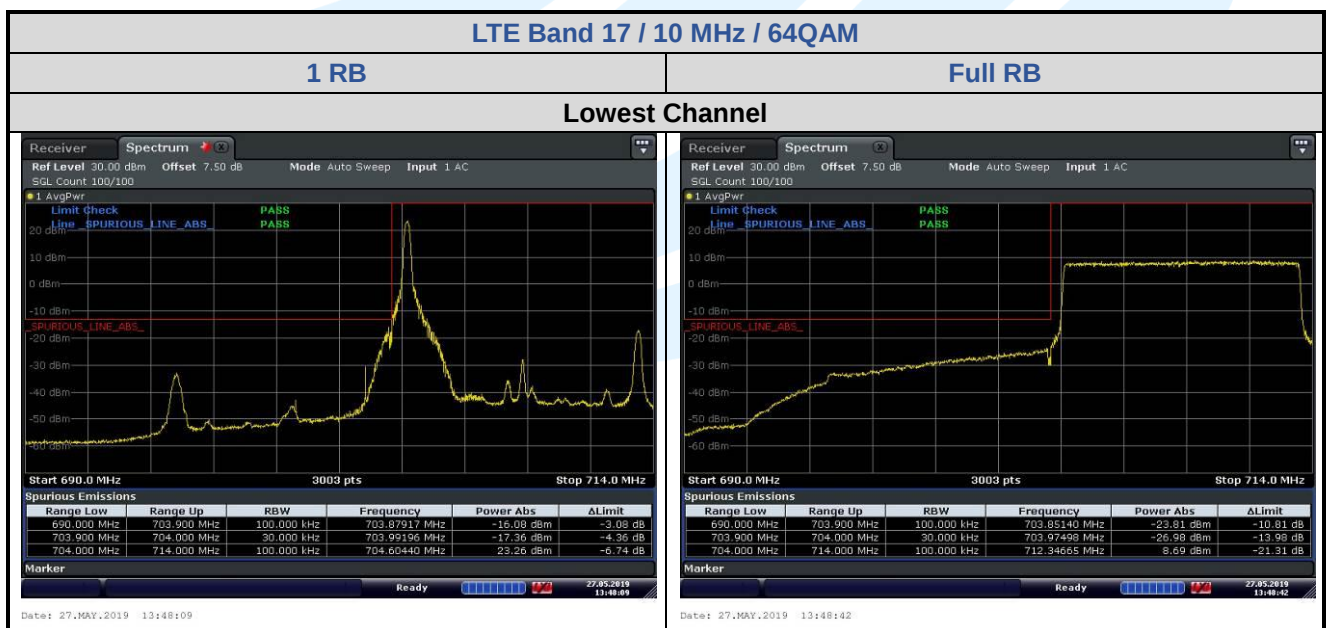
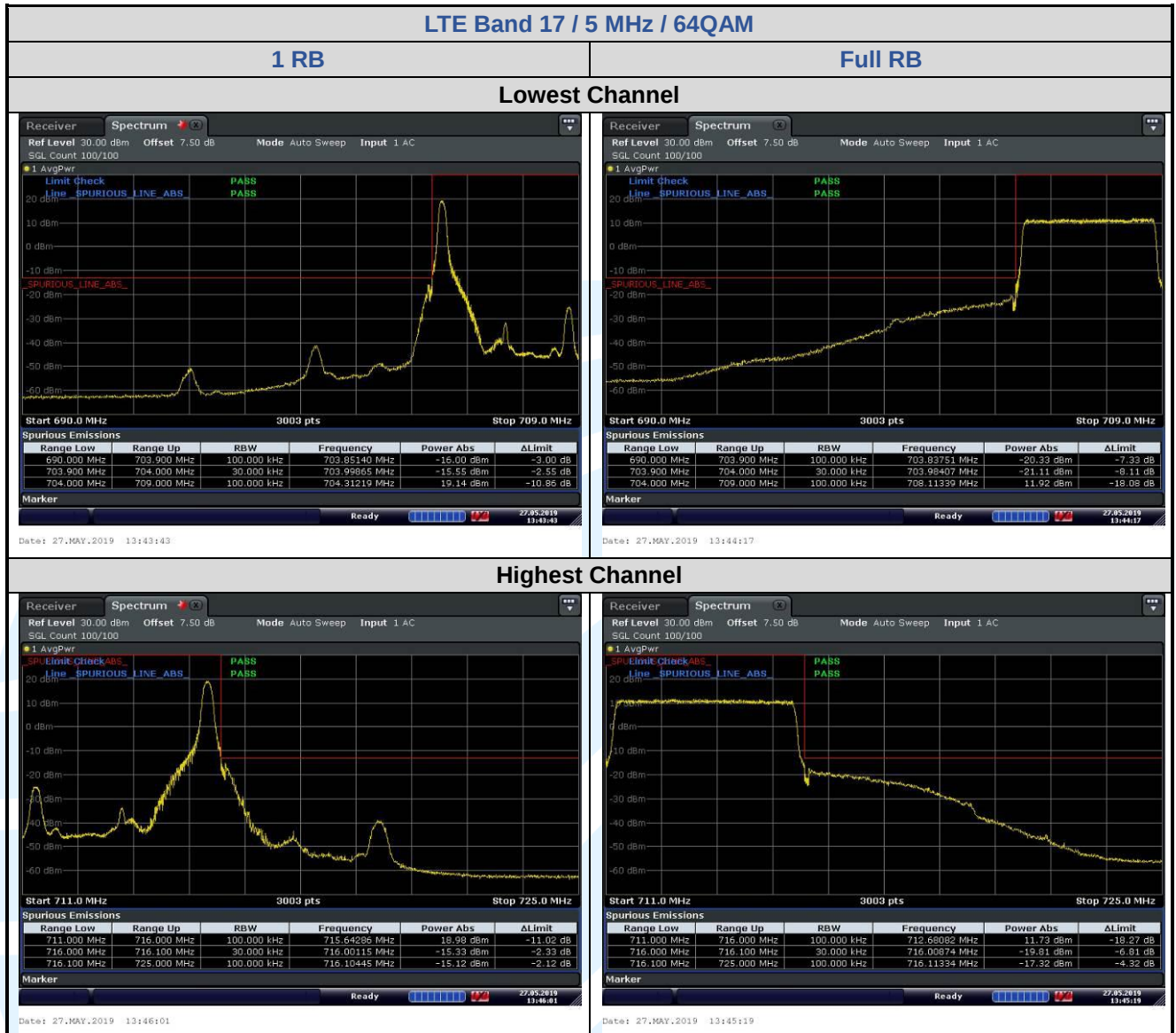






5.7 SPURIOUS EMISSIONS AT ANTENNA TERMINALS

Test Requirement: FCC 47 CFR Part 2.1051,
GSM 850 & WCDMA Band V & LTE Band 5: FCC 47 CFR Part 22.917(a)(b),
GSM 1900 & WCDMA Band II & LTE Band 2: FCC 47 CFR Part 24.238(a)(b),
WCDMA Band IV & LTE Band 4: FCC 47 CFR Part 27.53(h)(1),
LTE Band 12 & Band 17: FCC 47 CFR Part 27.53(g)
LTE Band 13: FCC 47 CFR Part 27.53(c)(2)
LTE Band 7: FCC 47 CFR Part 27.53(m)(4)

Test Method: ANSI/TIA-603-E-2016 & KDB 971168 D01v03r01

Limit:

FCC 47 CFR Part 22 & FCC 47 CFR Part 24: 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. The emission limit equal to -13 dBm.

FCC 47 CFR Part 27.53(g): For operations in the 600 MHz band and 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.

FCC 47 CFR Part 27.53(h)(1): Except as otherwise specified below, for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10}(P)$ dB. The emission limit equal to -13 dBm.

FCC 47 CFR Part 27.53(c)(2): On any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log(P)$ dB;

FCC 47 CFR Part 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.

Test Procedure:

The EUT makes a phone call to the communication simulator. All measurements were done at low, middle and high operational frequency range. b. Measuring frequency range is from 30 MHz to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower. Set RBW & VBW to 100 kHz for the measurement below 1 GHz, and 1 MHz for the measurement above 1 GHz.

Note: The cable loss and attenuator loss were offset into measure device as an amplitude offset.

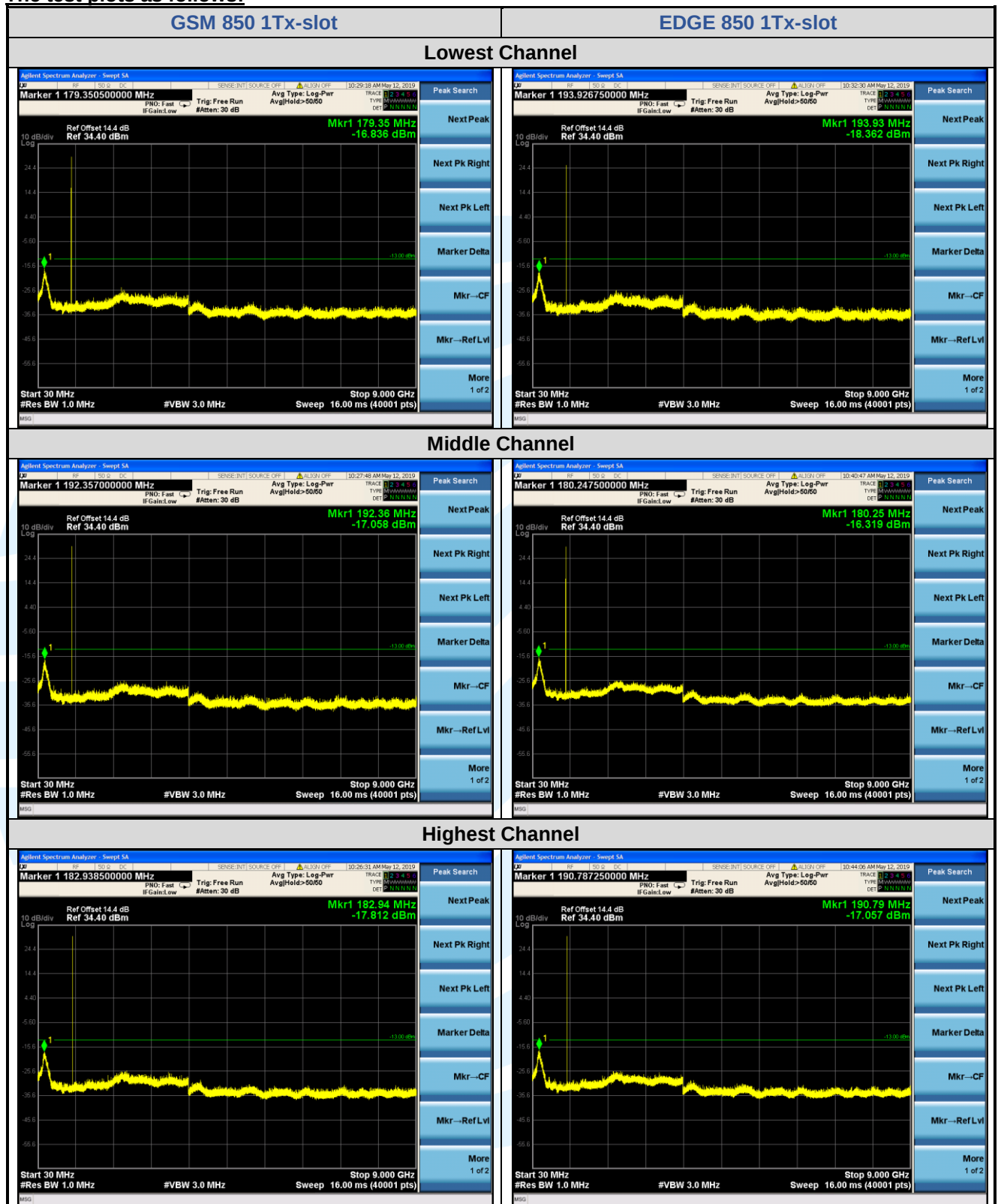
Test Setup: Refer to section 4.2.2 for details.

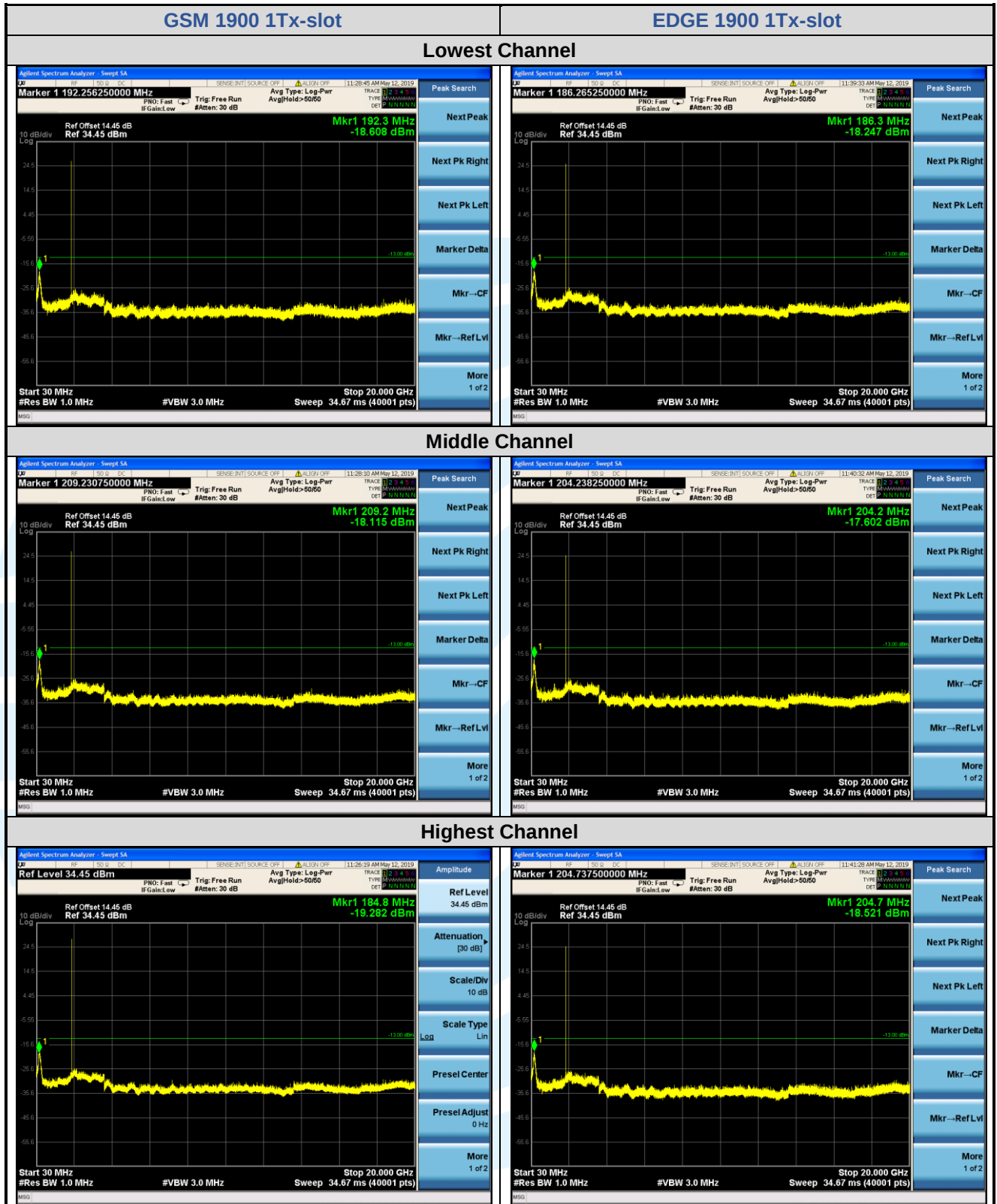
Instruments Used: Refer to section 3 for details

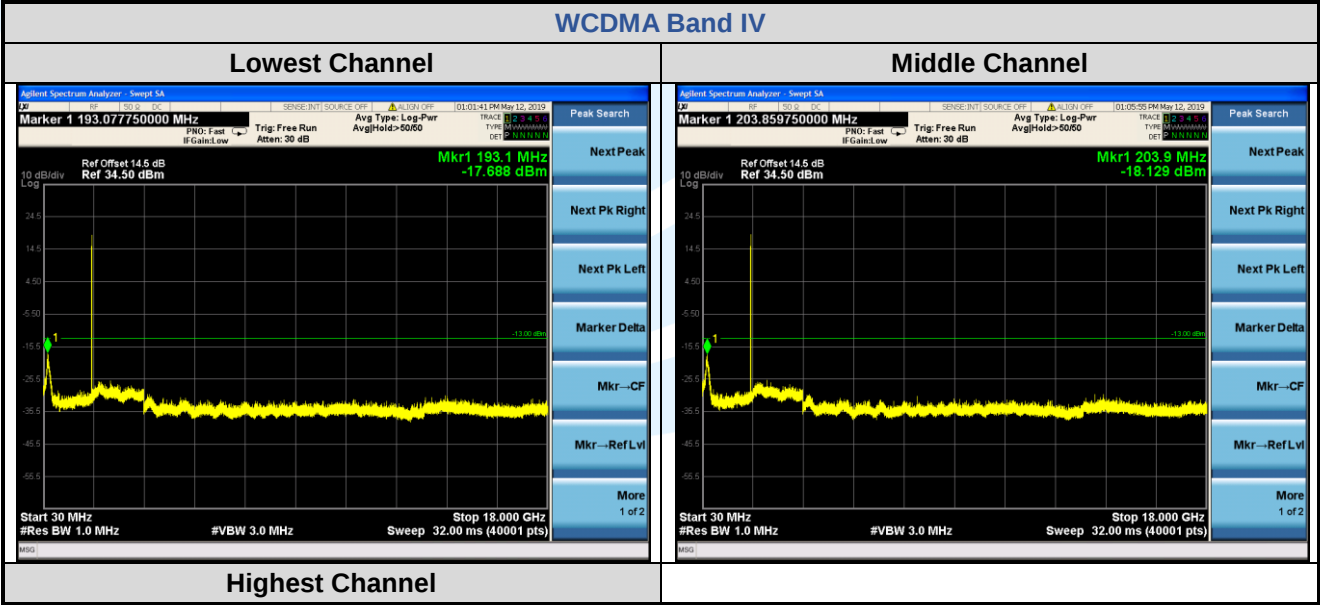
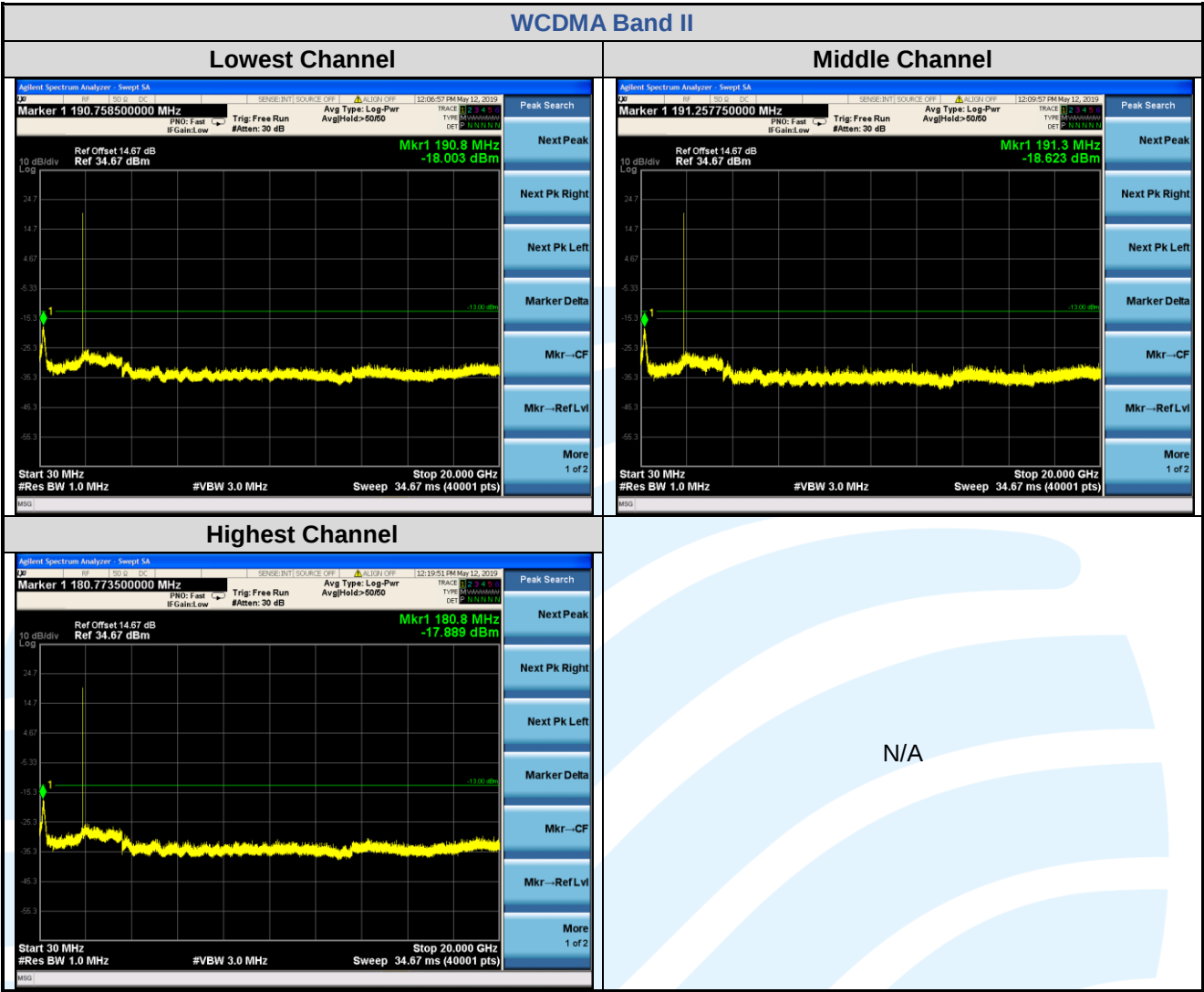
Test Mode: Link mode

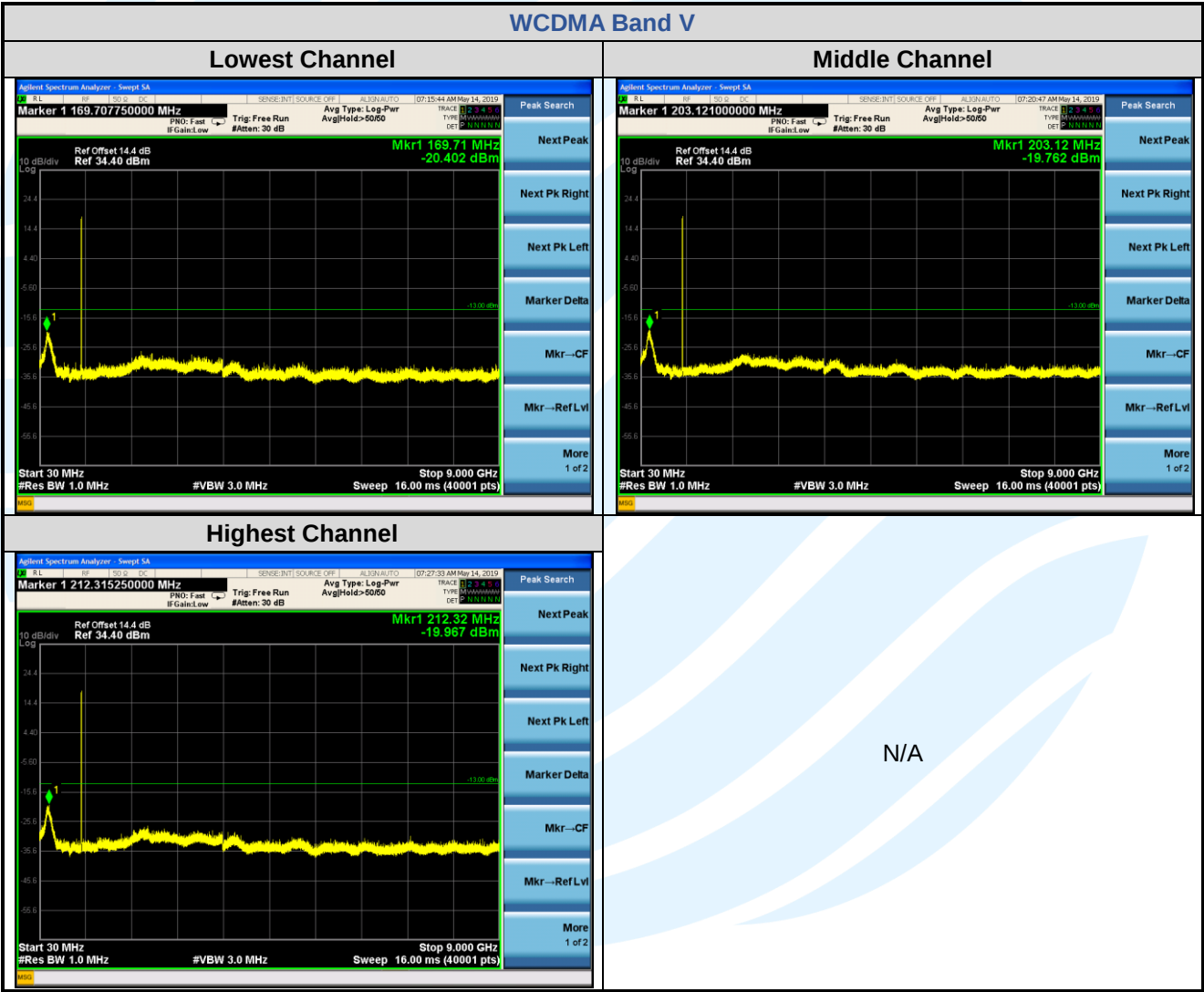
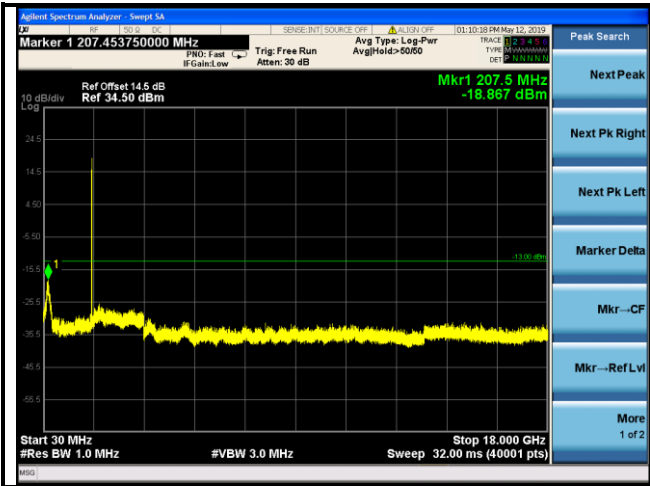
Test Results: Pass

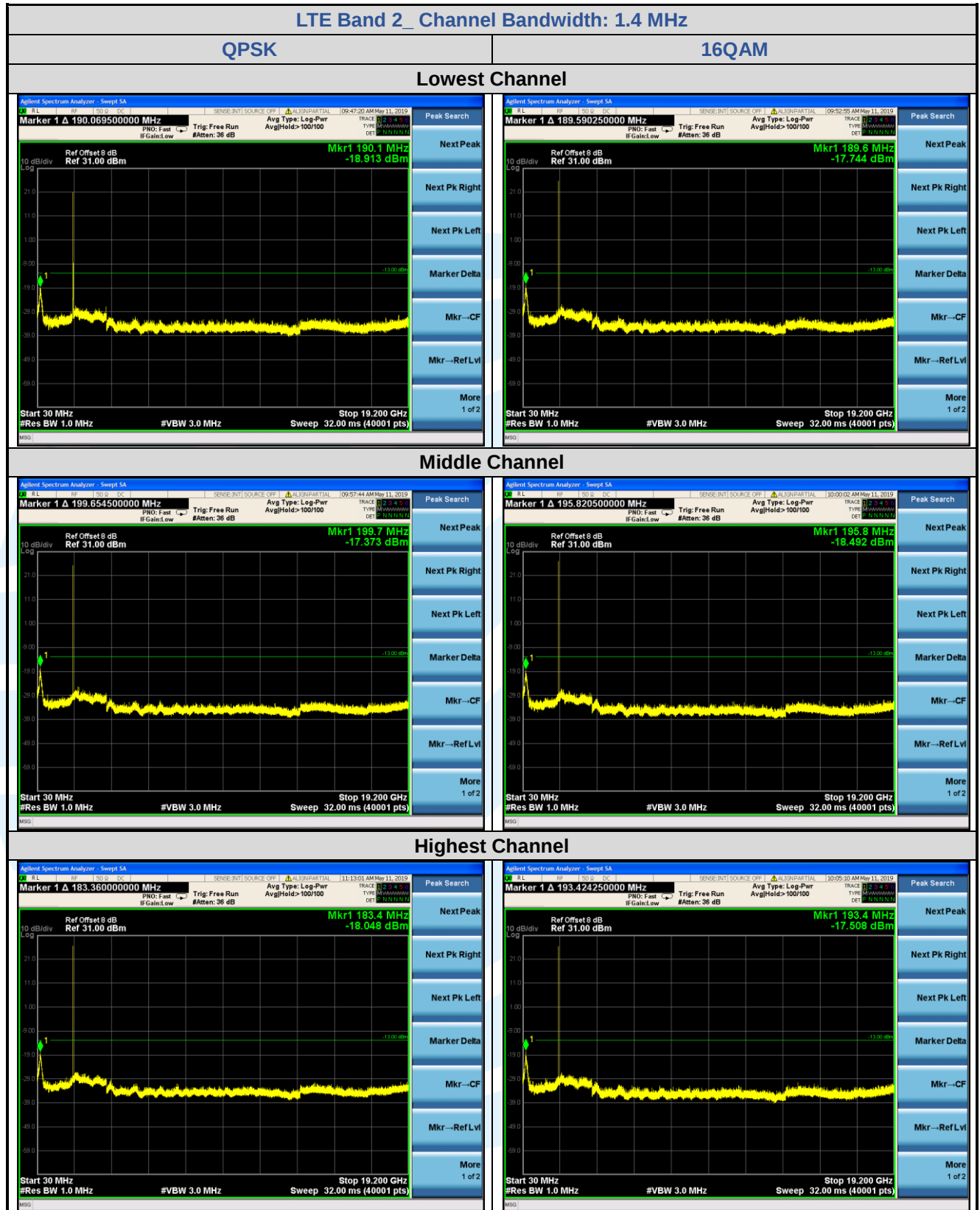
The test plots as follows:

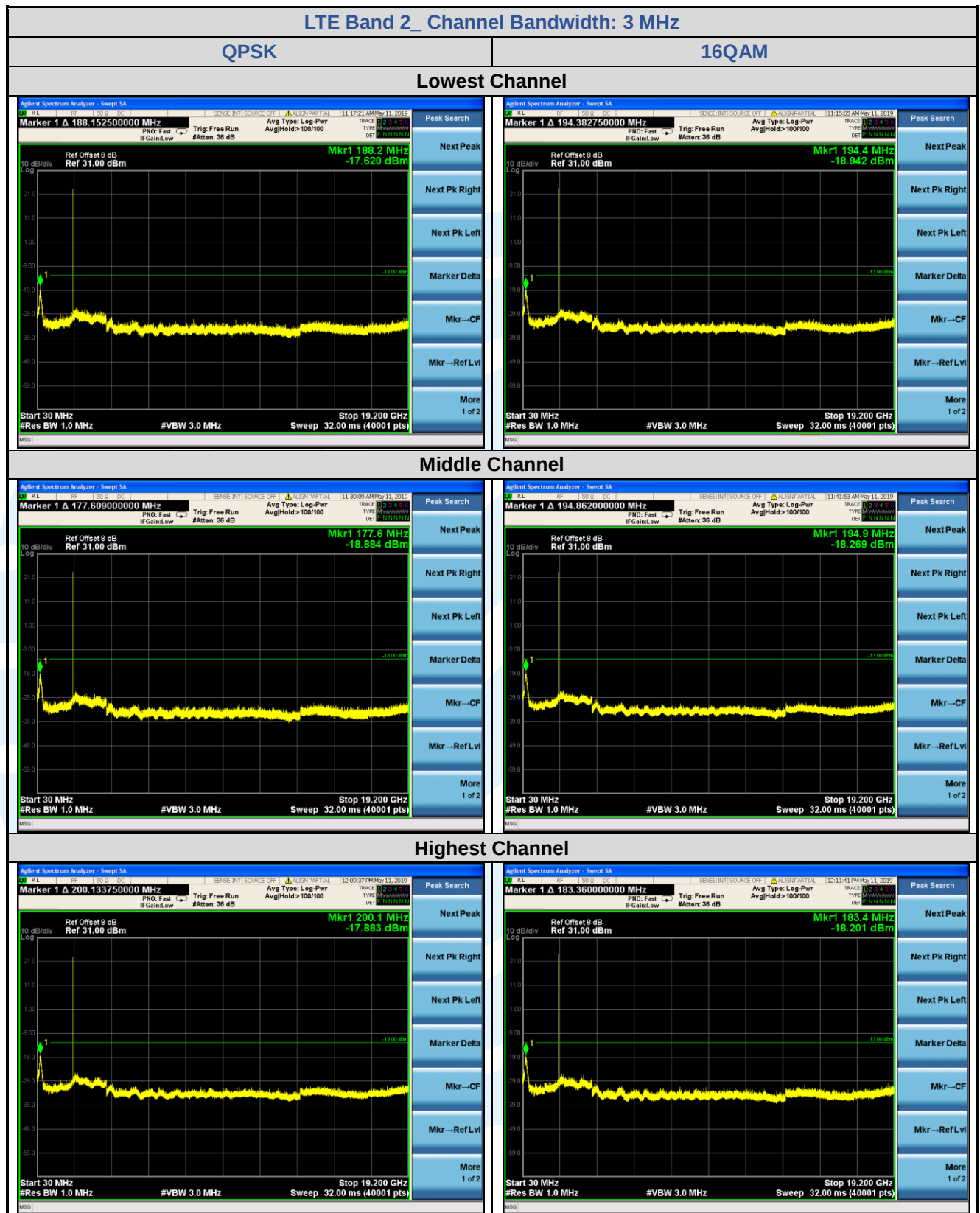


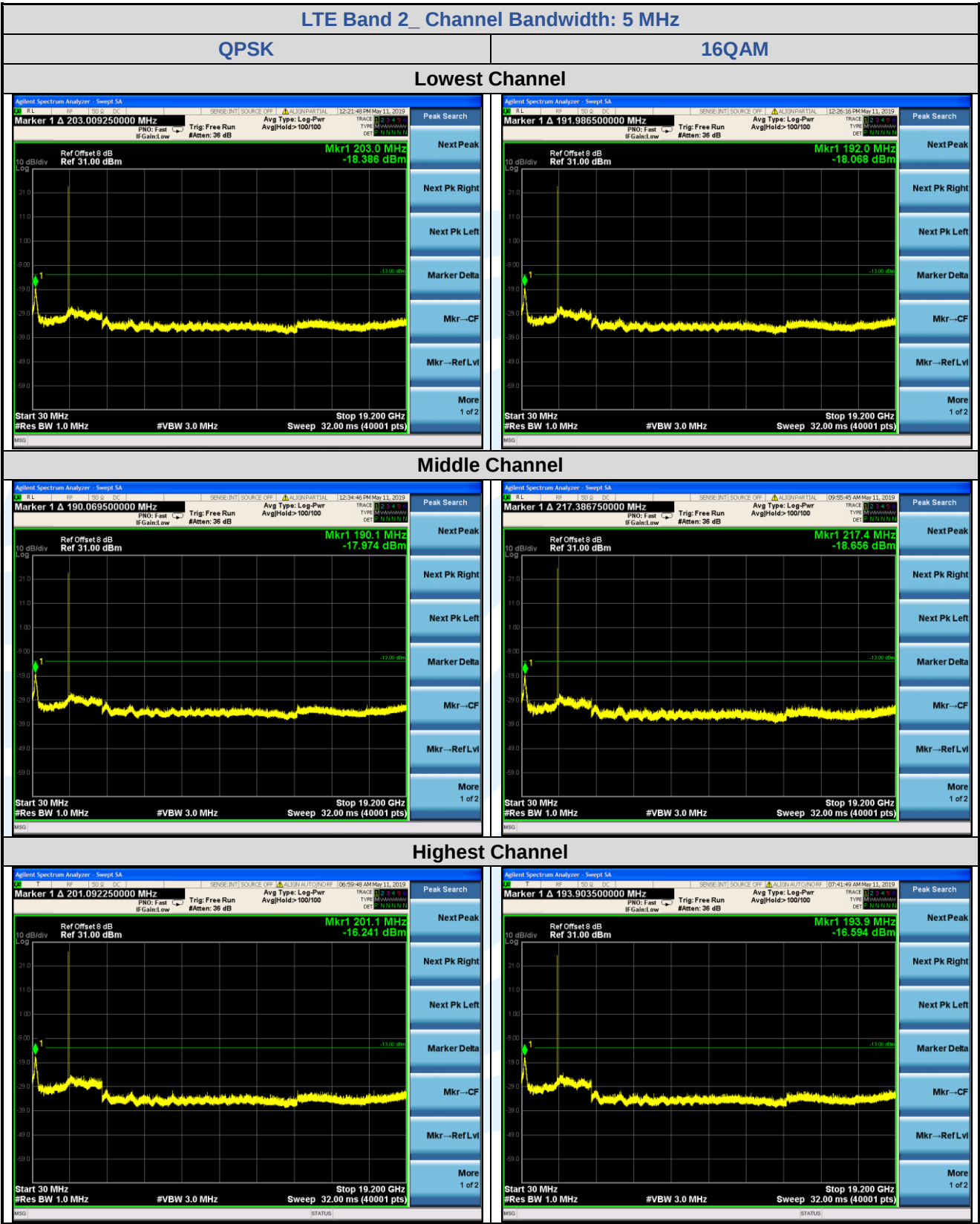












Middle Channel

Agilent Spectrum Analyzer - Sweep SA

Marker 1 Δ 190.069500000 MHz

Ref Offset 8 dB
Ref 31.00 dBm

Mkr1 190.1 MHz
-17.974 dBm

Start 30 MHz
#Res BW 1.0 MHz

#VBW 3.0 MHz

Sweep 32.00 ms (40001 pts)

Peak Search

Next Peak

Next Pk Right

Next Pk Left

Marker Delta

Mkr--CF

Mkr--Ref Lvl

More
1 of 2

Agilent Spectrum Analyzer - Sweep SA

Marker 1 Δ 193.987500000 MHz

Ref Offset 8 dB
Ref 31.00 dBm

Mkr1 217.4 MHz
-18.656 dBm

Start 30 MHz
#Res BW 1.0 MHz

#VBW 3.0 MHz

Sweep 32.00 ms (40001 pts)

Peak Search

Next Peak

Next Pk Right

Next Pk Left

Marker Delta

Mkr--CF

Mkr--Ref Lvl

More
1 of 2

Highest Channel

Agilent Spectrum Analyzer - Sweep SA

Marker 1 Δ 201.092250000 MHz

Ref Offset 8 dB
Ref 31.00 dBm

Mkr1 201.1 MHz
-16.241 dBm

Start 30 MHz
#Res BW 1.0 MHz

#VBW 3.0 MHz

Sweep 32.00 ms (40001 pts)

Peak Search

Next Peak

Next Pk Right

Next Pk Left

Marker Delta

Mkr--CF

Mkr--Ref Lvl

More
1 of 2

Agilent Spectrum Analyzer - Sweep SA

Marker 1 Δ 193.903500000 MHz

Ref Offset 8 dB
Ref 31.00 dBm

Mkr1 193.9 MHz
-16.594 dBm

Start 30 MHz
#Res BW 1.0 MHz

#VBW 3.0 MHz

Sweep 32.00 ms (40001 pts)

Peak Search

Next Peak

Next Pk Right

Next Pk Left

Marker Delta

Mkr--CF

Mkr--Ref Lvl

More
1 of 2

