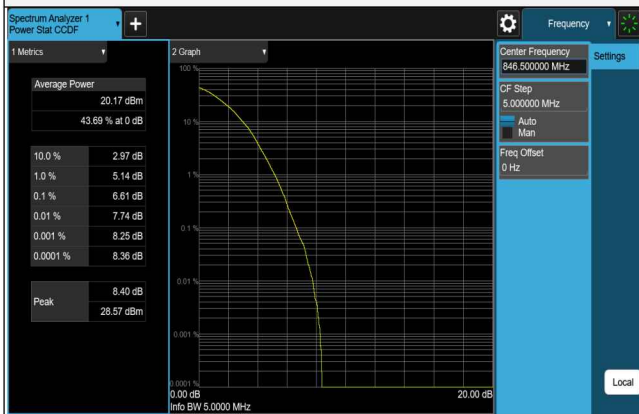


16QAM CH 20525 (836.5MHz)

LTE Band 5 (Channel Bandwidth 5MHz)

Test Condition	Channel	Frequency (MHz)	Measure. Value (dB)	Limit (dB)	Result
QPSK	20425	826.5	5.73	13	Pass
QPSK	20525	836.5	5.82	13	Pass
QPSK	20625	846.5	5.72	13	Pass
16QAM	20425	826.5	6.39	13	Pass
16QAM	20525	836.5	6.49	13	Pass
16QAM	20625	846.5	6.45	13	Pass
64QAM	20425	826.5	6.57	13	Pass
64QAM	20525	836.5	6.60	13	Pass
64QAM	20625	846.5	6.61	13	Pass

Spectrum Plot of Worst Value

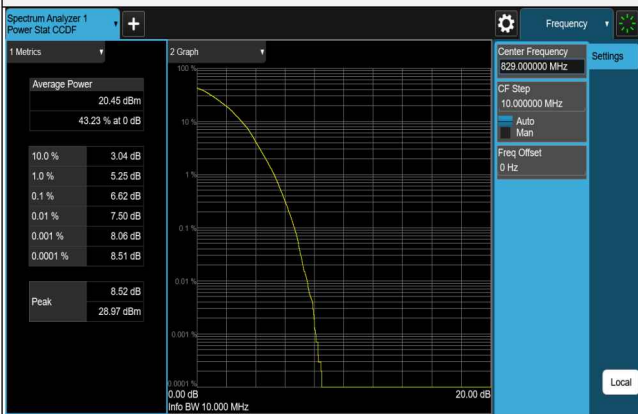


64QAM CH 20625 (846.5MHz)

LTE Band 5 (Channel Bandwidth 10MHz)

Test Condition	Channel	Frequency (MHz)	Measure. Value (dB)	Limit (dB)	Result
QPSK	20450	829	5.87	13	Pass
QPSK	20525	836.5	5.78	13	Pass
QPSK	20600	844	5.85	13	Pass
16QAM	20450	829	6.46	13	Pass
16QAM	20525	836.5	6.47	13	Pass
16QAM	20600	844	6.45	13	Pass
64QAM	20450	829	6.62	13	Pass
64QAM	20525	836.5	6.51	13	Pass
64QAM	20600	844	6.55	13	Pass

Spectrum Plot of Worst Value

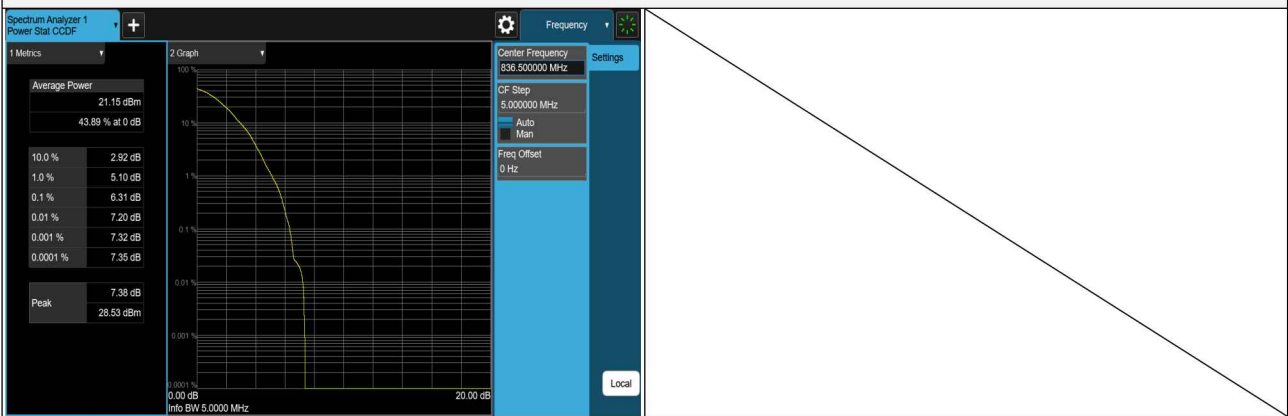


64QAM CH 20450 (829MHz)

LTE Band 26 (Channel Bandwidth 1.4MHz)

Test Condition	Channel	Frequency (MHz)	Measure. Value (dB)	Limit (dB)	Result
QPSK	26797	824.7	4.54	13	Pass
QPSK	26915	836.5	4.95	13	Pass
QPSK	27033	848.3	4.54	13	Pass
16QAM	26797	824.7	5.60	13	Pass
16QAM	26915	836.5	6.00	13	Pass
16QAM	27033	848.3	5.66	13	Pass
64QAM	26797	824.7	5.36	13	Pass
64QAM	26915	836.5	6.31	13	Pass
64QAM	27033	848.3	6.07	13	Pass

Spectrum Plot of Worst Value



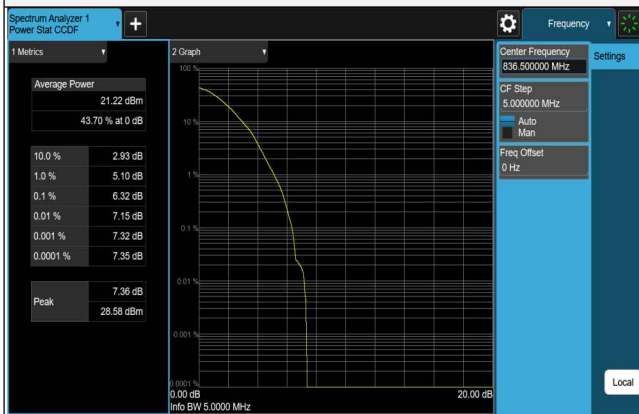
64QAM CH 26915 (836.5MHz)



LTE Band 26 (Channel Bandwidth 3MHz)

Test Condition	Channel	Frequency (MHz)	Measure. Value (dB)	Limit (dB)	Result
QPSK	26805	825.5	4.48	13	Pass
QPSK	26915	836.5	4.91	13	Pass
QPSK	27025	847.5	4.77	13	Pass
16QAM	26805	825.5	5.59	13	Pass
16QAM	26915	836.5	6.02	13	Pass
16QAM	27025	847.5	5.81	13	Pass
64QAM	26805	825.5	6.00	13	Pass
64QAM	26915	836.5	6.32	13	Pass
64QAM	27025	847.5	6.24	13	Pass

Spectrum Plot of Worst Value

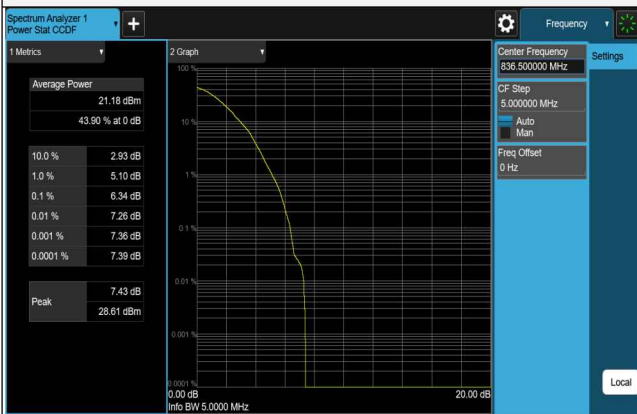


64QAM CH 26915 (836.5MHz)

LTE Band 26 (Channel Bandwidth 5MHz)

Test Condition	Channel	Frequency (MHz)	Measure. Value (dB)	Limit (dB)	Result
QPSK	26815	826.5	4.51	13	Pass
QPSK	26915	836.5	4.99	13	Pass
QPSK	27015	846.5	4.75	13	Pass
16QAM	26815	826.5	5.55	13	Pass
16QAM	26915	836.5	6.06	13	Pass
16QAM	27015	846.5	5.85	13	Pass
64QAM	26815	826.5	6.00	13	Pass
64QAM	26915	836.5	6.34	13	Pass
64QAM	27015	846.5	6.20	13	Pass

Spectrum Plot of Worst Value



64QAM CH 26915 (836.5MHz)