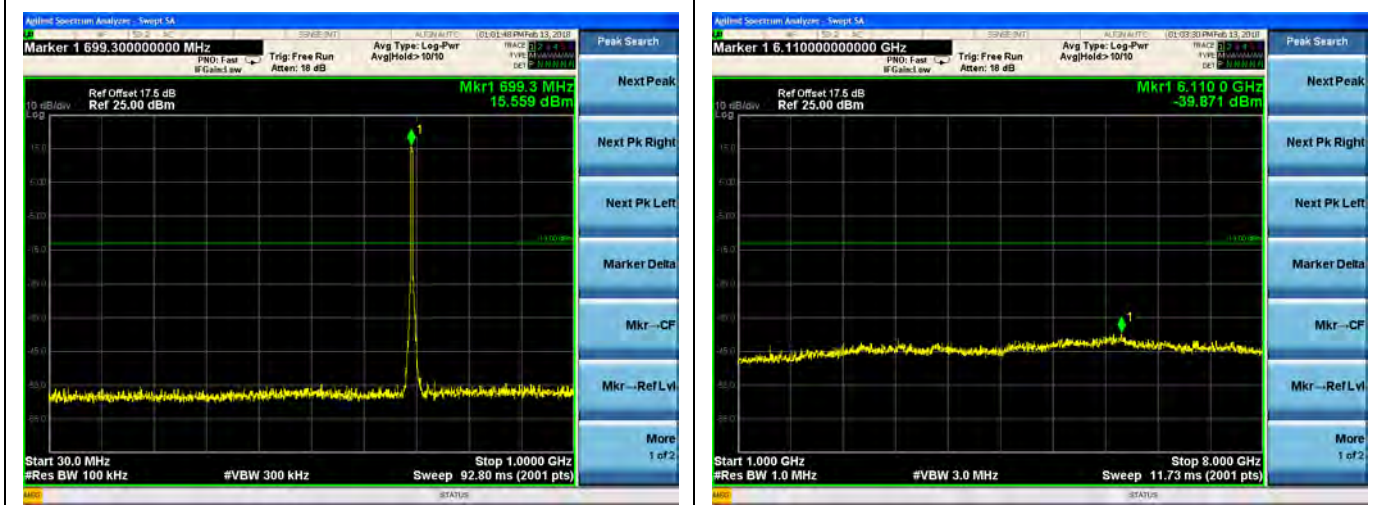




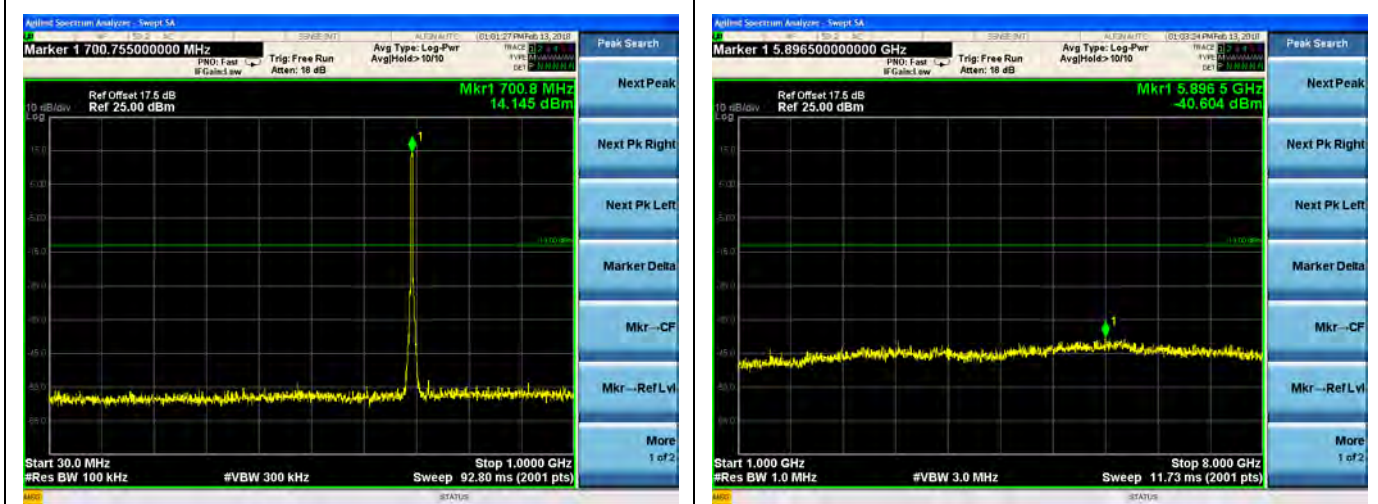
REPORT No.: SZ17120080W07

LTE Band 12 3MHz BW Low Channel

QPSK



16QAM

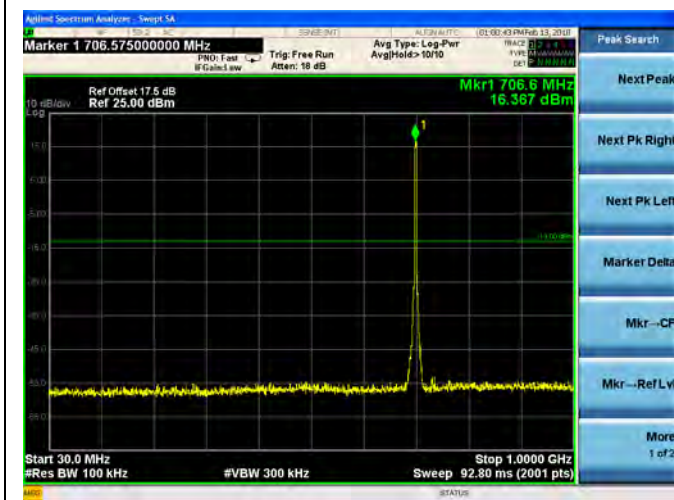




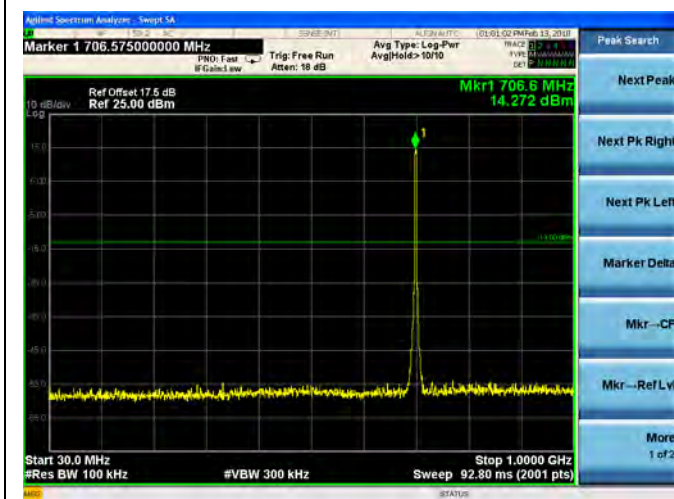
REPORT No.: SZ17120080W07

LTE Band 12 3MHz BW Mid Channel

QPSK



16QAM

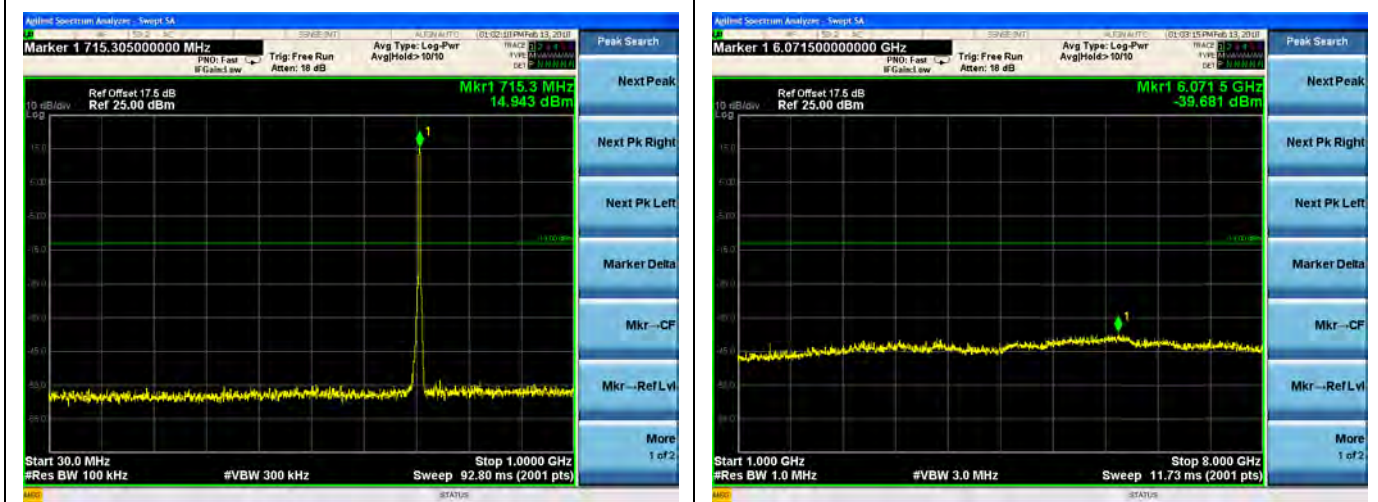




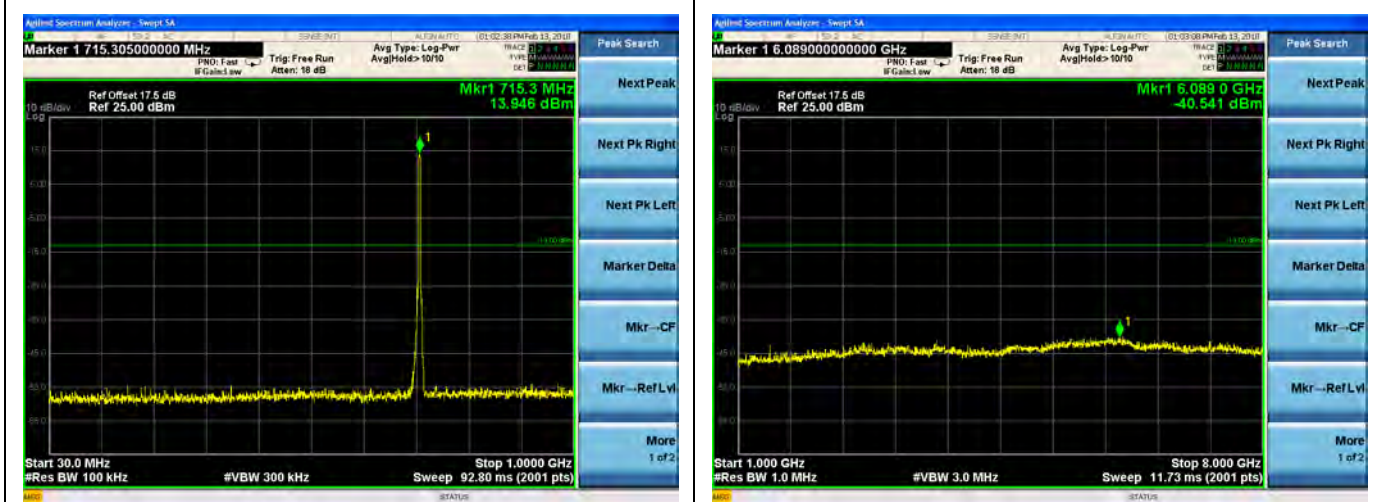
REPORT No.: SZ17120080W07

LTE Band 12 3MHz BW High Channel

QPSK



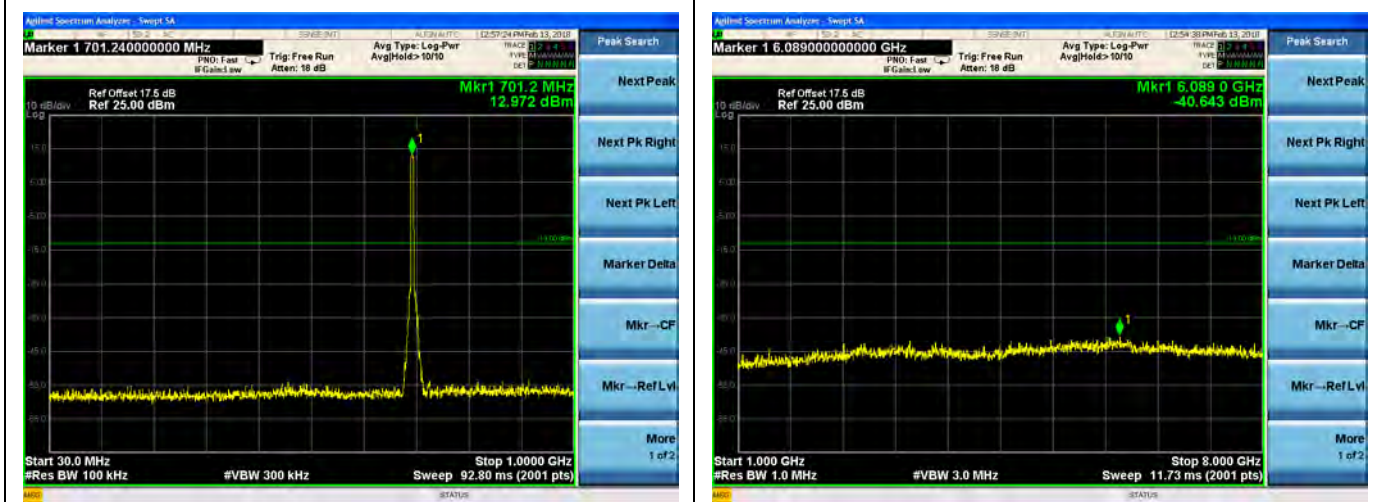
16QAM



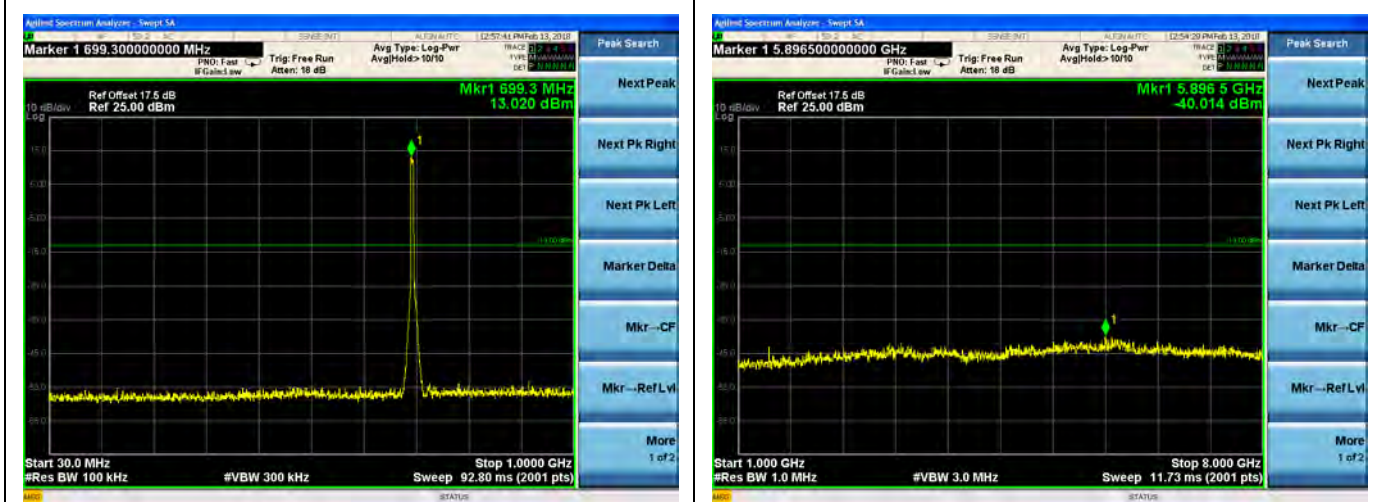


LTE Band 12 5MHz BW Low Channel

QPSK



16QAM

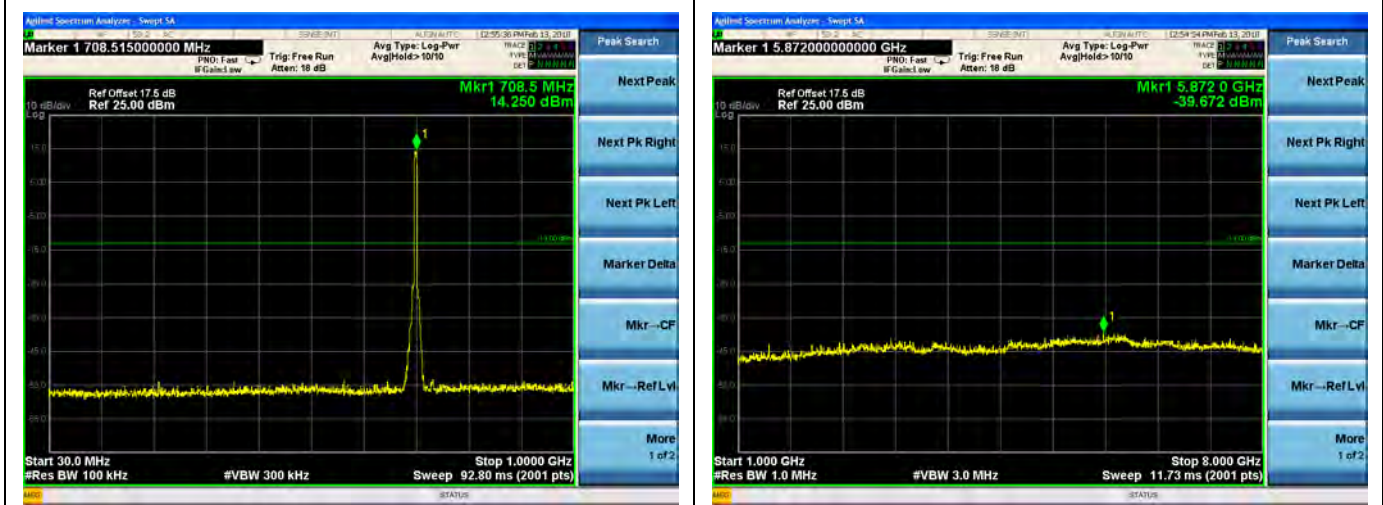




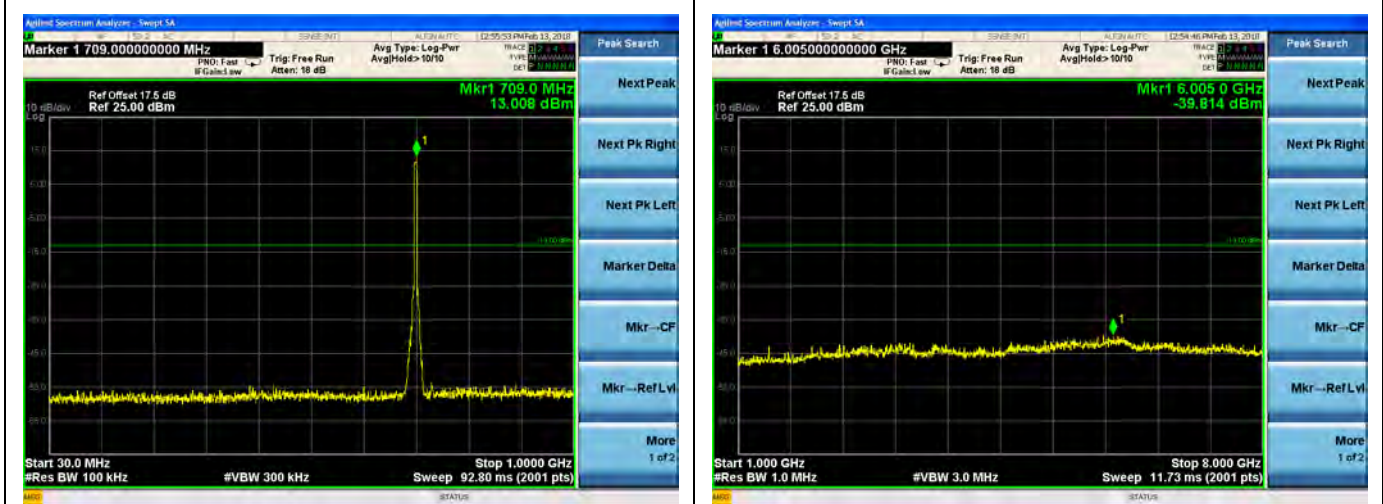
REPORT No.: SZ17120080W07

LTE Band 12 5MHz BW Mid Channel

QPSK



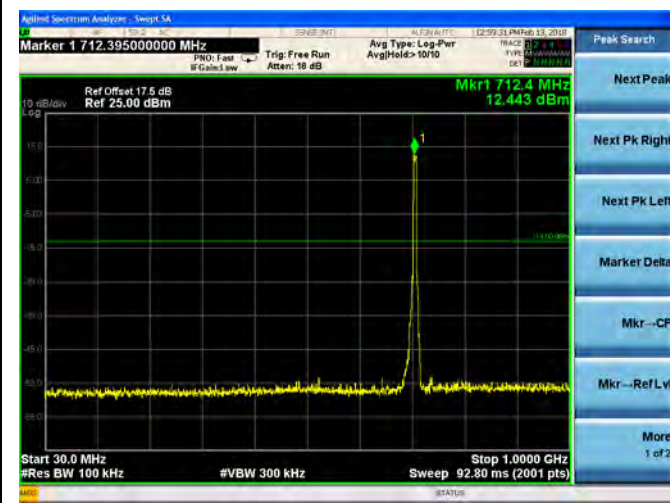
16QAM



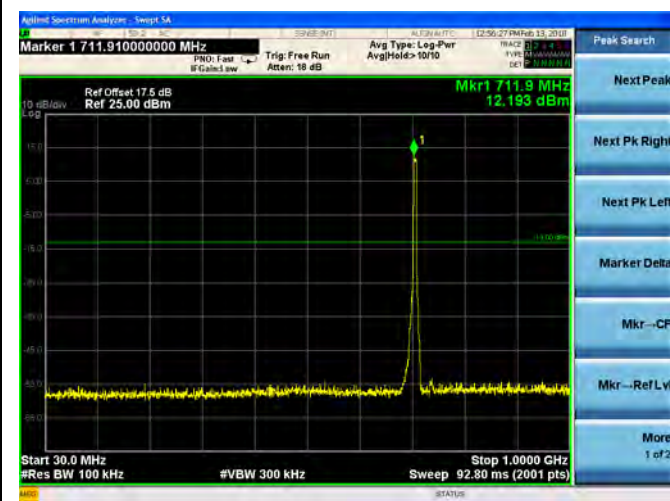


LTE Band 12 5MHz BW High Channel

QPSK



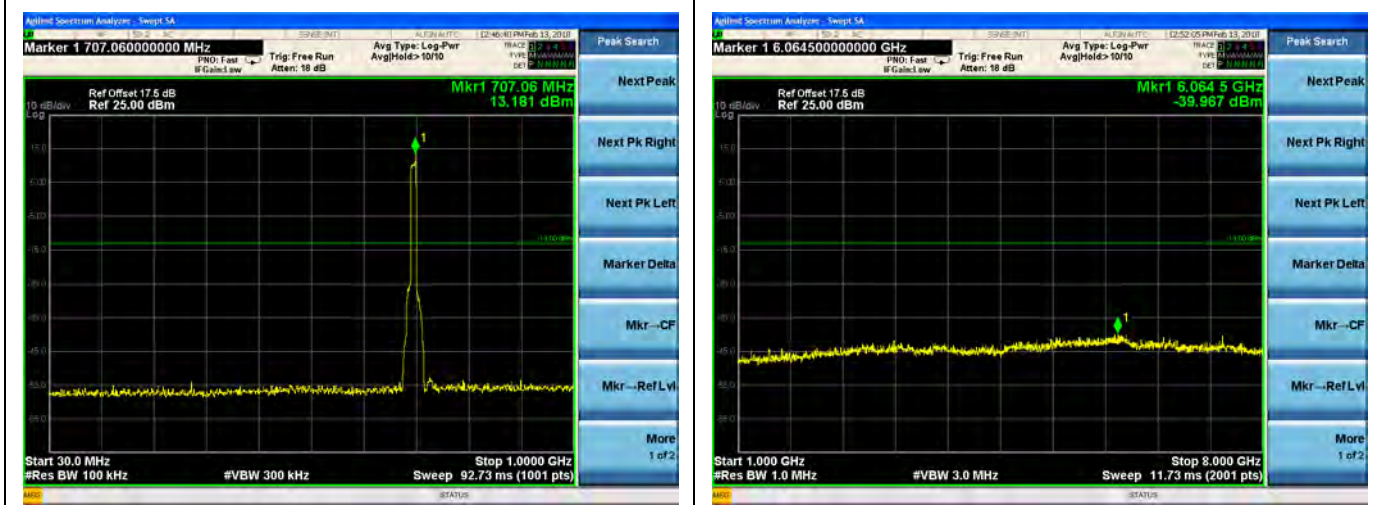
16QAM



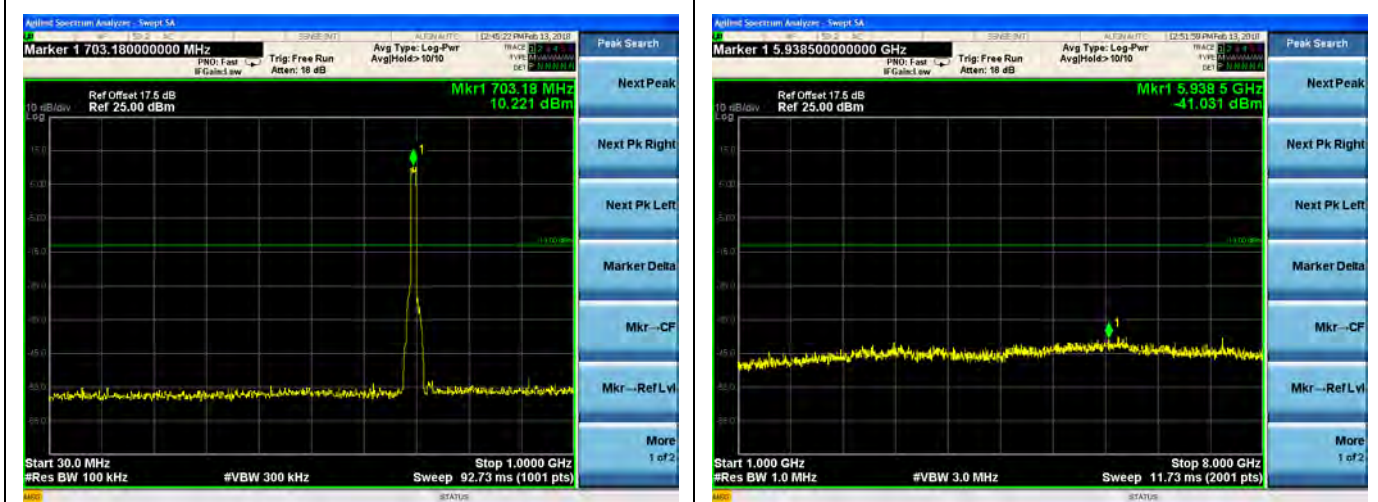


LTE Band 12 10MHz BW Low Channel

QPSK



16QAM

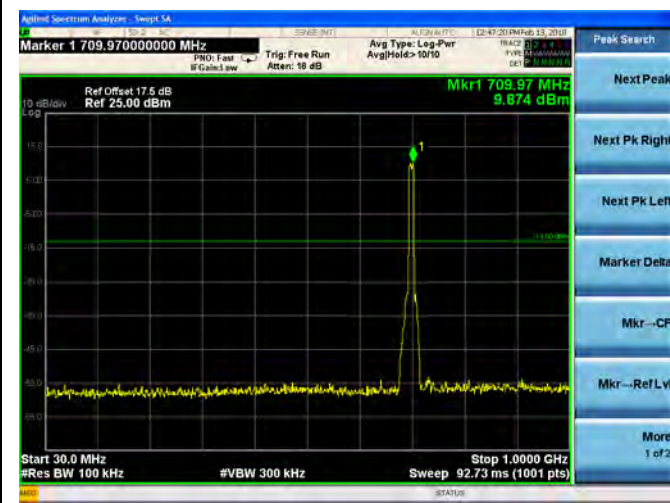




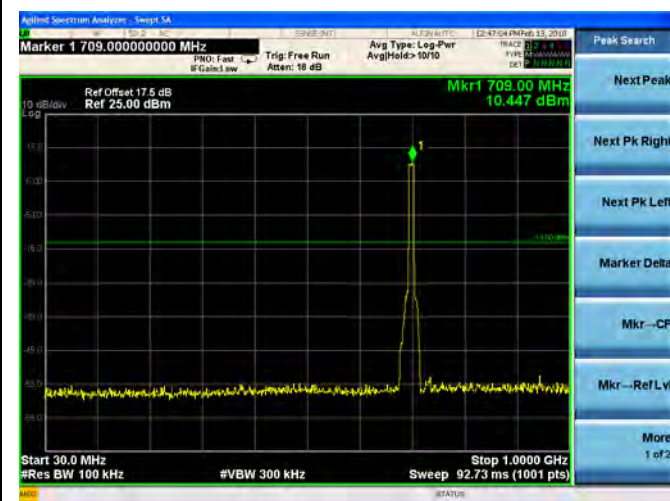
REPORT No.: SZ17120080W07

LTE Band 12 10MHz BW Mid Channel

QPSK



16QAM

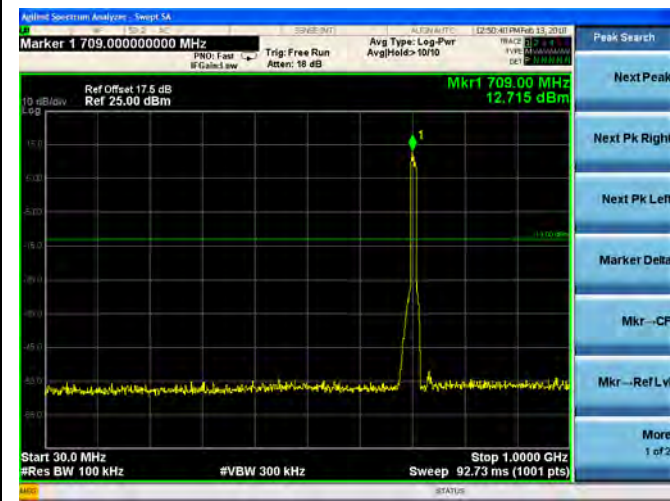




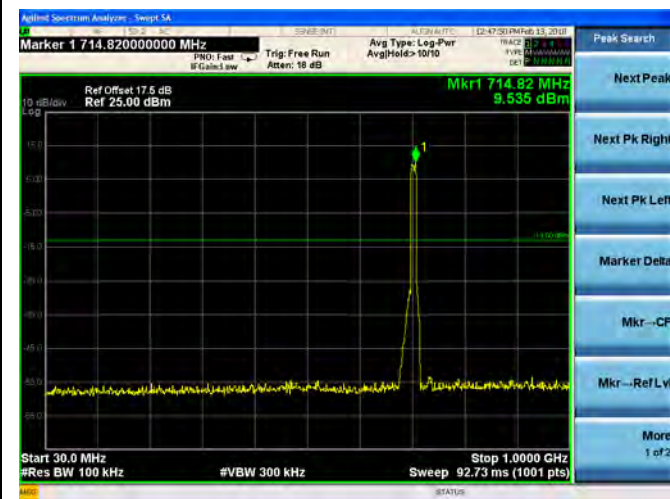
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LTE Band 12 10MHz BW High Channel

QPSK



16QAM

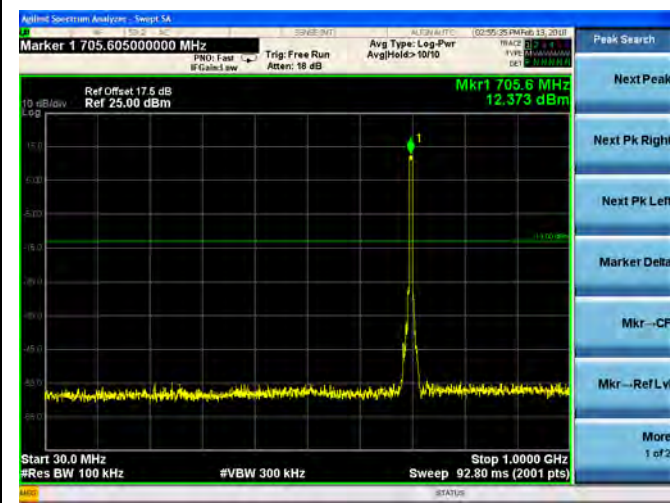




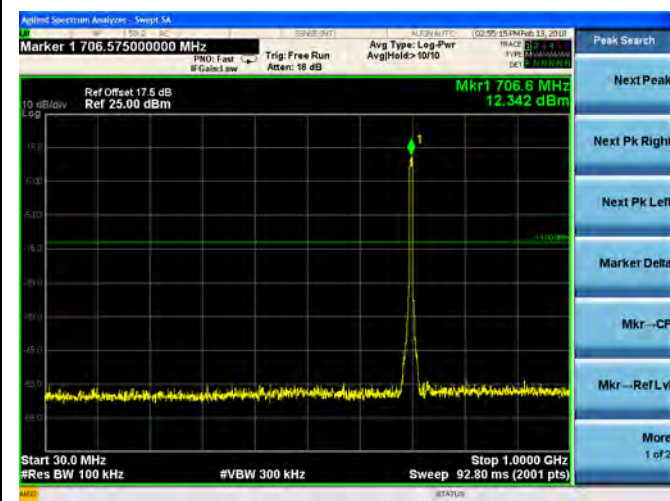
REPORT No.: SZ17120080W07

LTE Band 17 5MHz BW Low Channel

QPSK



16QAM

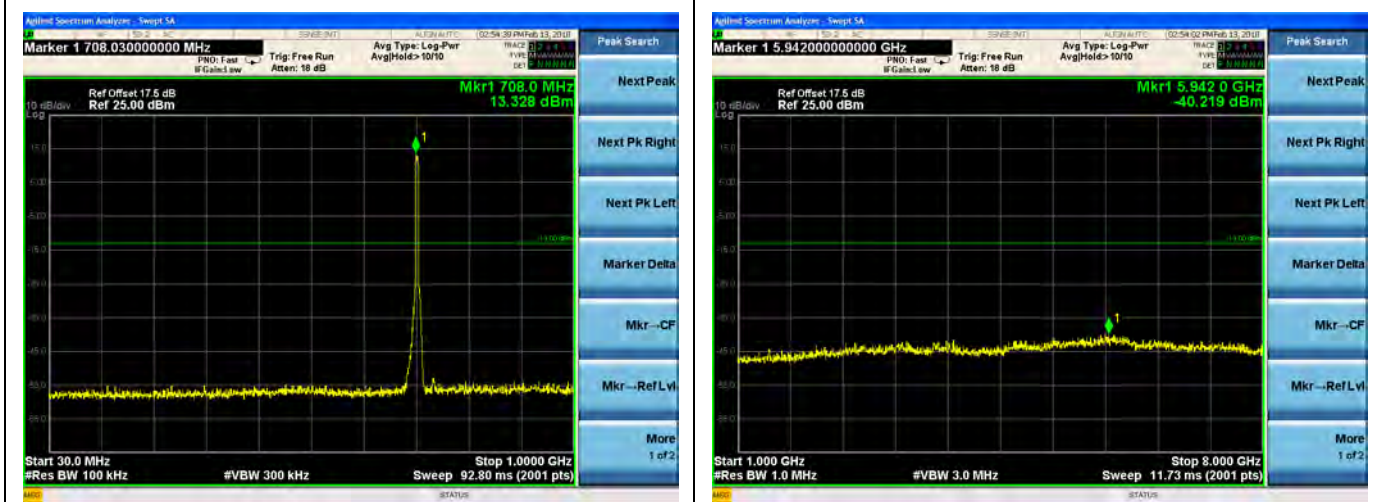




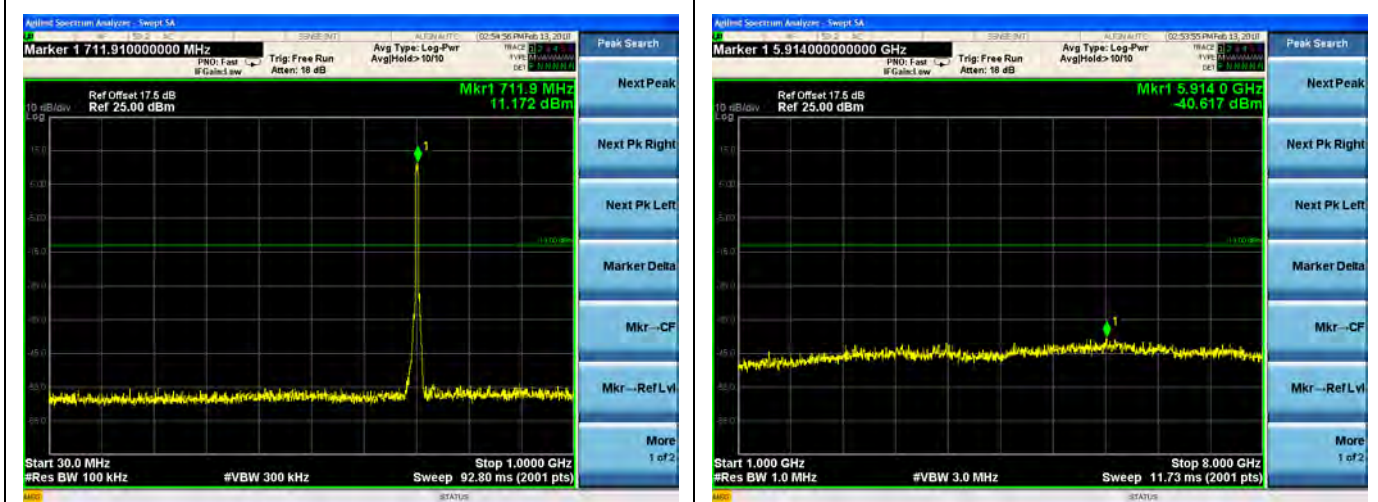
REPORT No.: SZ17120080W07

LTE Band 17 5MHz BW Mid Channel

QPSK



16QAM

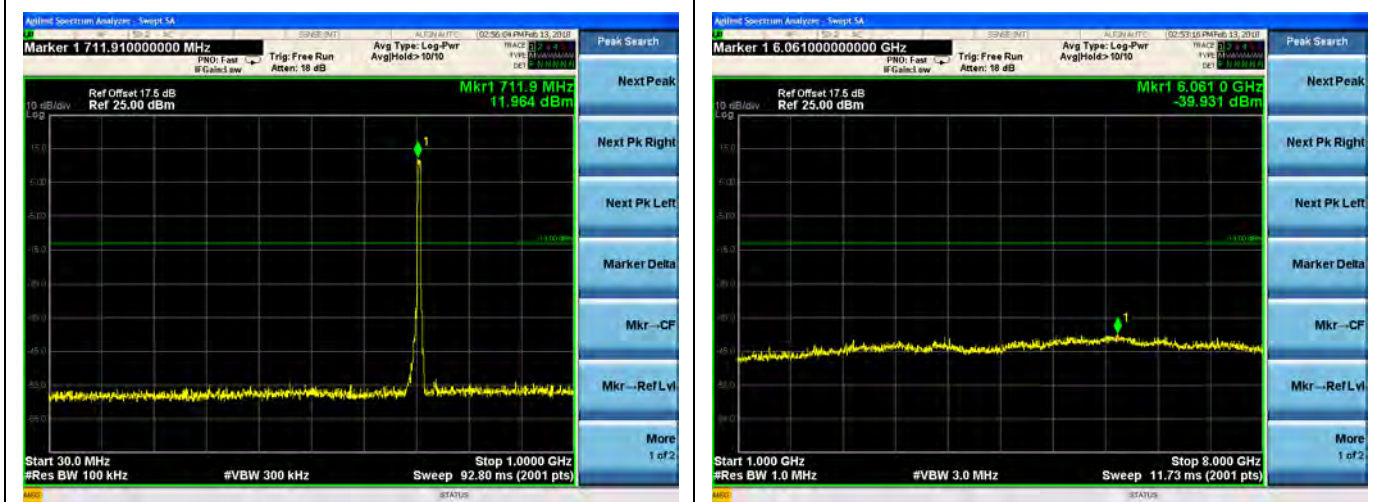




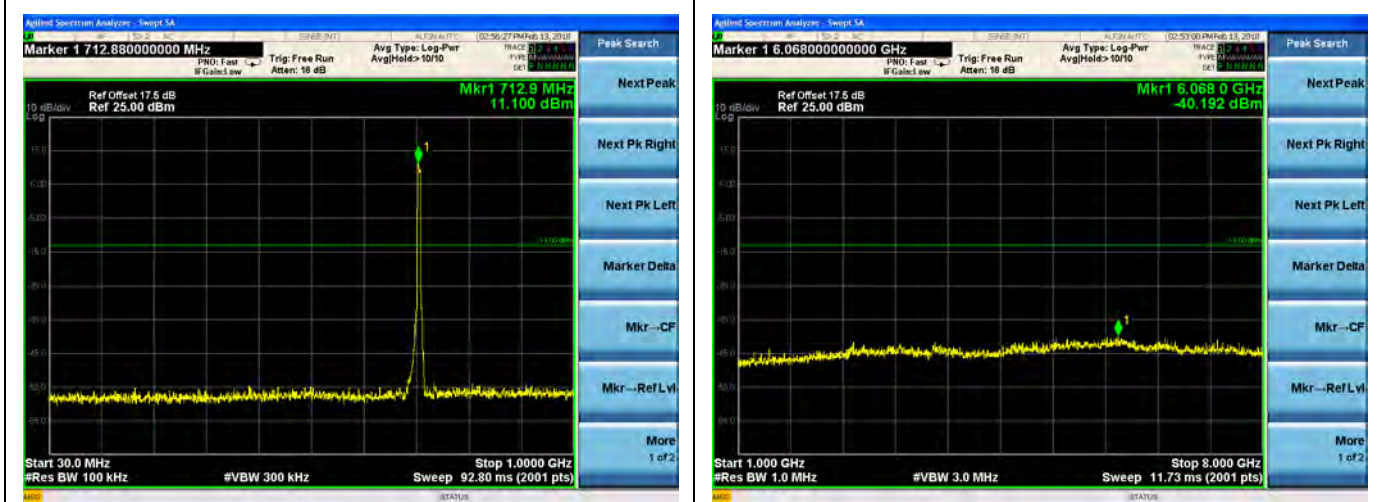
REPORT No.: SZ17120080W07

LTE Band 17 5MHz BW High Channel

QPSK



16QAM

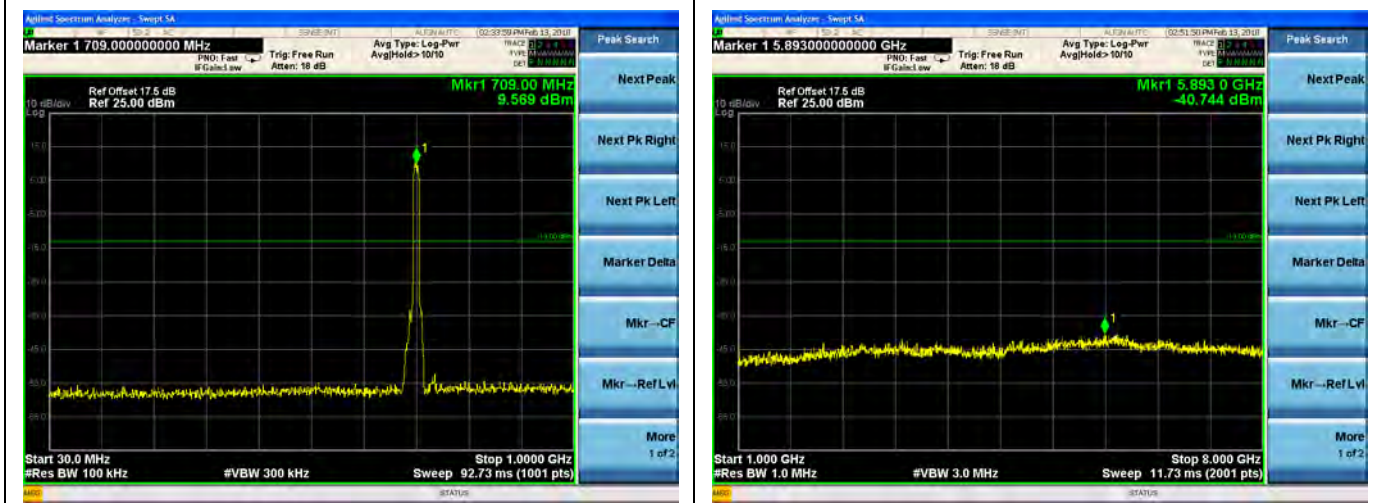




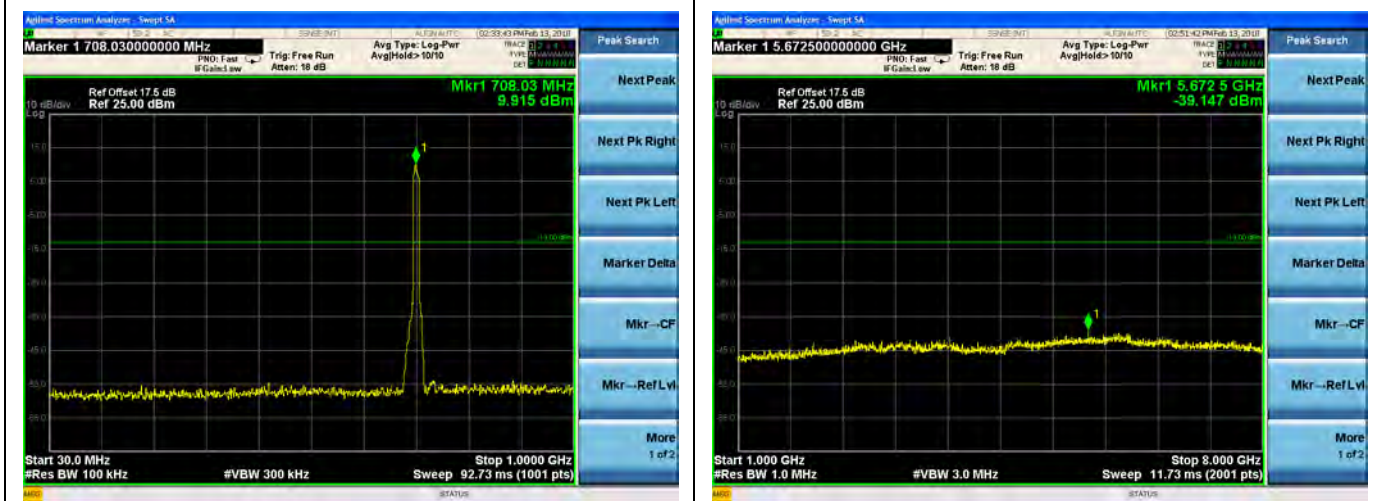
REPORT No.: SZ17120080W07

LTE Band 17 10MHz BW Low Channel

QPSK



16QAM

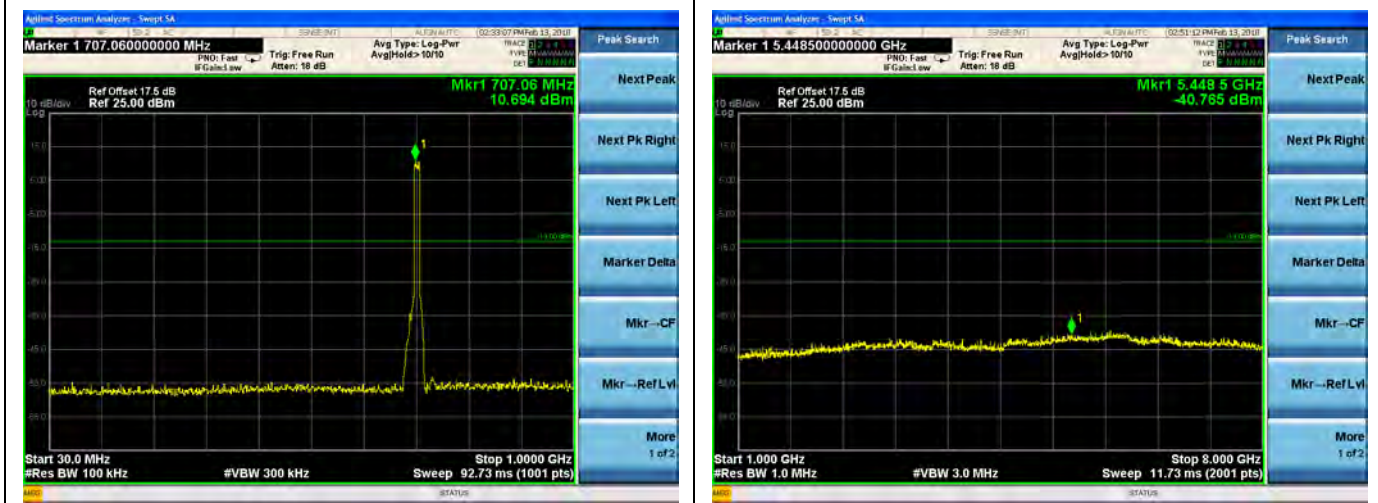




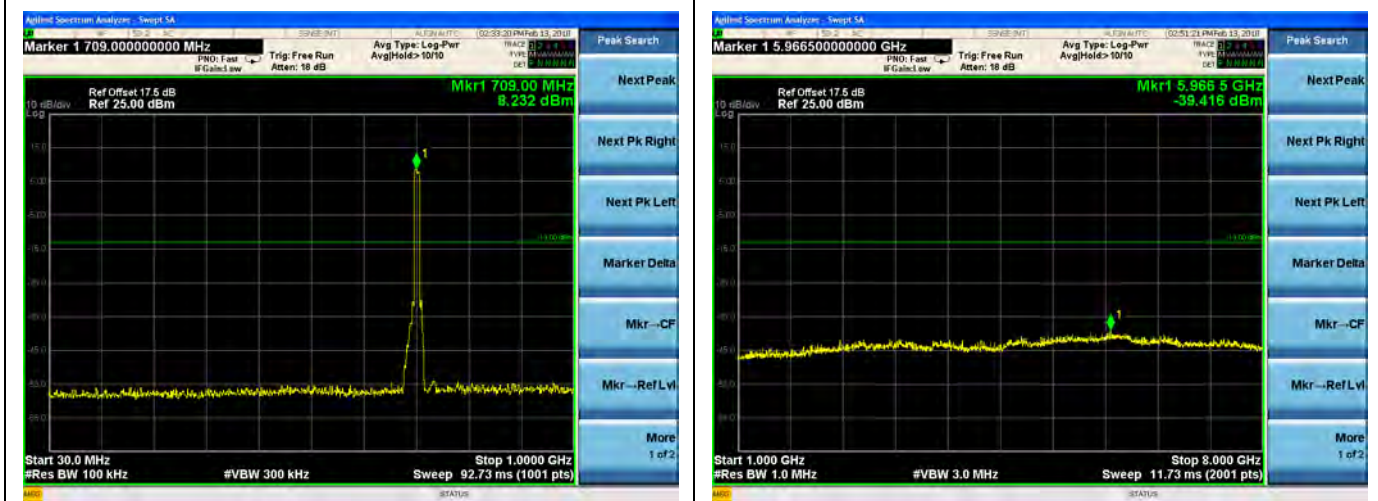
REPORT No.: SZ17120080W07

LTE Band 17 10MHz BW Mid Channel

QPSK



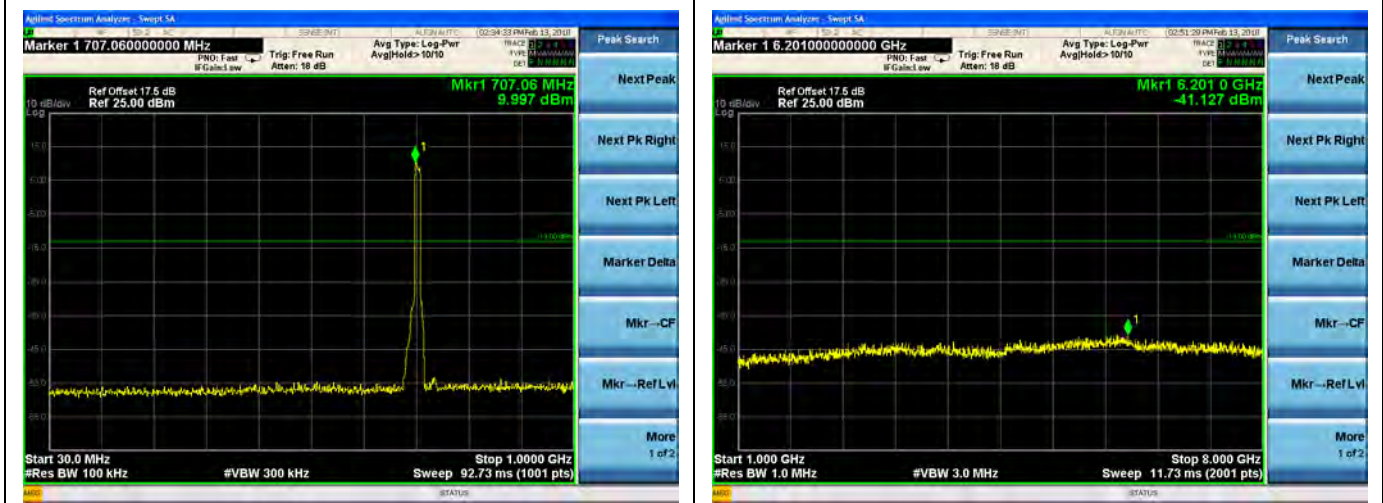
16QAM



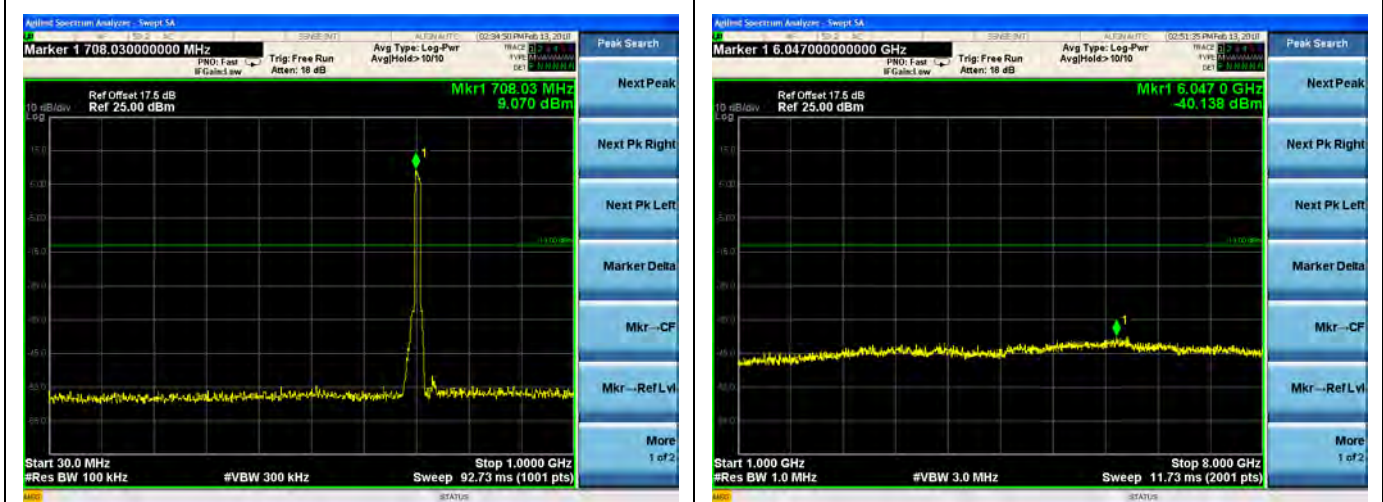


LTE Band 17 10MHz BW High Channel

QPSK



16QAM





2.6. Band Edge

2.6.1. Requirement

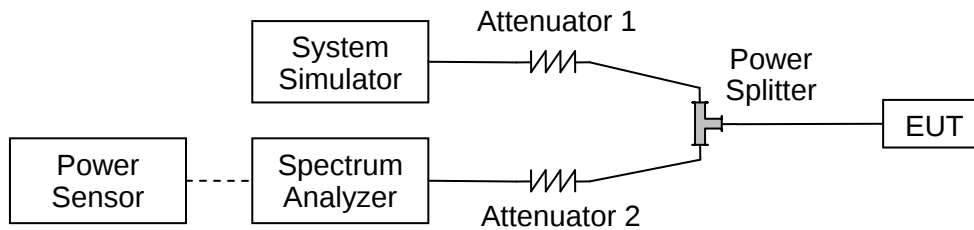
According to FCC section 24.238(a), The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

According to FCC section 27.53(g), For operations in the 698–746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least $43 + 10 \log(P)$ dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

According to FCC section 27.53(h), For operations in the 1710–1755 MHz bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least $43 + 10 \log_{10}(P)$ dB.

According to FCC section 27.53(m) (4), For mobile digital stations, the attenuation factor shall be not less than $40 + 10 \log(P)$ dB on all frequencies between the channel edge and 5 megahertz from the channel edge, $43 + 10 \log(P)$ dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and $55 + 10 \log(P)$ dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less than $43 + 10 \log(P)$ dB on all frequencies between 2490.5 MHz and 2496 MHz and $55 + 10 \log(P)$ dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

2.6.2. Test Description



The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum output power. A call is established between the EUT and the SS.

2.6.3. Test procedure

KDB 971168 D01v03 Section 6.0 and ANSI/TIA-603-E-2016.

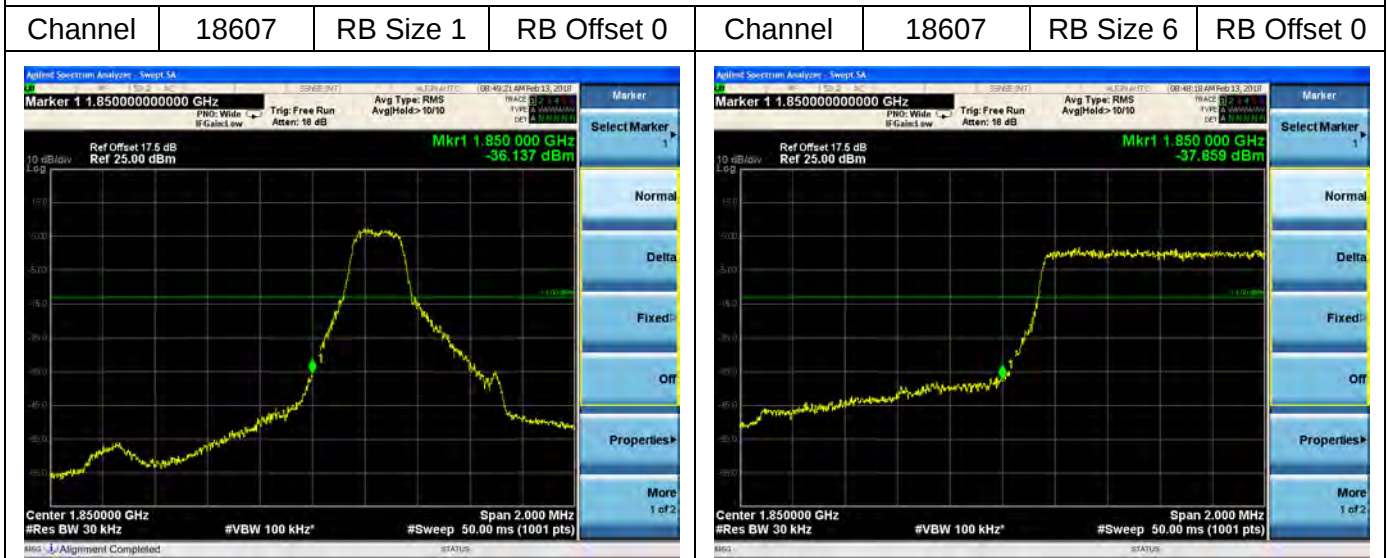
2.6.4. Test Result

The center frequency of spectrum is the band edge frequency and span is 2MHz, Record the max trace into the test report.

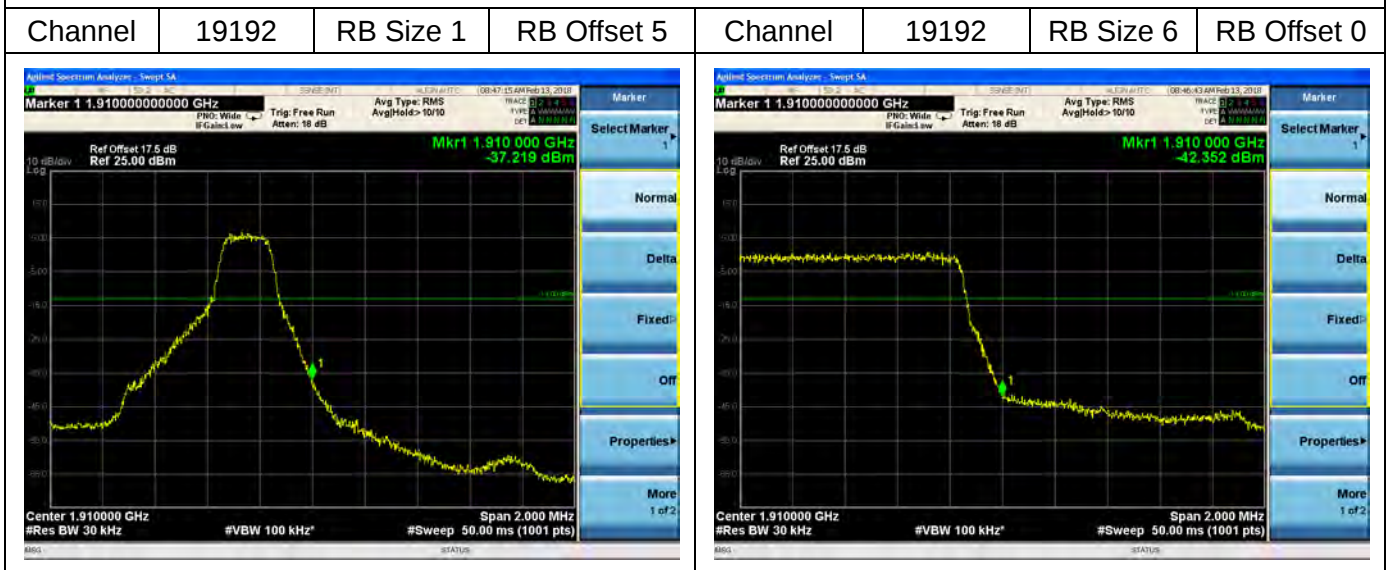


LTE Band 2

Channel Bandwidth: 1.4MHz



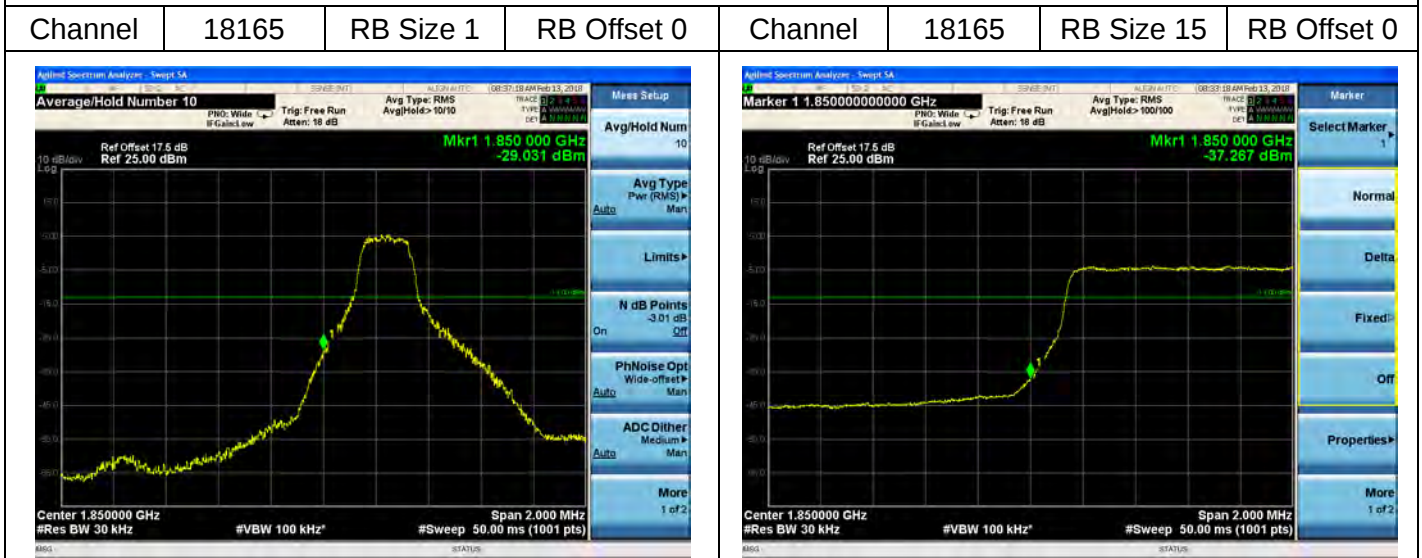
Channel Bandwidth: 1.4MHz



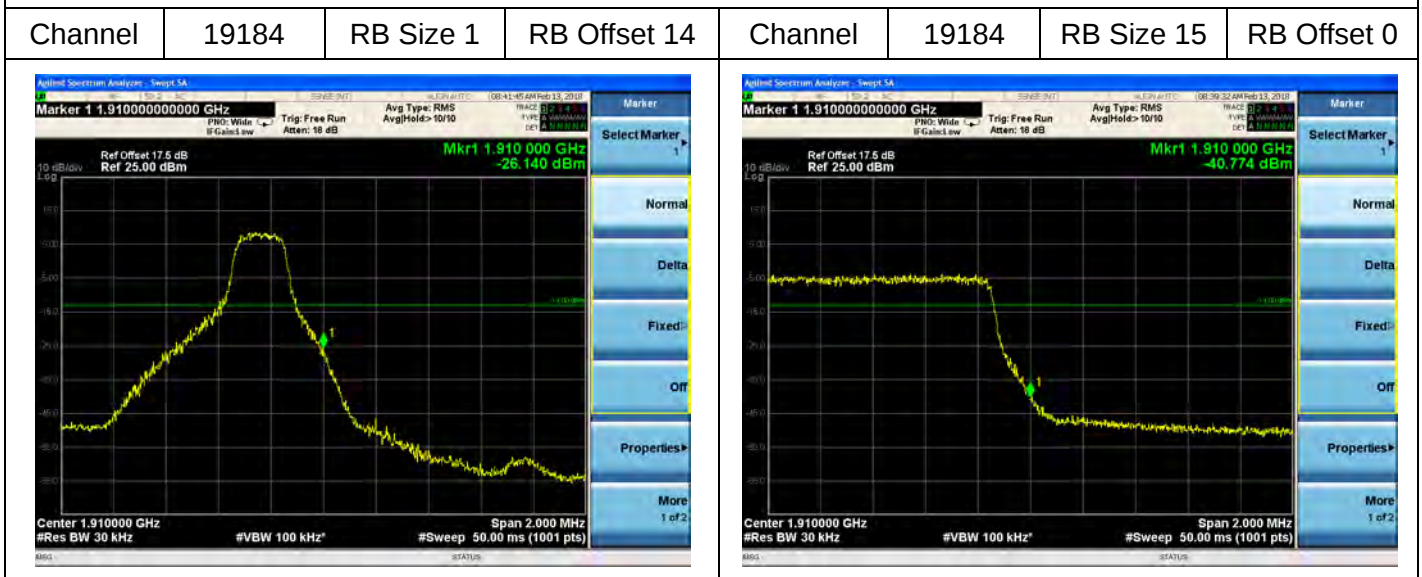


LTE Band 2

Channel Bandwidth: 3MHz



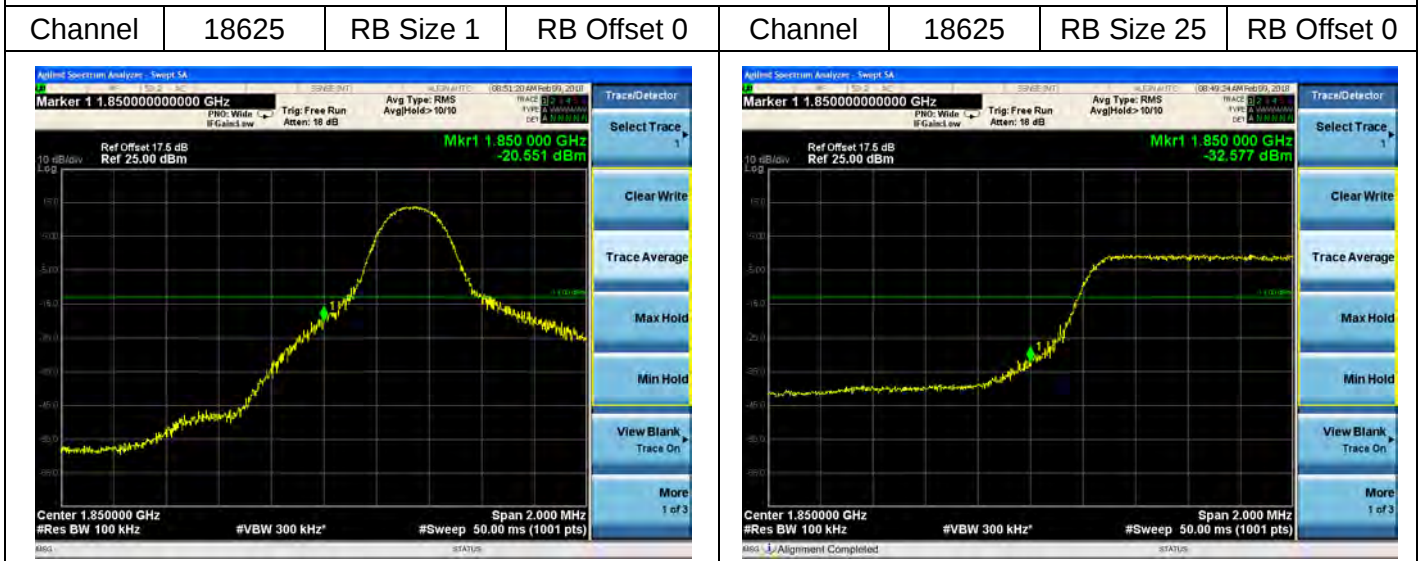
Channel Bandwidth: 3MHz



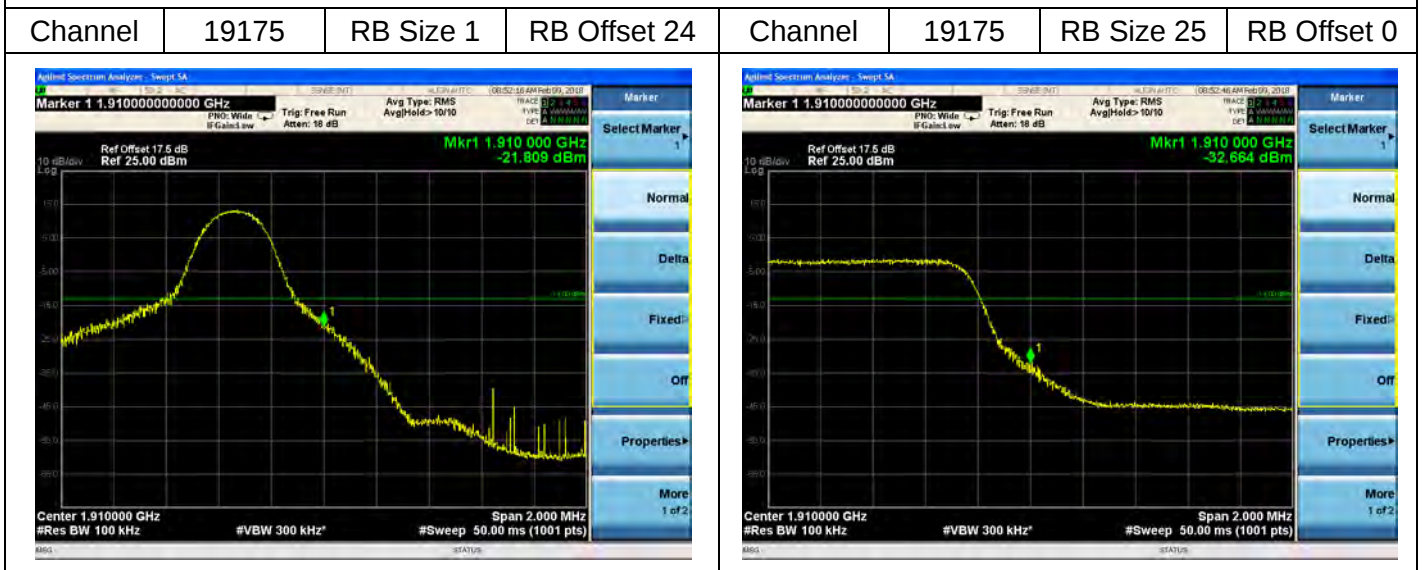


LTE Band 2

Channel Bandwidth: 5MHz



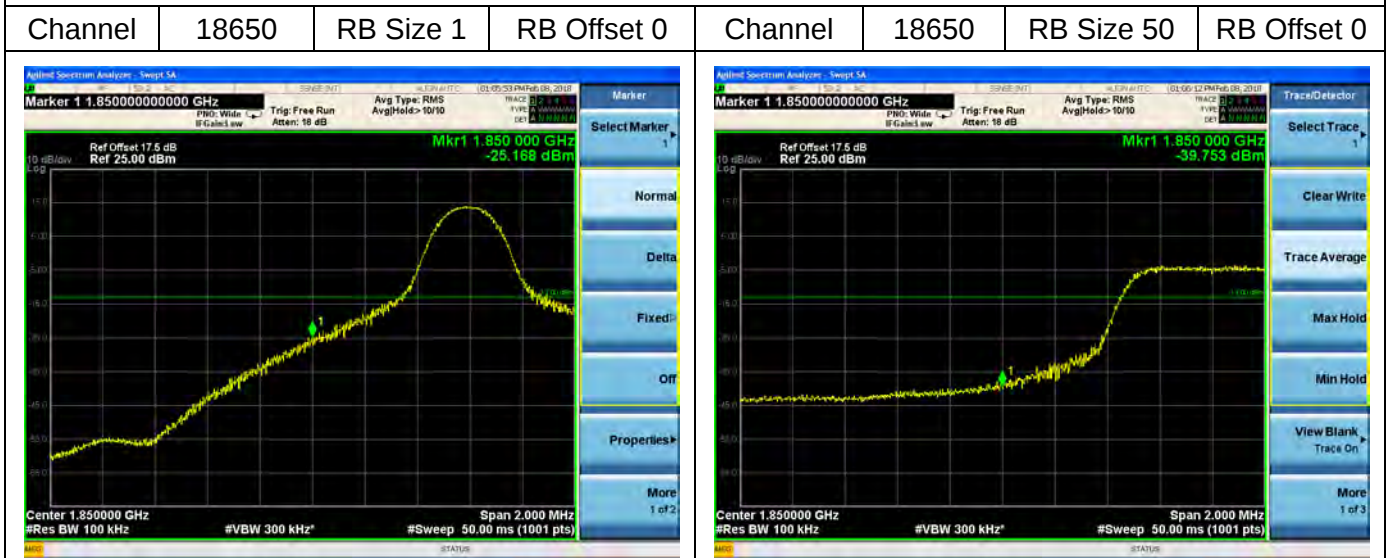
Channel Bandwidth: 5MHz



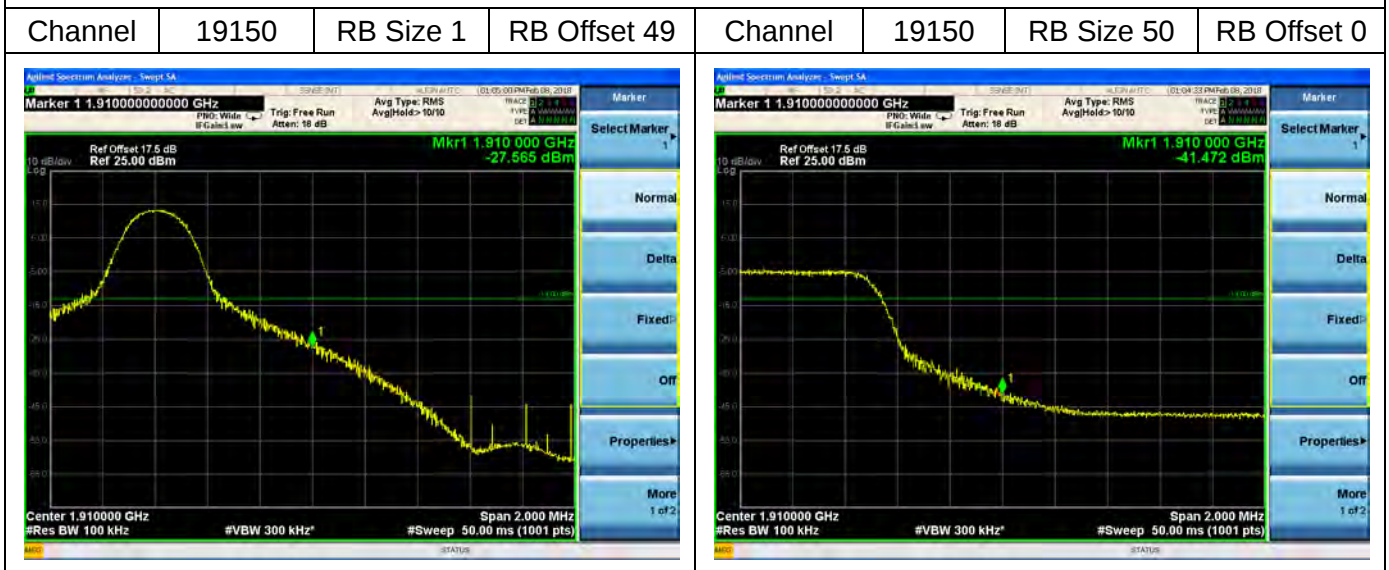


LTE Band 2

Channel Bandwidth: 10MHz



Channel Bandwidth: 10MHz





LTE Band 2

Channel Bandwidth: 15MHz

Channel	18675	RB Size 1	RB Offset 0	Channel	18675	RB Size 75	RB Offset 0
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Channel Bandwidth: 15MHz

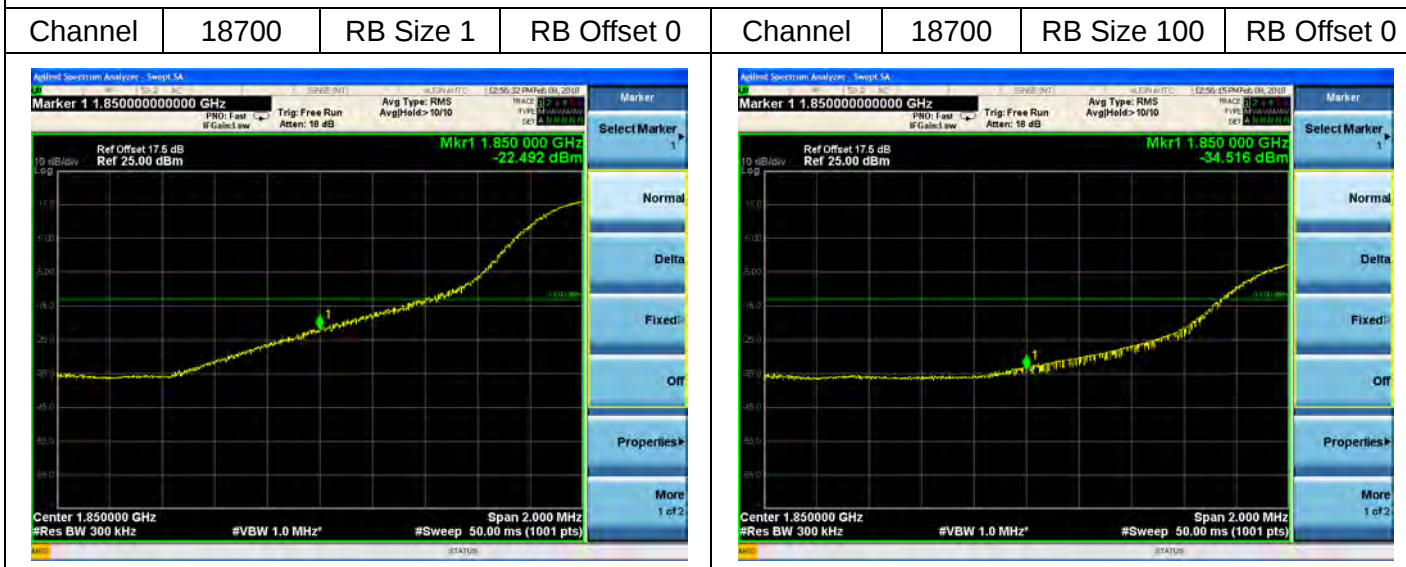
Channel	19125	RB Size 1	RB Offset 74	Channel	19125	RB Size 75	RB Offset 0
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LTE Band 2

Channel Bandwidth: 20MHz



Channel Bandwidth: 20MHz





LTE Band 4

Channel Bandwidth: 1.4MHz

Channel	19957	RB Size 1	RB Offset 0	Channel	20393	RB Size 6	RB Offset 0
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Channel Bandwidth: 1.4MHz

Channel	19957	RB Size 1	RB Offset 5	Channel	20393	RB Size 6	RB Offset 0
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LTE Band 4

Channel Bandwidth: 3MHz

Channel	19965	RB Size 1	RB Offset 0	Channel	20385	RB Size 15	RB Offset 0
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Channel Bandwidth: 3MHz

Channel	19965	RB Size 1	RB Offset 14	Channel	20385	RB Size 15	RB Offset 0
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LTE Band 4

Channel Bandwidth: 5MHz

Channel	19975	RB Size 1	RB Offset 0	Channel	20375	RB Size 25	RB Offset 0
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Channel Bandwidth: 5MHz

Channel	19975	RB Size 1	RB Offset 24	Channel	20375	RB Size 25	RB Offset 0
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LTE Band 4

Channel Bandwidth: 10MHz

Channel	20000	RB Size 1	RB Offset 0	Channel	20350	RB Size 50	RB Offset 0
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Channel Bandwidth: 10MHz

Channel	20000	RB Size 1	RB Offset 49	Channel	20350	RB Size 50	RB Offset 0
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LTE Band 4

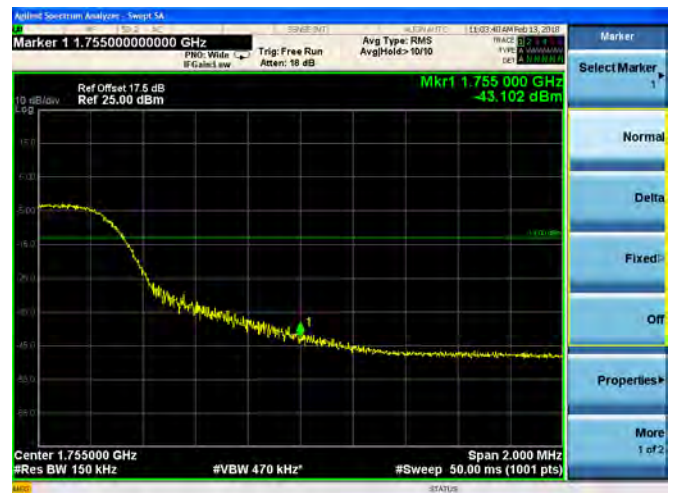
Channel Bandwidth: 15MHz

Channel	20025	RB Size 1	RB Offset 0	Channel	20325	RB Size 75	RB Offset 0
---------	-------	-----------	-------------	---------	-------	------------	-------------



Channel Bandwidth: 15MHz

Channel	20025	RB Size 1	RB Offset 74	Channel	20325	RB Size 75	RB Offset 0
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LTE Band 4

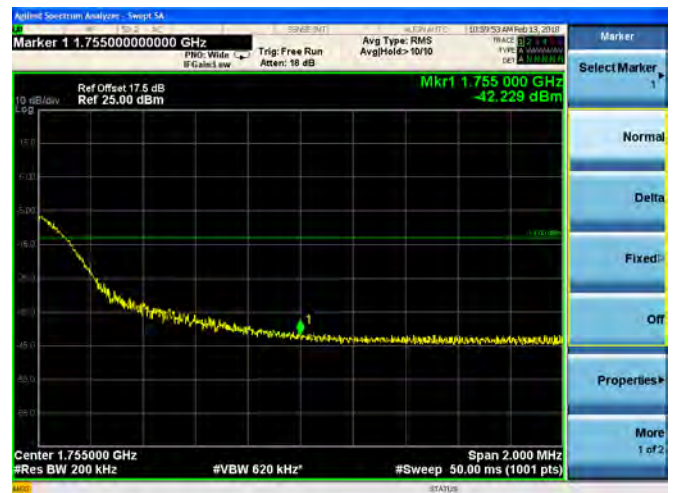
Channel Bandwidth: 20MHz

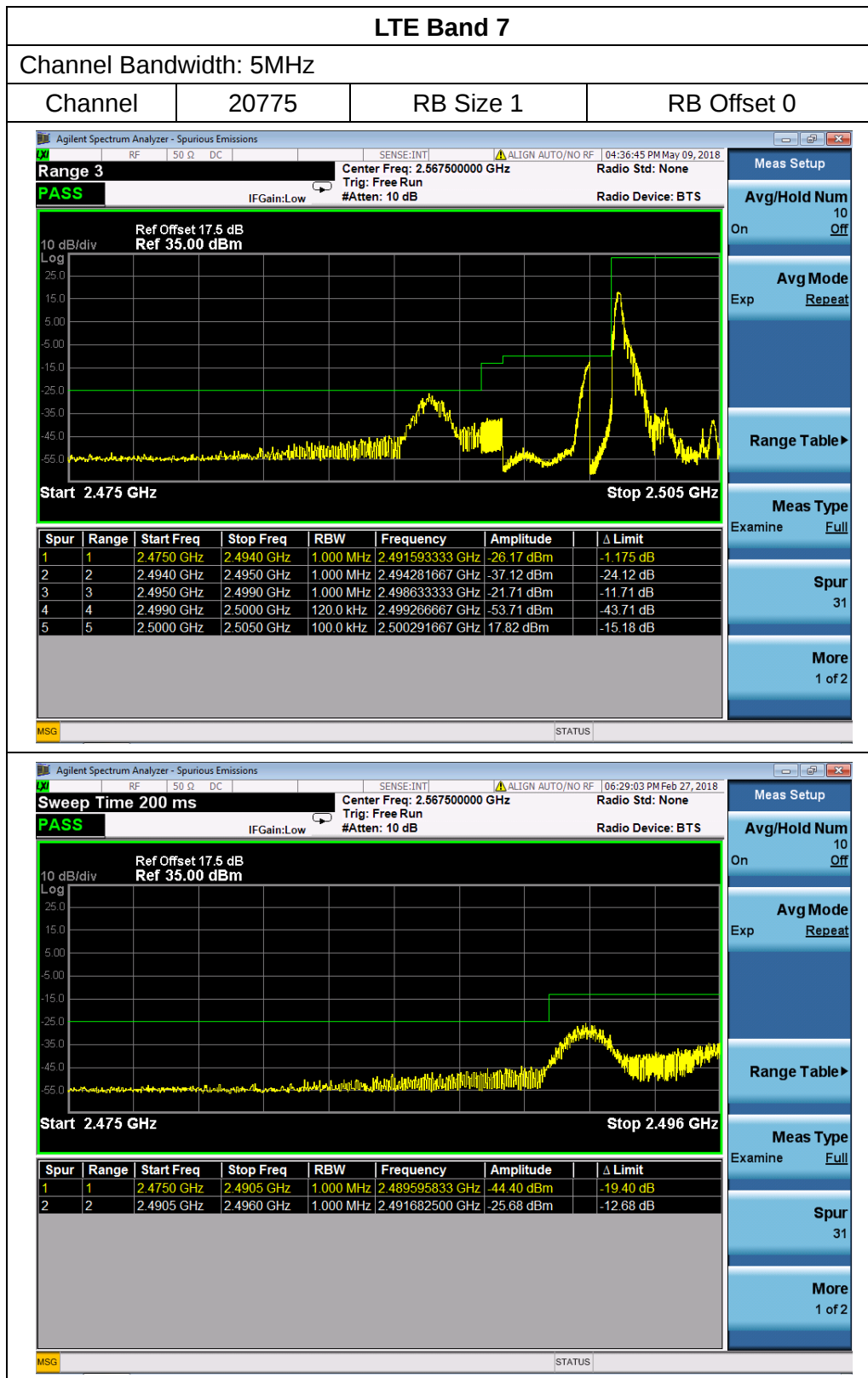
Channel	20050	RB Size 1	RB Offset 0	Channel	20300	RB Size 100	RB Offset 0
---------	-------	-----------	-------------	---------	-------	-------------	-------------

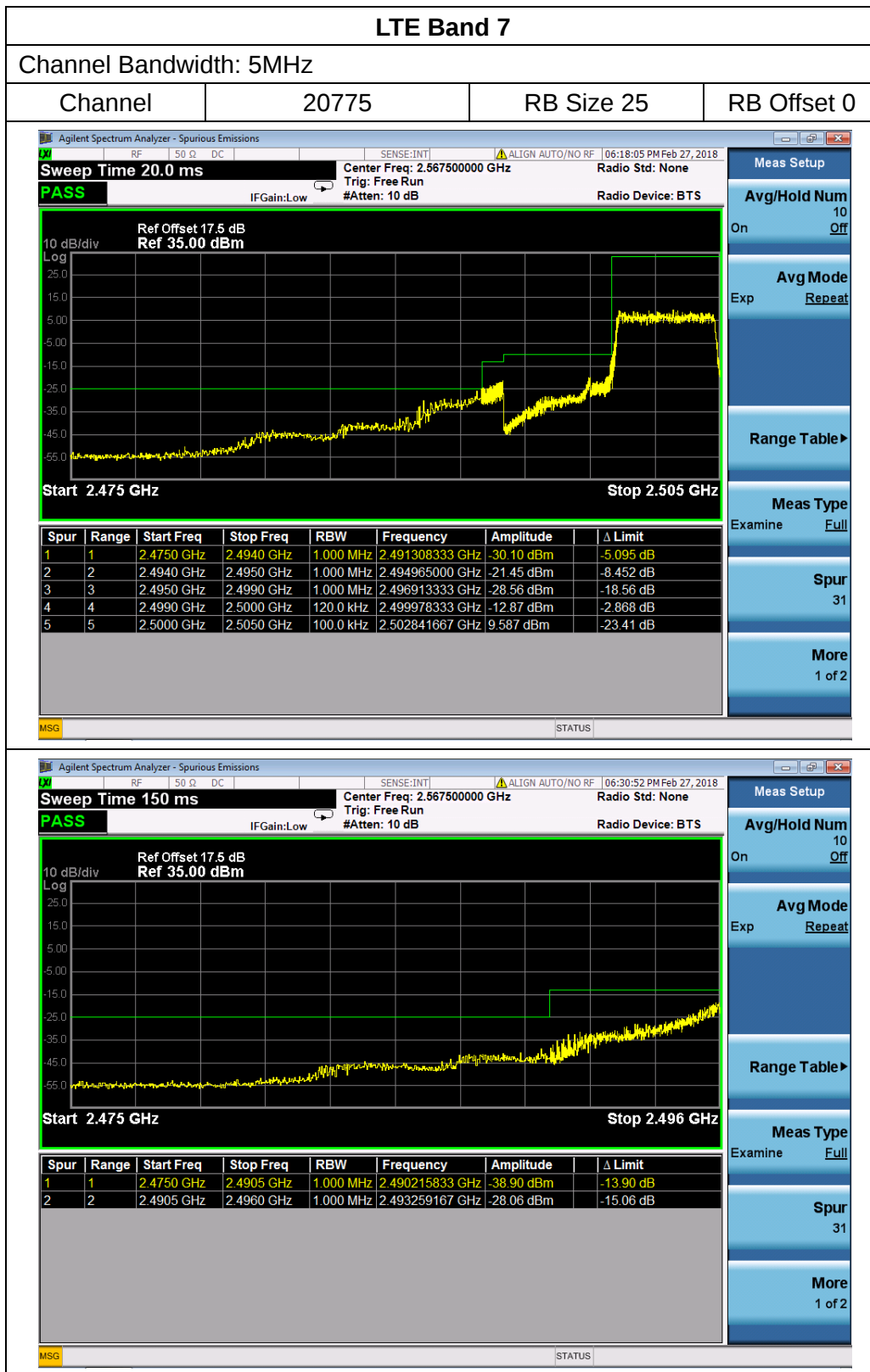


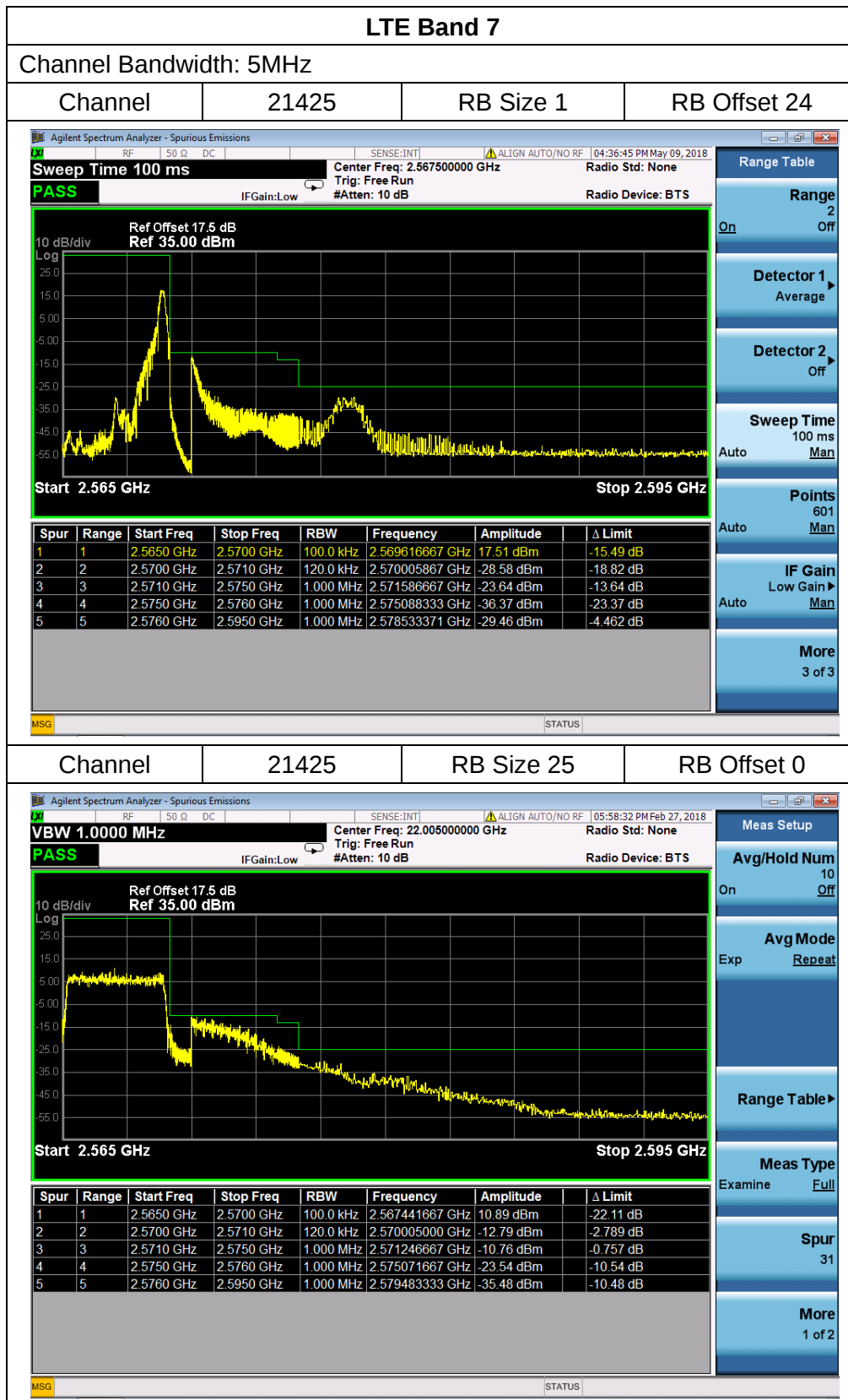
Channel Bandwidth: 20MHz

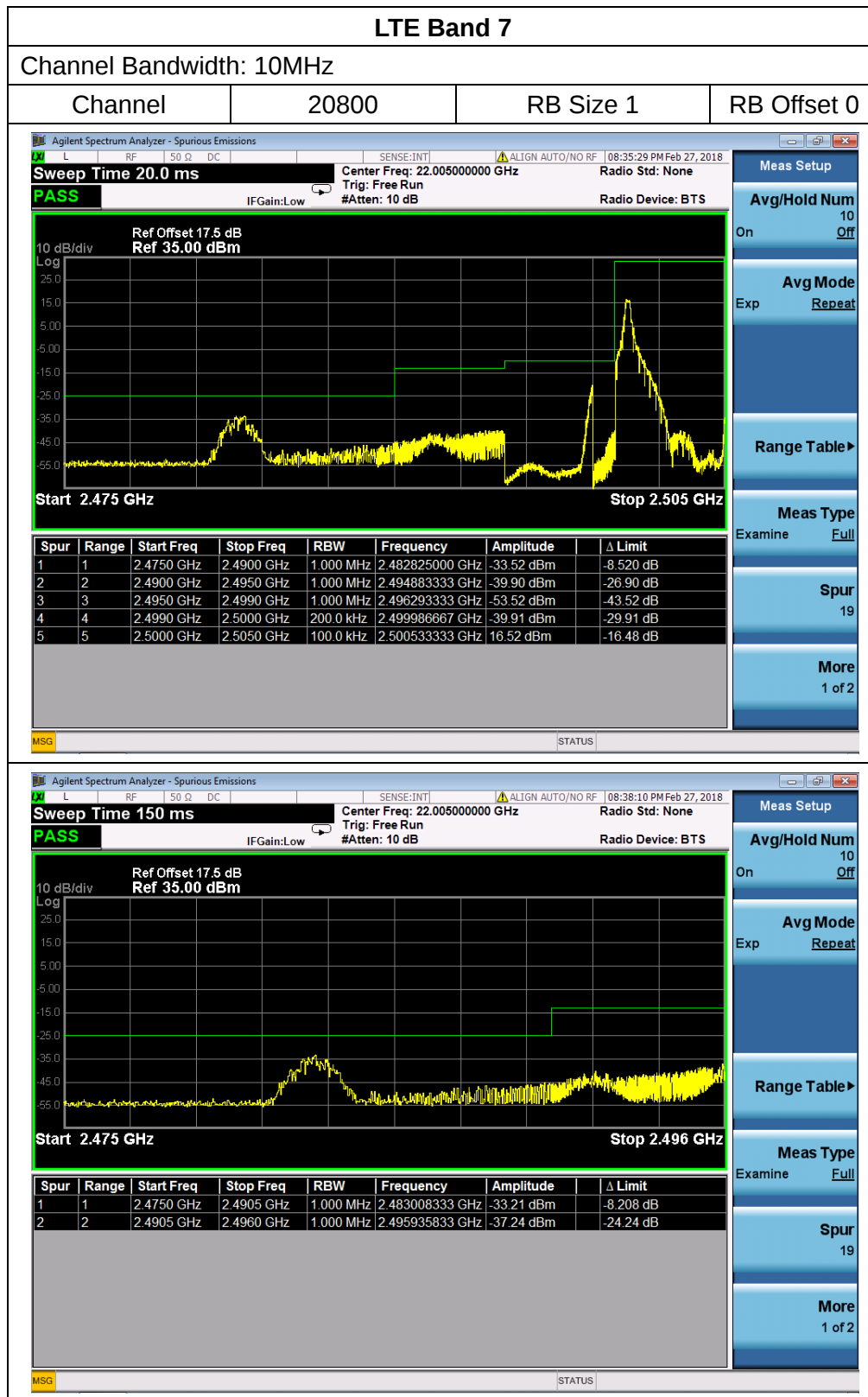
Channel	20050	RB Size 1	RB Offset 99	Channel	20300	RB Size 100	RB Offset 0
---------	-------	-----------	--------------	---------	-------	-------------	-------------

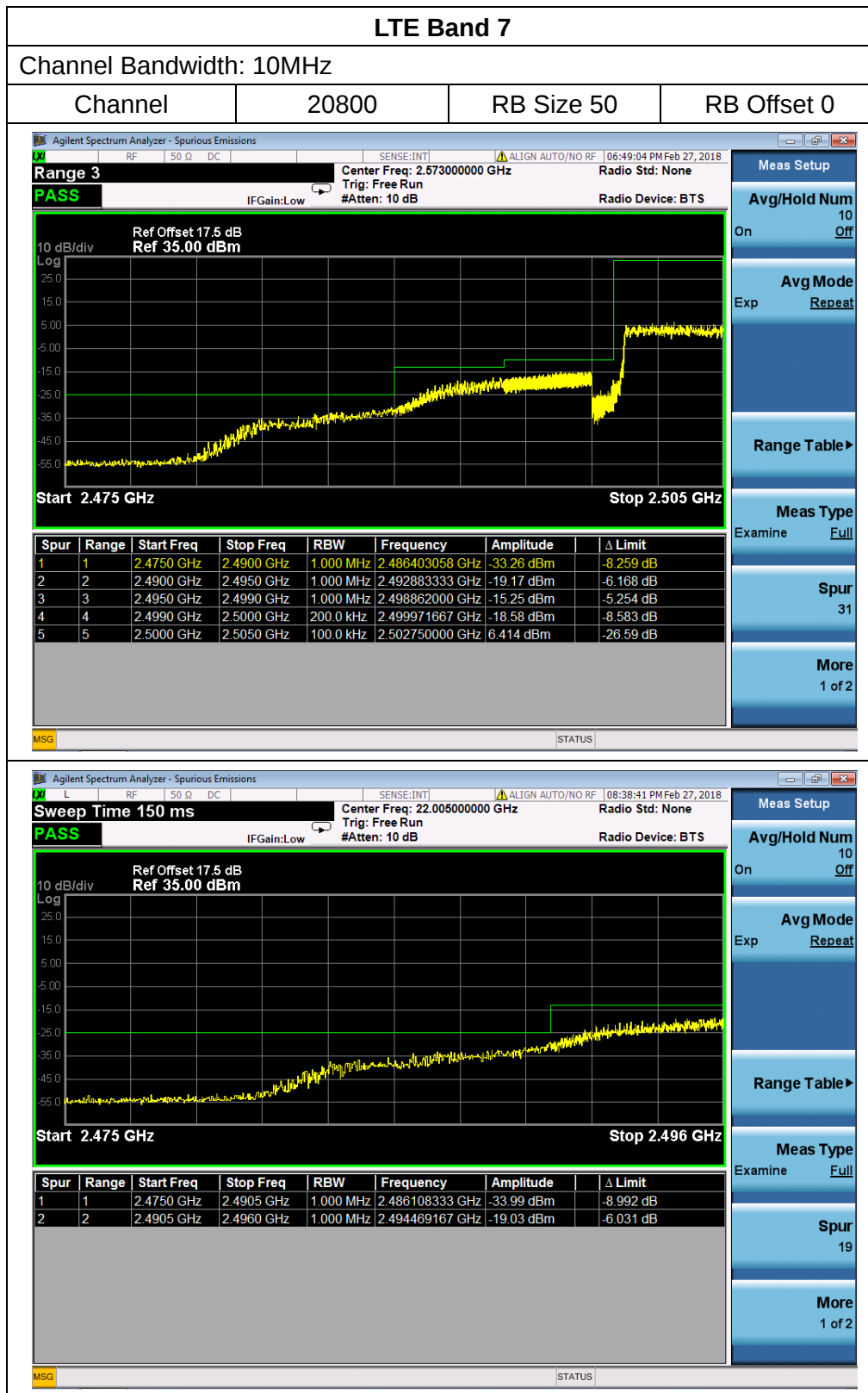




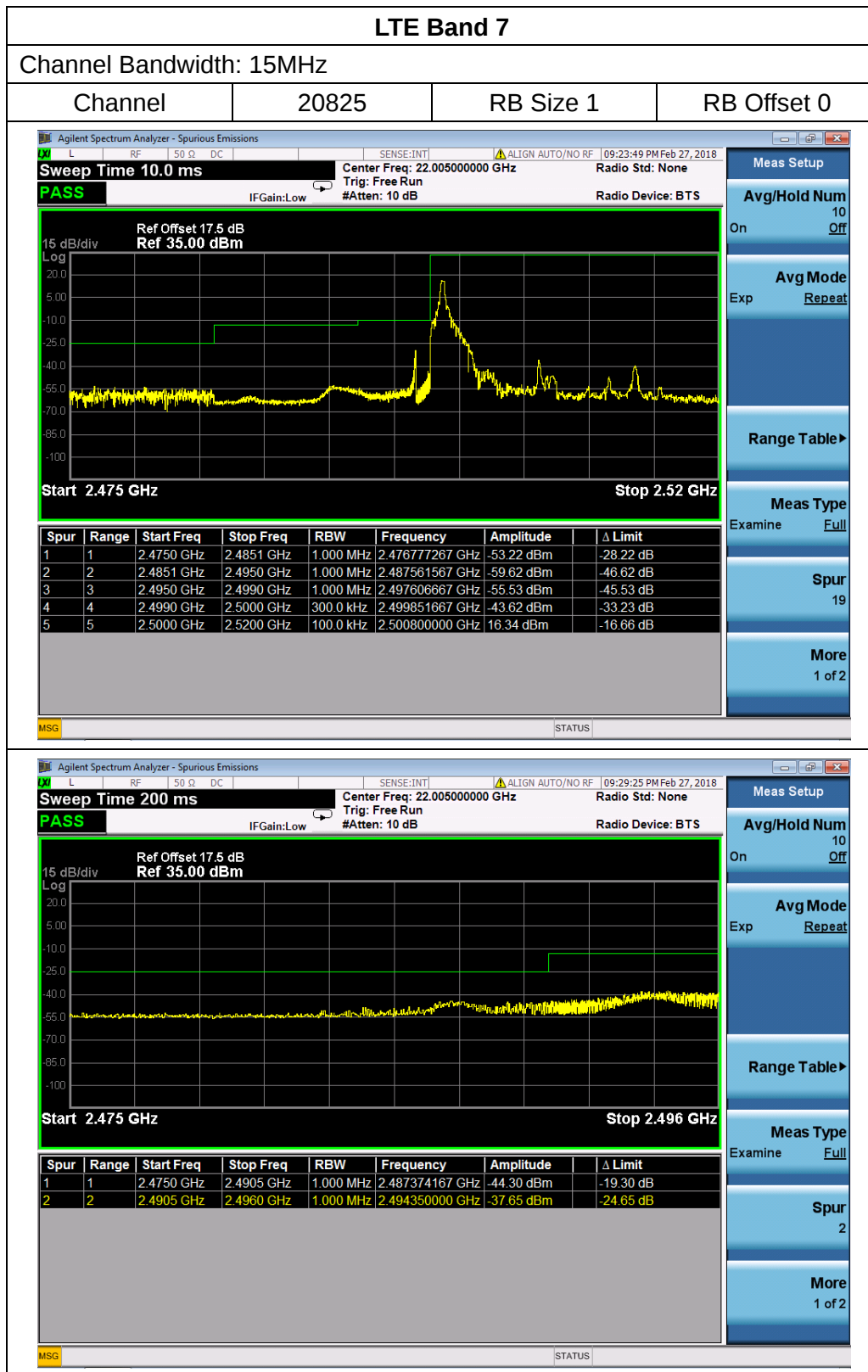


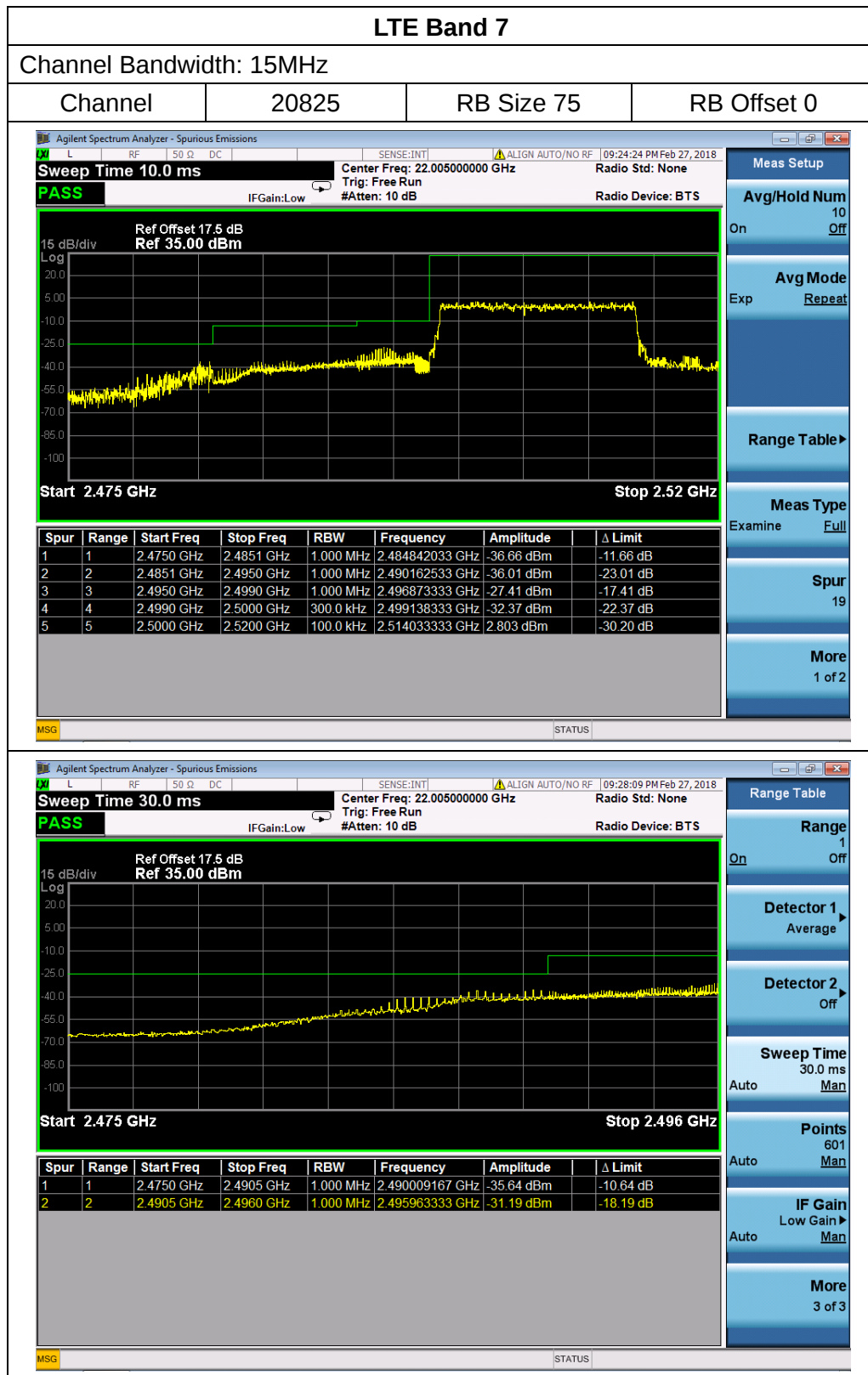


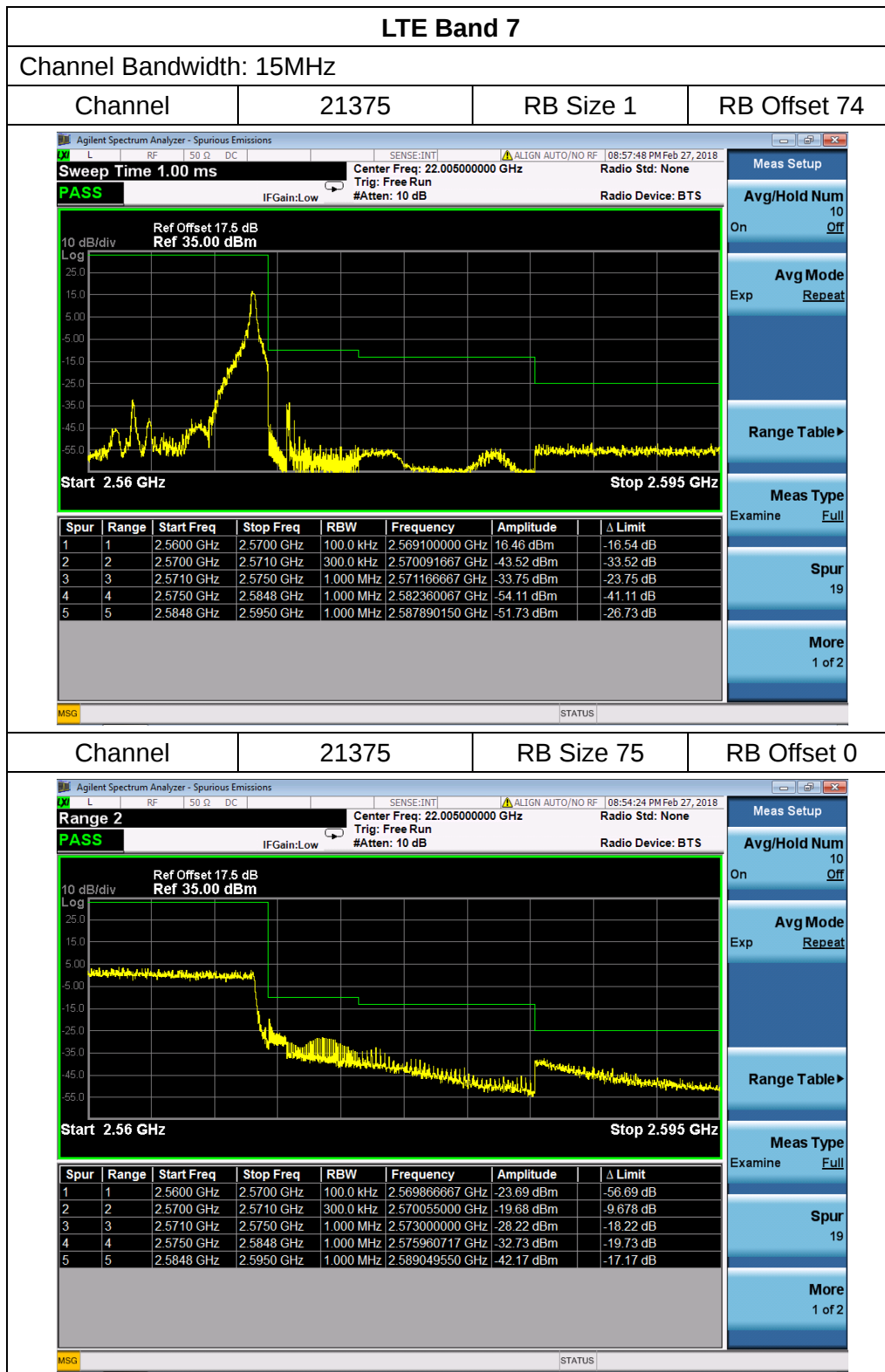


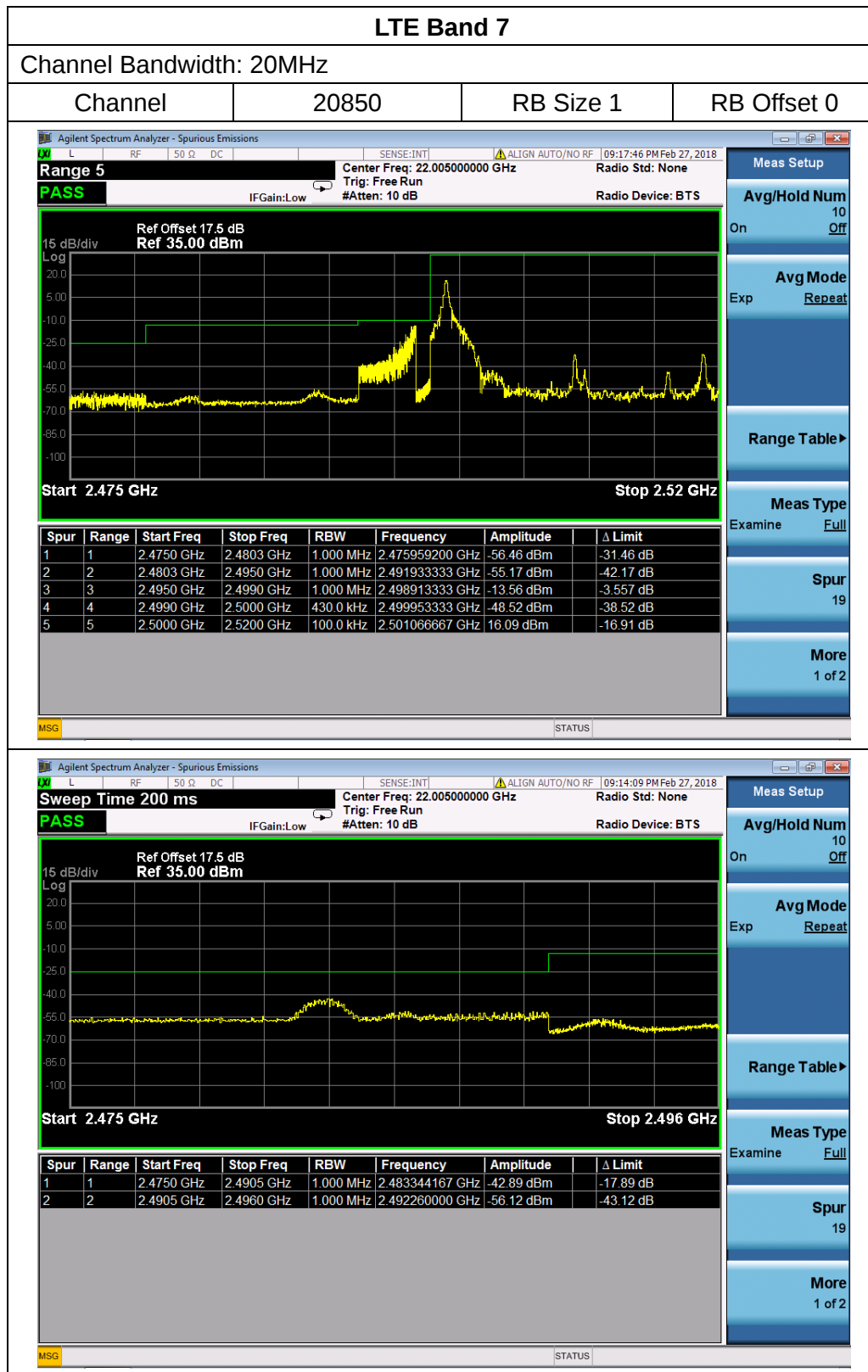


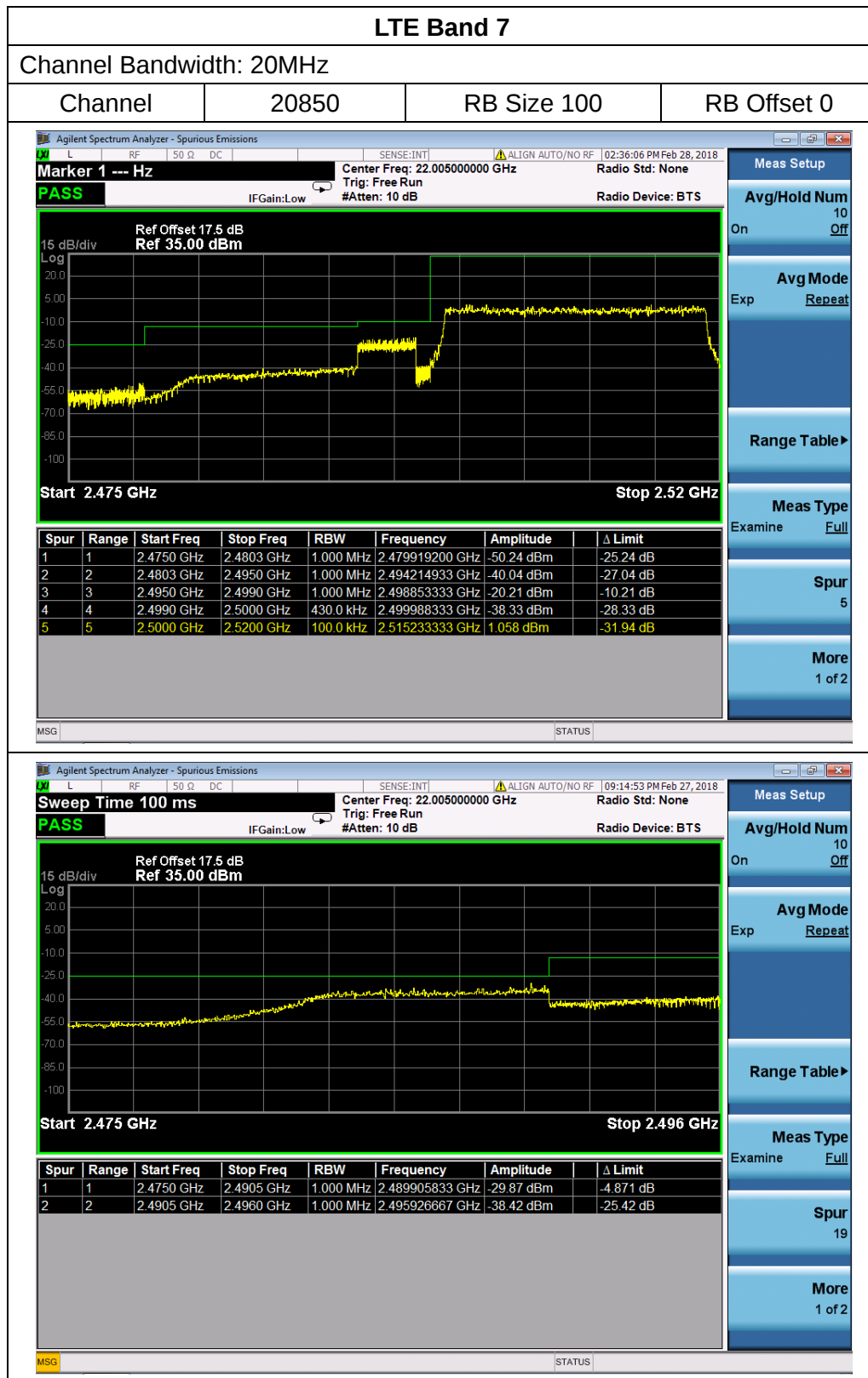


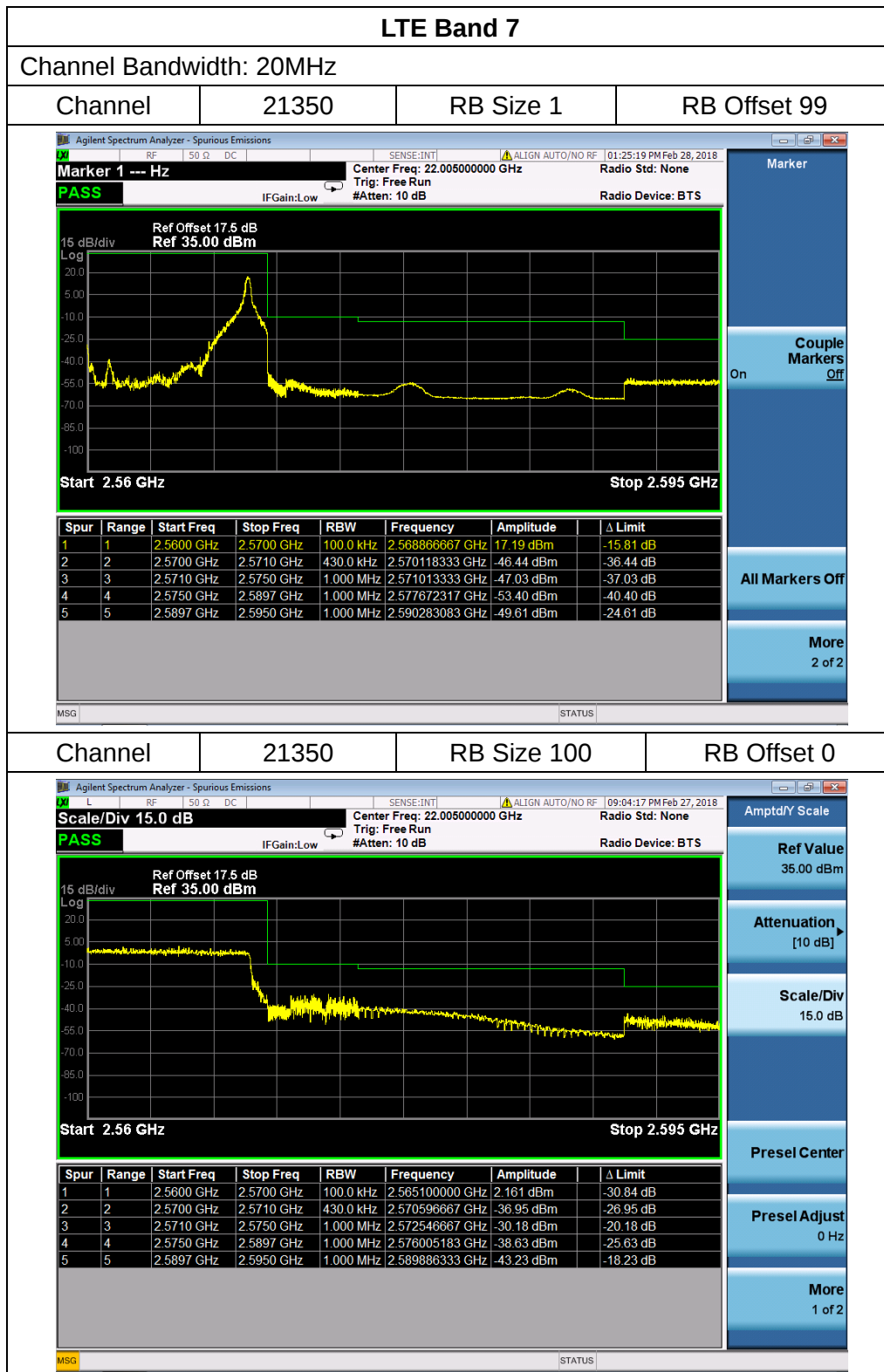














LTE Band 12

Channel Bandwidth: 1.4MHz

Channel	23017	RB Size 1	RB Offset 0	Channel	23017	RB Size 6	RB Offset 0
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Channel Bandwidth: 1.4MHz

Channel	23173	RB Size 1	RB Offset 5	Channel	23173	RB Size 6	RB Offset 0
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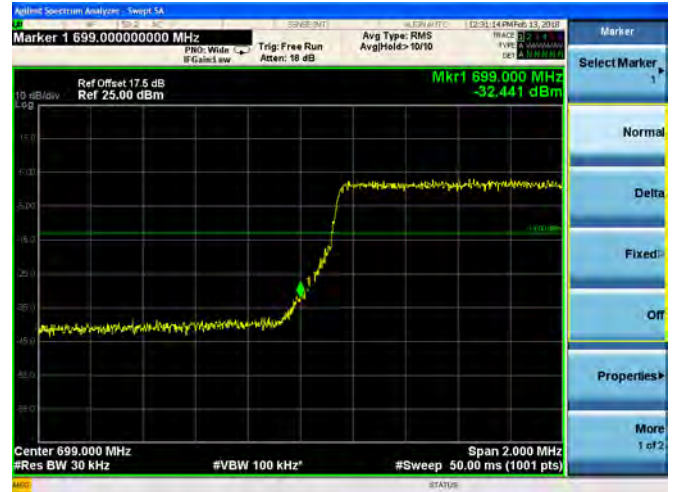




LTE Band 12

Channel Bandwidth: 3MHz

Channel	23025	RB Size 1	RB Offset 0	Channel	23025	RB Size 15	RB Offset 0
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Channel Bandwidth: 3MHz

Channel	23165	RB Size 1	RB Offset 14	Channel	23165	RB Size 15	RB Offset 0
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LTE Band 12

Channel Bandwidth: 5MHz

Channel	23035	RB Size 1	RB Offset 0	Channel	23035	RB Size 25	RB Offset 0
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Channel Bandwidth: 5MHz

Channel	23155	RB Size 1	RB Offset 24	Channel	23155	RB Size 25	RB Offset 0
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LTE Band 12

Channel Bandwidth: 10MHz

Channel	23060	RB Size 1	RB Offset 0	Channel	23060	RB Size 50	RB Offset 0
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Channel Bandwidth: 10MHz

Channel	23130	RB Size 1	RB Offset 49	Channel	23130	RB Size 50	RB Offset 0
---------	-------	-----------	--------------	---------	-------	------------	-------------





LTE Band 17

Channel Bandwidth: 5MHz

Channel	23755	RB Size 1	RB Offset 0	Channel	23755	RB Size 25	RB Offset 0
---------	-------	-----------	-------------	---------	-------	------------	-------------



Channel Bandwidth: 5MHz

Channel	23825	RB Size 1	RB Offset 24	Channel	23825	RB Size 25	RB Offset 0
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LTE Band 17

Channel Bandwidth: 10MHz

Channel	23780	RB Size 1	RB Offset 0	Channel	23780	RB Size 50	RB Offset 0
---------	-------	-----------	-------------	---------	-------	------------	-------------



Channel Bandwidth: 10MHz

Channel	23800	RB Size 1	RB Offset 49	Channel	23800	RB Size 50	RB Offset 0
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2.7. Transmitter Radiated Power (EIRP/ERP)

2.7.1. Requirement

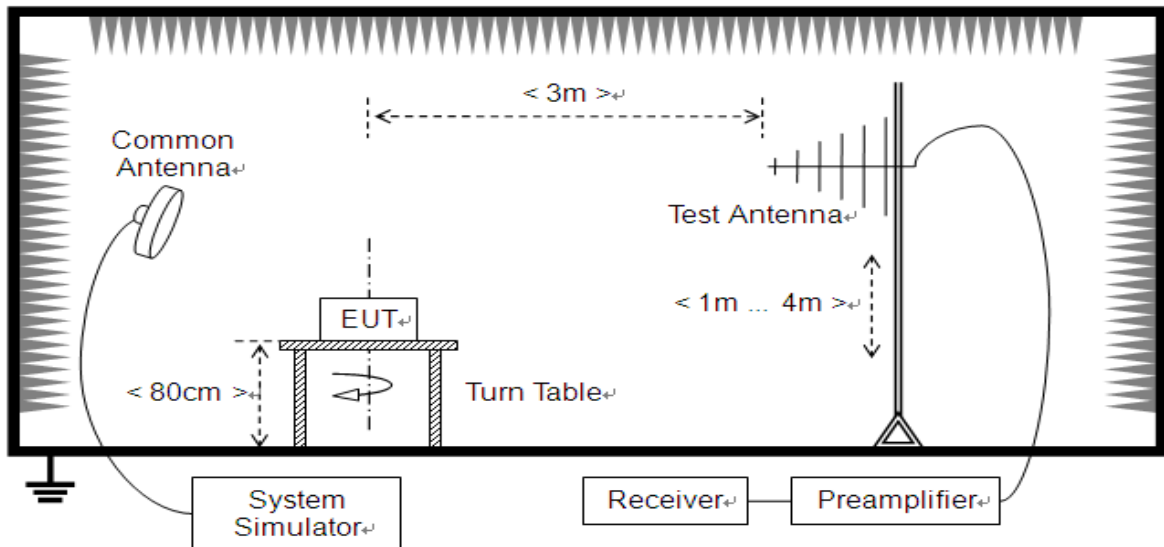
According to FCC section 24.232 (c) for LTE Band 2, Mobile and portable stations are limited to 2 watts EIRP and the equipment must employ a means for limiting power to the minimum necessary for successful communications.

According to FCC section 27.50 (d) for LTE Band 4, fixed, mobile and portable (hand-held) stations in the 1710-1755MHz band are limited to 1wat EIRP.

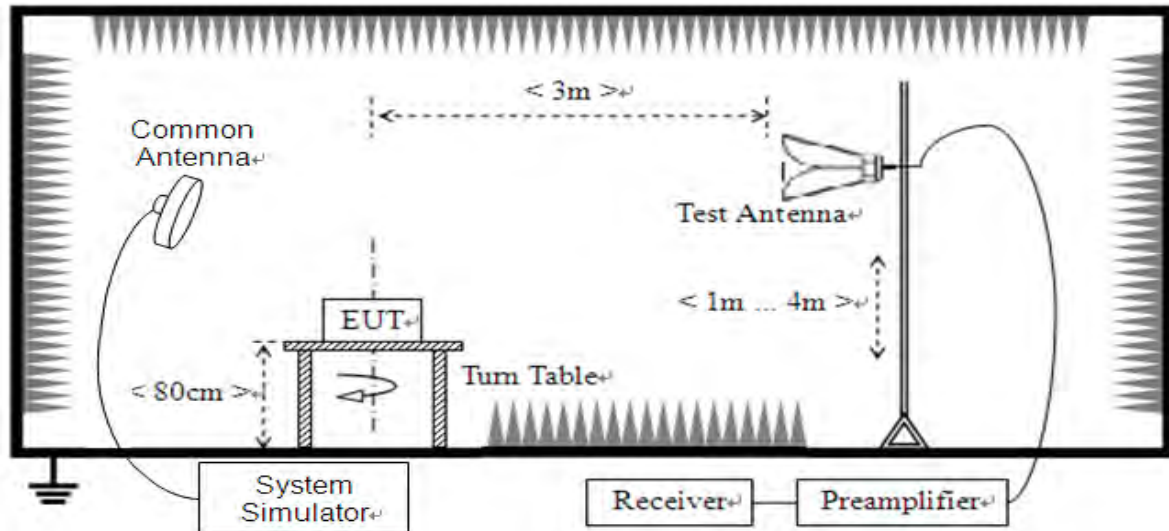
According to FCC section 27.50 (h) for LTE Band 7, Mobile and other user stations. Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.

According to FCC section 27.50 (c) for LTE Band 12/17, Portable stations (hand-held devices) operating in the 704-716MHz band are limited to 3watts ERP.

2.7.2. Test Description



(For the test frequency from 30MHz to 1GHz)



(For the test frequency above 1GHz)

The EUT is located in a 3m Full-Anechoic Chamber, the cable loss, air loss and so on of the site as factors are pre-calibrated using the "Substitution" method, and calculated to correct the reading.

A call is established between the EUT and the SS via a Common Antenna. The EUT is commanded by the SS to operate at the maximum and minimum output power, and only the test result of the maximum output power was recorded.

In the frequency range above 30MHz, Bi-Log Test Antenna (30MHz to 1GHz) and Horn Test Antenna (above 1GHz) are used. Test Antenna is 3m away from the EUT. Test Antenna height is varied from 1m to 4m above the ground and the Turn Table is actuated to turn from 0° to 360° to determine the maximum value of the radiated power. The emission levels at both horizontal and vertical polarizations should be tested. The Filters consists of Notch Filters and High Pass Filter.

2.7.3. Test procedure

KDB 971168 D01v03 Section 51&5.2 and ANSI/TIA-603-E-2016.



2.7.4. Test Result

The EUT was verified under all configurations (RB size and offset) and the worst case radiated power reported for each modulation/channel bandwidth.

The Turn Table is actuated to turn from 0° to 360°, and both horizontal and vertical polarizations of the Test Antenna are used to find the maximum radiated power. The lowest, middle and highest channels are tested.

The substitution corrections are obtained as described below:

$$A_{\text{SUBST}} = P_{\text{SUBST_TX}} - P_{\text{SUBST_RX}} - L_{\text{SUBST_CABLES}} + G_{\text{SUBST_TX_ANT}}$$

$$A_{\text{TOT}} = L_{\text{CABLES}} + A_{\text{SUBST}}$$

Where A_{SUBST} is the final substitution correction including receive antenna gain.

$P_{\text{SUBST_TX}}$ is signal generator level,

$P_{\text{SUBST_RX}}$ is receiver level,

$L_{\text{SUBST_CABLES}}$ is cable losses including TX cable,

$G_{\text{SUBST_TX_ANT}}$ is substitution antenna gain.

A_{TOT} is total correction factor including cable loss and substitution correction

During the test, the data of A_{TOT} was added in the Test Spectrum Analyze, so Spectrum Analyze reading is the final values which contain the data of A_{TOT} .

Note: Both horizontal and vertical polarizations of the test antenna are evaluated respectively, only the worst data (horizontal) were recorded in this report.