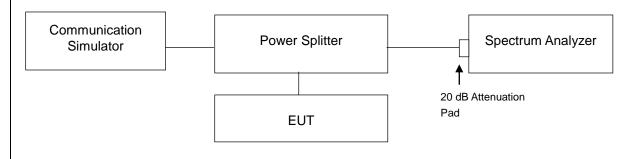


4.6 Conducted Spurious Emissions

4.6.1 Limits of Conducted Spurious Emissions Measurement

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.

4.6.2 Test Setup



4.6.3 Test Procedure

- a. The EUT makes a phone call to the communication simulator. All measurements were done at low, middle and high operational frequency range.
- Measuring frequency range is from 9 kHz to 9 GHz. 20 dB attenuation pad is connected with spectrum.
 RBW = 100 kHz and VBW = 300 kHz is used for conducted emission measurement.



4.6.4 Test Results

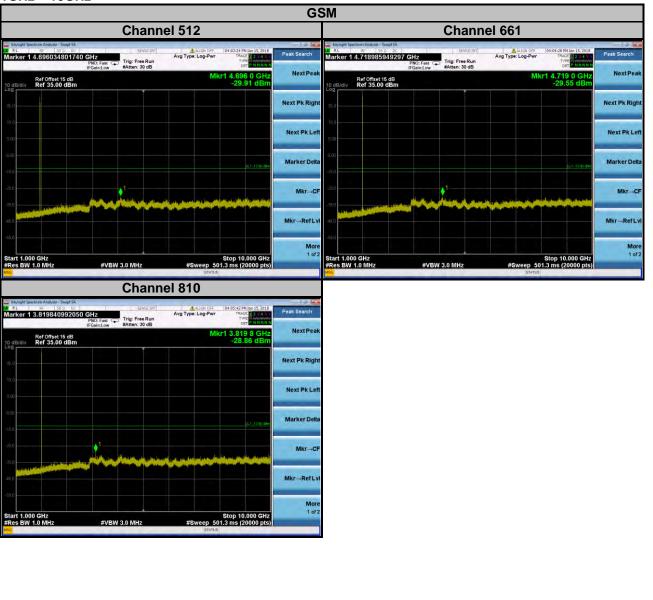
GSM

30MHz ~ 1GHz

| | | GS | SM |
|--|---|--------------------------|---|
| Chanr | nel 512 | | Channel 661 |
| Kongel tjenstem Andres Start få. Ref 990 bot Ref 990 bot Start 50 Ref 990 bot Start 50 Ref 07fret 15 dB Ref 07fret 15 dB Start 53.00 dBm | 4 NUGR OFF 049235 PH Man 15, 2018 Avg Type: Log-Pwr Twe Det Patients Mkr1 842.27 MHz -38, 85 G Brn | Peak Search Next Peak | Book States Stat |
| 10 dBR/div Ref 35.00 dBm | | Next Pk Right | 10 gBirdly Ref 35.00 dBm -37.20 dBm 50 Next Pk Right |
| 5.00 | | Next Pk Left | 15.0 Next Pk Left |
| -500 | DC1-1320-69- | Marker Delta | 500 x3.1220-de Marker Delta |
| -28.0 | 1 | Mkr→CF | san Mkr⊸CF |
| 450 | | Mkr→RefLvi | 450 Mkr-RefLyl |
| Start 0.0300 GHz #Res BW 1.0 MHz #VBW 3.0 MHz | Stop 1.0000 GHz #Sweep 501.3 ms (20000 pts) | More 1 of 2 | More More Start 0.0300 GHz \$top 1.0000 GHz 1 of 2 #Res BW 1.0 MHz #VBW 3.0 MHz #Sweep 501.3 ms (20000 pts) |
| | nel 810 | | |
| Revealed Spectram Revealed Service Service Structure Service S | ALIGN OFF 04:05:11 PM Ian 15, 2018 Avg Type: Log-Pwr TRACE T TVEE DET COLUMN | Peak Search Next Peak | |
| Ref Offset 15 dB | Mkr1 842.37 MHz -37.53 dBm | Next Pk Right | |
| 15.0 | | Next Pk Left | |
| 500 | 0(1-1200-dbg | Marker Delta | |
| -150 | | Mkr→CF | |
| at a second secon | | Mkr→RefLvi | |
| Start 0.0300 GHz #Res BW 1.0 MHz #VBW 3.0 MHz | Stop 1.0000 GHz #Sweep 501.3 ms (20000 pts) | More 1 of 2 | |
| ************************************** | #Sweep SU1.3 Ms (20000 pts) Status | | |



<u> 1GHz ~ 10GH</u>z





| | | GS | | | | | |
|---|--|----------------|---|--|--|--|--|
| Chann | nel 512 | | Channel 661 | | | | |
| kerpak Spectrum Andyzer Sang DC RL 87 SB DC Irker 1 26,181534076704 GHz PNO: Fast P IFGinLow #Atten: 30 dB | Aulon OFF 04:03:44 PM Jan 15, 2018 Avg Type: Log-Pwr TRACE 12 or 1 TYPE: DET CANNAN | Peak Search | Keyngle Spectram Andyser, Sengl Sk. Sengl Sk. Sengl Sk. SR Kr. Sengl Sk. Sengl Sk. Marker 1 26:492674133707 GHz. Trig: Free Run IFGeint. Trig: Free Run and St. | ALIGN OFF 04:04-32 PH Jan 15, 2018 Avg Type: Log-Pwr TRACE 13 4 0 TYPE 14 0 Det P.N.16 N.N. | | | |
| Ref Offset 15 dB B/div Ref 35.00 dBm | Mkr1 26.181 5 GHz -25.92 dBm | Next Peak | Ref Offset 15 dB 10 dB/div Ref 35.00 dBm Log | Mkr1 26.482 7 GHz -25.80 dBm | | | |
| | | Next Pk Right | 75.0 | | | | |
| 0 0 | | Next Pk Left | 5.00 | | | | |
| | DC1-1300 db9 | Marker Delta | 150 | C.1-1300 dbs | | | |
| a an | | Mkr→CF | an a | | | | |
| | | Mkr→RefLvi | -45.0 | | | | |
| art 10.000 GHz | Stop 26.500 GHz | More 1 of 2 | 550 Start 10.000 GHz | Stop 26.500 GHz #Sweep 501.3 ms (20000 pts) | | | |
| es BW 1.0 MHz #VBW 3.0 MHz | #Sweep 501.3 ms (20000 pts) | | #Res BW 1.0 MHz #VBW 3.0 MHz | #Sweep 501.3 ms (20000 pts) | | | |
| | nel 810 | | | | | | |
| Keynapis Spectrum Analyzer See Disc. See Disc. RL RF See Disc. See Disc. arKer 1 23.542227111356 GHz PNO: Fast Carl Trig: Free Run #Attent: 30 dB | Aug Type: Log-Pwr TRACE 12:001000 TYPE TYPE TYPE TYPE TYPE TYPE TYPE TYPE | Peak Search | | | | | |
| Ref Offset 15 dB dB/div Ref 35.00 dBm | Mkr1 23.542 2 GHz -25.96 dBm | Next Peak | | | | | |
| 0 | | Next Pk Right | | | | | |
| 50 | | Next Pk Left | | | | | |
| n | 2x.1 - 13.00 etter | Marker Delta | | | | | |
| | 1 | Mkr→CF | | | | | |
| | | Mkr→RefLvi | | | | | |
| u | | | | | | | |
| art 10.000 GHz | Stop 26.500 GHz | More 1 of 2 | | | | | |
| Res BW 1.0 MHz #VBW 3.0 MHz | #Sweep 501.3 ms (20000 pts) | | | | | | |



EDGE





1GHz ~ 10GHz

| | | | | ED | GE | | | | |
|--|---|---|---|----------------|--|--------------|---------------------|---|--------------|
| | Chann | el 512 | | | Channel 661 | | | | |
| keynget Spectrum Analyzer - Seept SA RL RF S8 0 DC arker 1 3.753237661883 GHz PNO: Far IFGain2.t | SENSE:INT Trig: Free Run #Atten: 30 dB | Aug Type: Log-Pwr | 04:08:09 PM Jan 15, 2018 TRACE 1 2 1 4 5 TYPE M DET P NINN N | - | Keysight Spectrum Analyzer Swept S RL RF 50 0 1 Marker 1 7.987499374 | DC SENSE: | n | 04:09:18 PM Jan 15, 2018 TRACE 2 14 5 1 TYPE DOLLARS A | eak Search |
| Ref Offset 15 dB B/div Ref 35.00 dBm | | Mk | r1 3.753 2 GHz -29.96 dBm | Next Peak | Ref Offset 15 dE | | Mk | r1 7.987 5 GHz -30.07 dBm | NextPea |
| 5.0 | | | | Next Pk Right | 25.0 | | | N | lext Pk Rigi |
| 40 | | | | Next Pk Left | 5.00 | | | | Next Pk Le |
| 20 | | | D.1-1380 dan | Marker Delta | -15.0 | | | 0.1 - 19 30 40m | Marker Del |
| o | | an a | ول مدينية والمراجع الم | Mkr→CF | -30 | | 1 | and the state of the second | Mkr→C |
| | | | | Mkr→RefLvi | -45 0 | | | | Mkr→RefL |
| art 1.000 GHz Res BW 1.0 MHz # | | | Stop 10.000 GHz | More 1 of 2 | Start 1.000 GHz | | | Stop 10.000 GHz | Mor 1 of |
| Res BW 1.0 MHz # | VBW 3.0 MHz | STATUS | 1.3 ms (20000 pts) | | #Res BW 1.0 MHz ^{MBG} | #VBW 3.0 MHz | #Sweep 50 STATUS | 1.3 ms (20000 pts) | |
| | Chann | el 810 | | | | | | | |
| RL RF 500 DC Aarker 1 9.146307315366 GHz PNC: Fa | SENSE:INT Trig: Free Run #Atten: 30 dB | ALIGN OFF Avg Type: Log-Pwr | 04:10:23 PM Jan 15, 2018 TRACE 1 2 3 4 5 TYPE 0 DET P NNNNN | Peak Search | | | | | |
| Ref Offset 15 dB dB/div Ref 35.00 dBm | | Mk | r1 9.146 3 GHz -29.43 dBm | Next Peak | | | | | |
| 5.0 | | | | Next Pk Right | | | | | |
| .00 | | | | Next Pk Left | | | | | |
| 5.0 | | | DC1:13/00 dBe | Marker Delta | | | | | |
| 50 | and the state of the | and the second secon | 1 Martin constant and a librar | Mkr→CF | | | | | |
| | | | | Mkr→RefLvi | | | | | |
| 6U | | | Stop 10.000 GHz | More 1 of 2 | | | | | |
| Start 1.000 GHz #Res BW 1.0 MHz # | VBW 3.0 MHz | #0 | 1.3 ms (20000 pts) | | | | | | |



| | | | | ED | GE | | | |
|---|--|--------------------------------|--|---|--|---|-------------------------------|--|
| | Chann | el 512 | | | | Chan | nel 661 | |
| Keysight Spectrum Analyzer Swept SA RL RF 50 0 DC arker 1 24.8160908045 | 540 GHz PNO: Fast Fries Run IFGoin:Low #Atten: 30 dB | AUGN OFF Avg Type: Log-Pwr | 04:08:36 PM Jan 15, 2018 TRACE 2 2 4 5 0 TYPE M DET PINNINN | Peak Search | Keynglet Spectrum Analyzer - Swept SA RL RF Se D DC Marker 1 26.400995049753 | SENSE:IM PNO: Fast IFGain:Low #Atten: 30 dB | Augn off Avg Type: Log-Pwr | 04:09:38 PM Jan 15, 201 TRACE 1 2 4 4 TYPE N DET P NNNN |
| B/div Ref 35.00 dBm | | Mkr | 1 24.816 1 GHz -25.80 dBm | NextPeak | Ref Offset 15 dB | | Mk | 1 26.401 0 GH -25.30 dBr |
| 5.0 | | | | Next Pk Right | 75 0 | | | |
| 10 | | | | Next Pk Left | 5.00 | | | |
| 00 5.0 | | | D.1.1380 abr | Marker Delta | -15.0 | | | D.1.1380-80 |
| | ndersonia a tale sine a barrer danelia | | | Mkr→CF | -25.0 | الأفاحيات فيراح التحاية | الرجحة البني وبالبومة | |
| | | | | Mkr→RefLvi | 450 | | | |
| tart 10.000 GHz | | | Stop 26.500 GHz 1.3 ms (20000 pts) | More 1 of 2 | -58 U Start 10.000 GHz | | | Stop 26.500 GH 01.3 ms (20000 pt |
| Res BW 1.0 MHz | #VBW 3.0 MHz | STATUS | 1.3 ms (20000 pts) | | #Res BW 1.0 MHz ^{MSG} | #VBW 3.0 MHz | #Sweep 51 | 01.3 ms (20000 pt |
| | Chann | el 810 | | | | | | |
| Keysight Spectrum Analyzer - Swept SA RL RF 58 D DC arker 1 23.8540927046 | 535 GHz PNO: Fest Frie Run IFGoin:Low #Atten: 30 dB | ALIGN OFF Avg Type: Log-Pwr | 04:10:42 PM Jan 15, 2018 TRACE 1 2 3 4 5 0 TYPE MUNICIPAL OF PINNINN | Peak Search | | | | |
| Ref Offset 15 dB | | Mkr | 1 23.854 1 GHz -25.94 dBm | Next Peak | | | | |
| 5.0 | | | | Next Pk Right | | | | |
| 5.0 | | | | Next Pk Left | | | | |
| n | | | 0.1.1530 abi | Marker Delta | | | | |
| 50 | and a start of the start of the start of | - American Soly & American | | Mkr→CF | | | | |
| | | | الكنانية التقالية | | | | | |
| | | | | Mkr→RefLvi | | | | |
| 60 | | | | and the second se | | | | |
| 450 550 Start 10.000 GHz FRes BW 1.0 MHz | #VBW 3.0 MHz | #Sween 50 | Stop 26.500 GHz 1.3 ms (20000 pts) | More 1 of 2 | | | | |



WCDMA





1GHz ~ 10GHz

| | | | WCE | MA | | | |
|---|--|---|--|--|--------------|--------------------------------------|--|
| | Channel | 9262 | | | | el 9400 | |
| Keynght Spectrum Analyzer Swept SA RL RF S0 D DC arker 1 3.99444972241 | SENSE:INT 36 GHz PNO: Fast IFGein:Low #Atten: 30 dB | ALIGN OFF 04:13:48 PM Ian 15, 2018 Avg Type: Log-Pwr TRACE 12 C C TYPE DET PMNINN | Feak Scarch | Keysget Spectrum Analyzer - Seept Sa RL RF 50 D DI Marker 1 4.0192009600 | SENSE:INT | Avg Type: Log-Pwr | 4:14:50 PM Jan 15, 2018 TRACE 1 2 3 4 F TYPE COMMANY DET P. N.N.N.N.N |
| dB/div Ref 35.00 dBm | | Mkr1 3.994 4 GHz -29.88 dBm | Next Peak | Ref Offset 15 dB | 1 | Mkr1 | 4.019 2 GHz -29.12 dBm |
| 0 | | | Next Pk Right | 35.0 | | | |
| | | | Next Pk Left | 5.00 | | | |
| | | 0.1 -10.00 e0e | Marker Delta | -15.0 | | | D. 1 : 19 /0 edim |
| | | و والدوار و المراجع المراجع و ا | Mkr→CF | -30 | | والمتحديد والمراجع والمراجع والمراجع | ومعربة والمراسية |
| | | | Mkr→RefLvi | 450 Latrantic Latrantic Latra | | أقلد يعمل | |
| | | | | | | | |
| art 1.000 GHz | | Stop 10.000 GHz | More 1 of 2 | -55.0 Start 1.000 GHz | | s | top 10.000 GHz |
| reysight Spectrum Analyzer - Swept SA RL RF - 1500, DC | ≠vbw 3.0 MHz Channel | A LUCK OF THE REAL OF DESIGN | 1 of 2 | Start 1.000 GHz #Res BW 1.0 MHz We | #VBW 3.0 MHz | S #Sweep 501.3 STATUS | top 10.000 GHz ms (20000 pts) |
| nynget Spectrum Andlyzer - Swept SA L 95 59 0 00 *ker 1 4.76938846943 Ref Offset 15 dB | Channel 22 CH2 PRO: Fast From: Trig: Free Run Atten: 30 dB | STATUS | 1 of2 | Start 1.000 GHz #Res BW 1.0 MHz | #VBW 3.0 MHz | \$ #\$weep_501.3 giaus | top 10.000 GHz ms (20000 pts) |
| evropt Spectrum Androw - Swept SA RL 97 590 00 rker 1 4.76938846943 Ref Offset 15 dB | Channel 22 CH2 PRO: Fast From: Trig: Free Run Atten: 30 dB | | 1 of2 Peak Search Next Peak | Start 1.000 GHz #Res BW 1.0 MHz | #VBW 3.0 MHz | \$ #\$weep_501.3 gratu3) | top 10.000 GHz ms (20000 pts) |
| Art 1.000 GHz es BW 1.0 MHz United Spectrum Address Sector Process Art - | Channel 22 CH2 PRO: Fast From: Trig: Free Run Atten: 30 dB | (0/15:02 PH lan 15: 2018 (0/15:02 PH lan 15: 2018 Avg Type: Log-Pur That: Eleg-Pur That: Eleg-Pur Mkr1 47:69 4 GHz -30.04 dBm | Pesk Search Next Peak Next Pk Right Next Pk Left | Start 1.000 GHz #Res BW 1.0 MHz | #VBW 3.0 MHz | 8 #Sweep 5013 grans | top 10.000 GHz ms (20000 pts) |
| Art 1.000 GHz es BW 1.0 MHz BK 000 Status Sund 14 8 C 99 Sto BC strker 1 4.76938B46941 diskut Ref 35.00 dBm diskut Ref 35.00 dBm diskut status | Channel 22 CH2 PRO: Fast From: Trig: Free Run Atten: 30 dB | (0/15:02 PH lan 15: 2018 (0/15:02 PH lan 15: 2018 Avg Type: Log-Pur That: Eleg-Pur That: Eleg-Pur Mkr1 47:69 4 GHz -30.04 dBm | Pesk Search Pesk Search Next Peak Next Pk Right Next Pk Left Marker Delta | Start 1.000 GHz #Res BW 1.0 MHz | #VBW 3.0 MHz | 9 #Sweep 5013 grans | top 10.000 GHz ms (20000 pts) |
| 61 | Channel 22 CH2 PRO: Fast From: Trig: Free Run Atten: 30 dB | (0/15:02 PH lan 15: 2018 (0/15:02 PH lan 15: 2018 Avg Type: Log-Pur That: Eleg-Pur That: Eleg-Pur Mkr1 47:69 4 GHz -30.04 dBm | 1 or2 Peak Search Next Peak Next Pk Right Next Pk Left Marker Delta MkrCF MkrCF | Start 1.000 GHz #Res BW 1.0 MHz | #VBW 3.0 MHz | 8 #Sweep 5013 grans | top 10.000 GHz ms (20000 pts) |



| | | | WC | | |
|--|---|---|------------------------------|---|---|
| | Channe | el 9262 | | | nnel 9400 |
| eysget Spectrum Analyzer - Swept SA RL RF S0 D DC rker 1 26.38779438972 | PNC: Fast IFGain:Low #Atten: 30 dB | ALIGN OFF. 04:14:09 PM Jan 15, 2018 Avg Type: Log-Pwr TRACE TYPE TYPE Det PMMMMM | Peak Search | RL RF IS DE DC STATUS RL RF IS DE DC STATUS Marker 1 24.062003100155 GHz FRG RL Trig: Free R IFGani.Jow | B DET PRINT |
| dB/div Ref 35.00 dBm | | Mkr1 26.387 8 GHz -25.79 dBm | NextPeak | Ref Offset 15 dB 10 dB/div Ref 35.00 dBm | Mkr1 24.062 0 G -25.00 dE |
| 5.0 | | | Next Pk Right | 75.0 | |
| .0 | | | Next Pk Left | 5.00 | |
| 00 .0 | | 0.1.13.00 cBn | Marker Delta | -16.0 | |
| a . Marina di Katalan Marina di Katalan Marina | | | Mkr→CF | | |
| şά | | | Mkr→RefLvi | -450 | |
| tart 10.000 GHz | | Stop 26.500 GHz #Sweep 501.3 ms (20000 pts) | More 1 of 2 | Start 10.000 GHz | Stop 26.500 G #Sweep 501.3 ms (20000 p |
| es BW 1.0 MHz | #VBW 3.0 MHz | STATUS | | #Res BW 1.0 MHz #VBW 3.0 MHz | #Sweep 501.3 ms (20000 p |
| an order Department And and Depart Ch | Channe | el 9538 | | | |
| Keysight Spectrum Analyzer - Swept SA RL RF 58 D DC arker 1 26.08830441522 | PNO: Fast IFGein:Low #Atten: 30 dB | Avg Type: Log-Pwr TRADE 12, 24 1 TYPE: Dog-Pwr TRADE 2, 4 1 TYPE: Dog-Pwr TRADE 12, 4 1 | Peak Search | | |
| Ref Offset 15 dB dB/div Ref 35.00 dBm | Pointow writer of ab | Mkr1 26.088 3 GHz -26.08 dBm | Next Peak | | |
| g .0 | | | Next Pk Right | | |
| 0 10 | | | Next Pk Left | | |
| 0 | | 0.1 -1920 eBe | Marker Delta | | |
| 10 | | | Mkr→CF | | |
| | والمحاور والتروير والمرجوع والمقاومات الم | | | | |
| su su su | | | Mkr→RefLvi | | |
| | | Stop 26.500 GHz | Mkr→RefLvl More 1 of 2 | | |



CDMA

Start 0.0300 GHz #Res BW 1.0 MHz

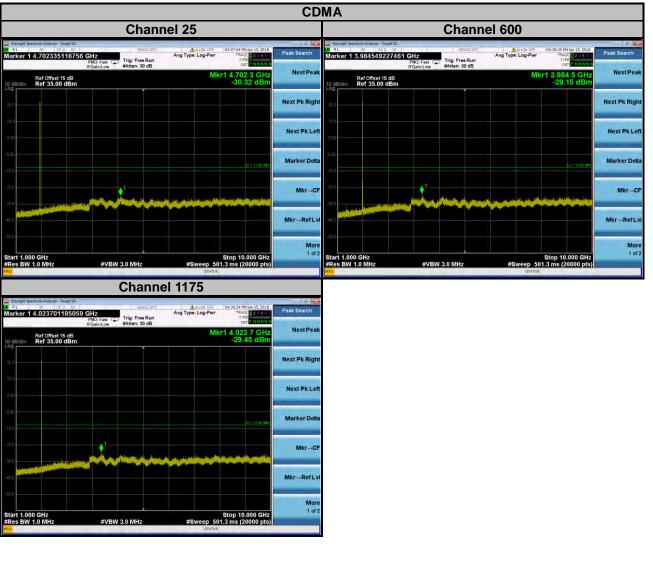
#VBW 3.0 MHz



Stop 1.0000 GHz #Sweep 501.3 ms (20000 pts)



<u> 1GHz ~ 10GH</u>z





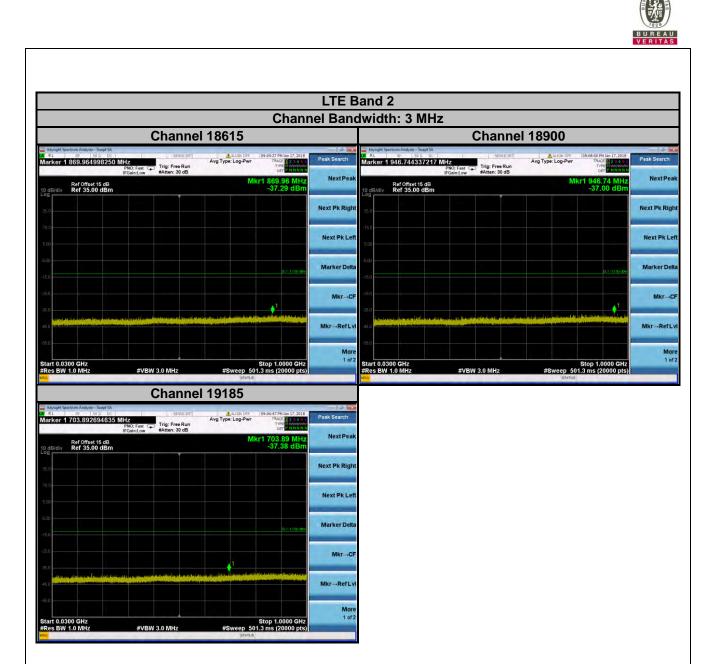
| | | | | | | | DMA | | | | |
|--|---|---|--|---|--|---|--|----------------------------|--|----------------------------|--|
| | Chanr | nel 25 | | | Channel 600 | | | | | | |
| Reysight Spectrum Analyzer - Swept SA RL 9F 58 0 DC Rarker 1 26.0041502075 | 10 GHz PNO: Fast Trig: Free Run IFGain1.ow #Atten: 30 dB | Avg Type: Log-Pwr | 37-23 PM Jan 15, 2018 TRACE 1 2 3 4 5 TYPE NUMBER OF PINNINN | Peak Search | RL RF 500 RL RF 500 Rker 1 26.4282214 | 11071 GHz | SENSE:INT Trig: Free Run #Atten: 30 dB | ALIGN C Avg Type: Log-P | OFF 04:38:56 PM II PWF TRACE TVPE DET | 123410 NWWWWW PNNNNN | |
| Ref Offset 15 dB | | Mkr1 26 | 6.004 2 GHz -25.78 dBm | Next Peak | Ref Offset 15 d dB/div Ref 35.00 dB | | | M | Mkr1 26.428 -25.8 | 2 GHz Nex | |
| 25.0 | | | | Next Pk Right | 15.0 | | | | | Next Pk | |
| .0 | | | | Next Pk Left | 5.00 | | | | | Next P | |
| 5.0 | | | 0.1.13/09 dbm | Marker Delta | 5.0 | | | | a | Marker | |
| sa sa <mark>kiintinti kuului san Al</mark> i | | | | Mkr→CF | 50 8 л <mark>(19 м. с.)</mark> - (19 (19 м. | in the second | | | | Mk | |
| 15 D | | | | Mkr→RefLvi | 15 D | | | | | Mkr→F | |
| | | Sto | op 26.500 GHz | More 1 of 2 | | | | | Stop 26.5 | | |
| Res BW 1.0 MHz | #VBW 3.0 MHz | Sto #Sweep 501.3 n | ms (20000 pts) | 5 | tart 10.000 GHz Res BW 1.0 MHz | #VBW | 3.0 MHz | #Sweep | Stop 26.5 501.3 ms (20) | 000 gHz 000 pts) | |
| Start 10.000 GHz Res BW 1.0 MHz Res | #VBW 3.0 MHz Channe | STATUS | ms (20000 pts) | # | tart 10.000 GHz Res BW 1.0 MHz | #VBW | 3.0 MHz | #Sweep | 501.3 ms (201 ATUS | 000 pts) | |
| Reysgiet Spectrum Andrew - Swort SA RL 87 - 199 0 0 0 Jarker 1 26.17658382911 Ref Offset 15 dB | Channe | Allon OFF 04: Avg Type: Log-Pwr MKr1 28 | 39:55 PM Jan 15, 2018 TRACE 12 14 TYPE P NAMAN DET P NAMAN 5.176 6 GHz | 5 | tart 10.000 GHz Res BW 1.0 MHz | #VBW | 3.0 MHz | #Sweep or | 501.3 ms (200 | 000 pts) | |
| Arker 1 26. 1765 all of the second se | | Allon OFF 04: Avg Type: Log-Pwr MKr1 28 | 2955 PH Jan 15, 2018 174 GC 11, 2 of 14 174 | Peak Search | tart 10.000 GHz Res BW 1.0 MHz | ≇VBW | 3.0 MHz | #Sweep or | 501.3 ms (200 | 000 pts) | |
| Keysight Spectrum Analyzer - Swept SA RL RF ISSO DC Aarker 1 26,1765938291 | | Allon OFF 04: Avg Type: Log-Pwr MKr1 28 | 2955 PH Jan 15, 2018 174 GC 11, 2 of 14 174 | Peak Search Next Peak | tart 10.000 GHz Res BW 1.0 MHz | ₽VBW | 3.0 MHz | #Sweep | 501.3 ms (200 | 000 pts) | |
| Asympt Spectrum Budger Swept SA A.L. 000 Atkert 1 26.170563826919 OrdEldiv Ref Offset 15 dB Other State 000 State 000 State 000 State 000 | | Allon OFF 04: Avg Type: Log-Pwr MKr1 28 | 2955 PM too 15, 2018 TRACE (D. 24 COL) or (D | Peak Search Next Peak | tart 10.000 GHz Res BW 1.0 MHz | ₽VBW | 3.0 MHz | #Sweep | <u>501,3 ms (201</u> | 000 pts) | |
| Marget System Redger, Swell A. Marget System Redger, Swell A. Marker 1 26, 17659382913 Aarker 1 26, 17659382913 Order Offset 15 dB 0< | | Avg Type: Log-Pwr | 29-55 PM too 15, 2018 Third (2) 20 4 5 4 ref 000 5, 176 6 GHz -25, 87 dBm | Peak Search Next Peak Next Pk Right Next Pk Left | tart 10.000 GHz Res BW 1.0 MHz | ≢vbw | 3.0 MHz | #Sweep | <u>9013 ms (201</u> | 000 pts) | |
| 16/02/15/02/5 m Subject 5 mm 12/02 16/02/15/02 mm 12/02/15/02 mm 12/02 Arrker 1 26.1765/83/82/919 0.481div Ref Offset 15 dB 0.481div Ref Offset 15 dB 0.481div Ref 53.00 dBm | Channe PRO: Fear Configuration of the second | Avg Type: Log-Pwr | 29-55 PM tao 15, 2018 TRace 16, 2018 v V Core 2018 V V V Core 2018 V V V Core 2018 V V V V Core 2018 V V V V V V V V V V V V V V V V V V V | Peak Search Next Peak Next Pk Right Next Pk Left Marker Delta | tart 10.000 GHz Res BW 1.0 MHz | ₽VBW | 3.0 MHz | #Sweep | <u>. 501,3 ms (20</u> | 000 pts) | |

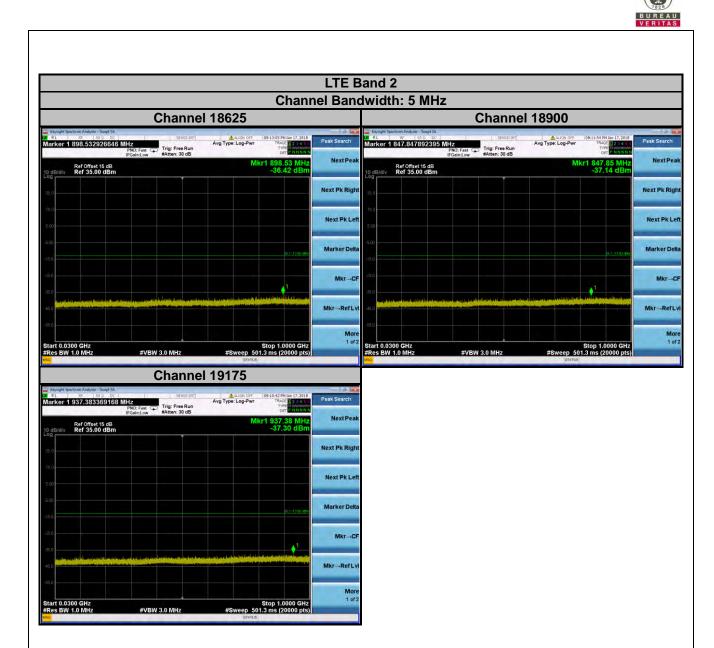


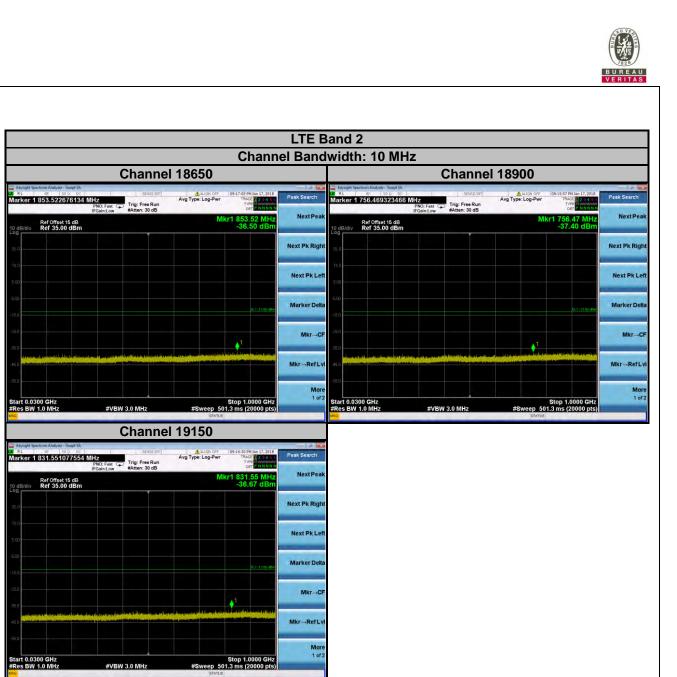
LTE Band 2

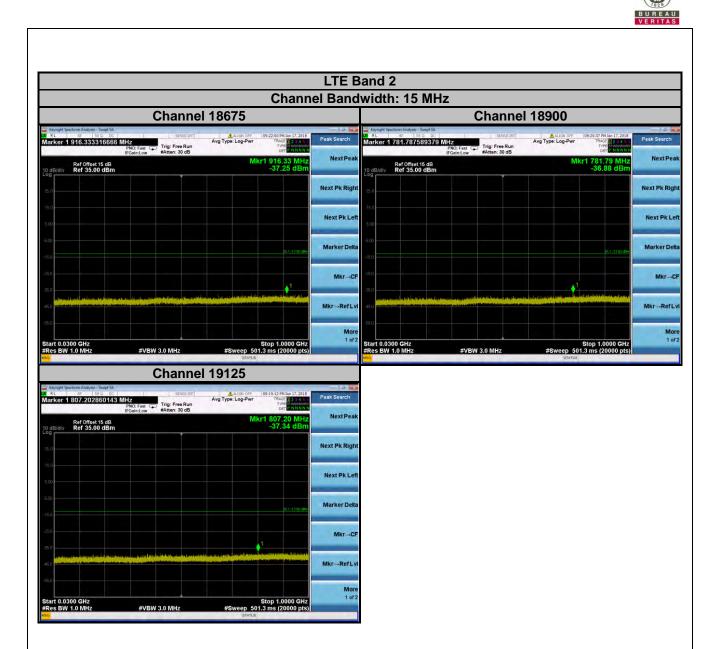
30MHz ~ 1GHz

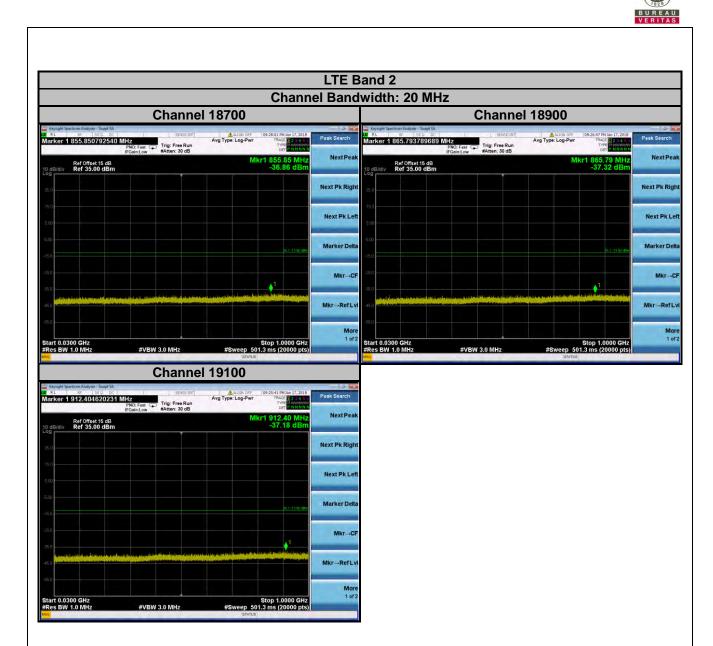






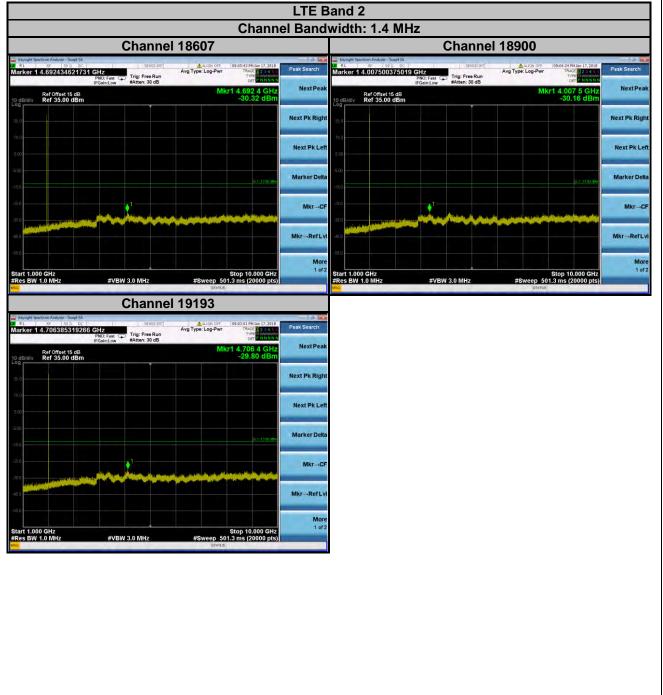


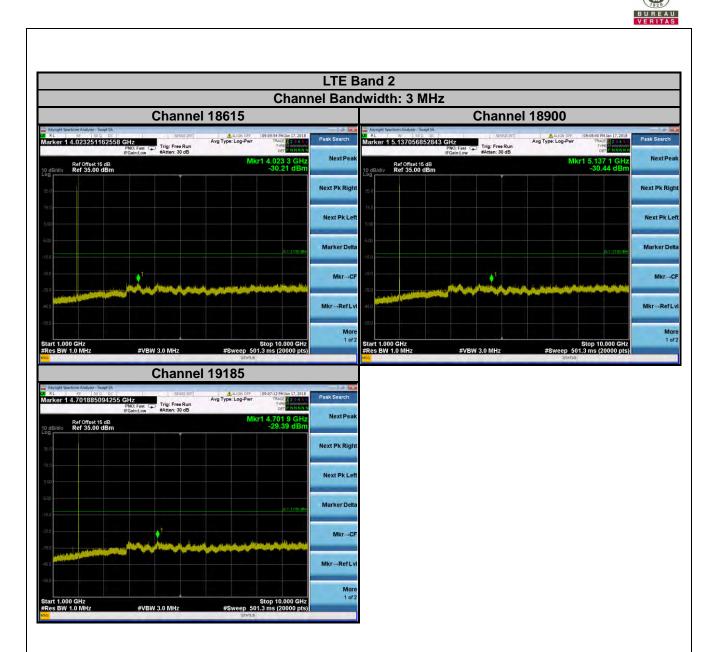


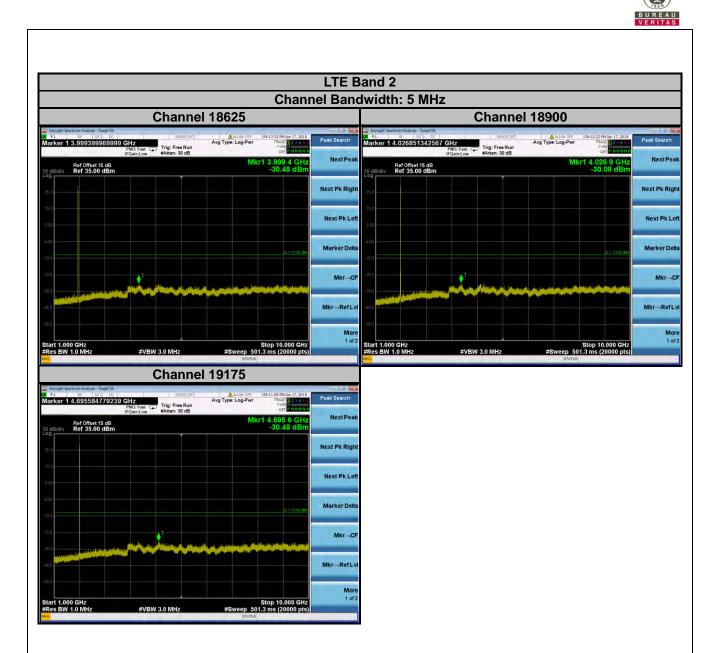


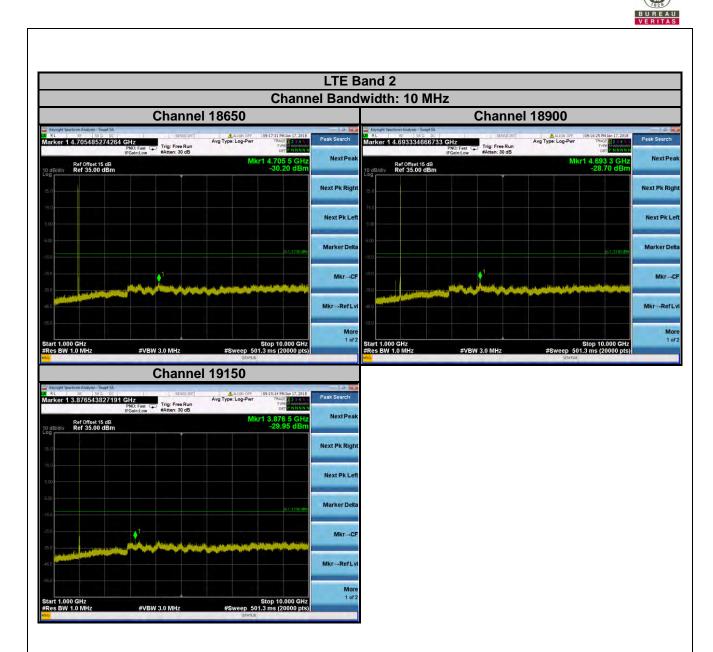


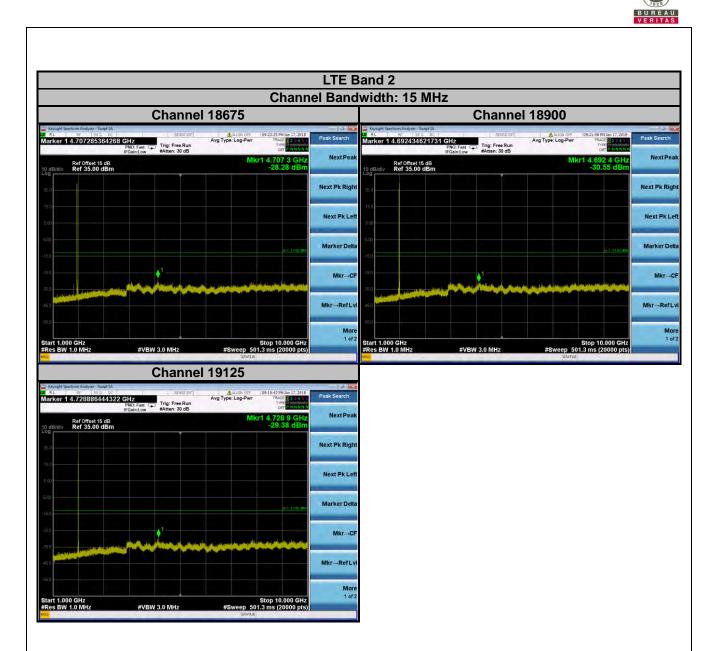
1GHz ~ 10GHz

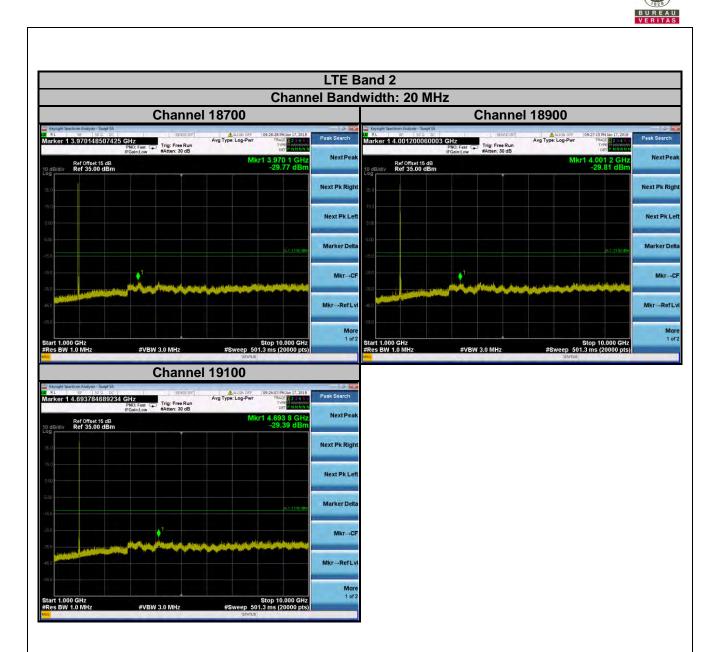






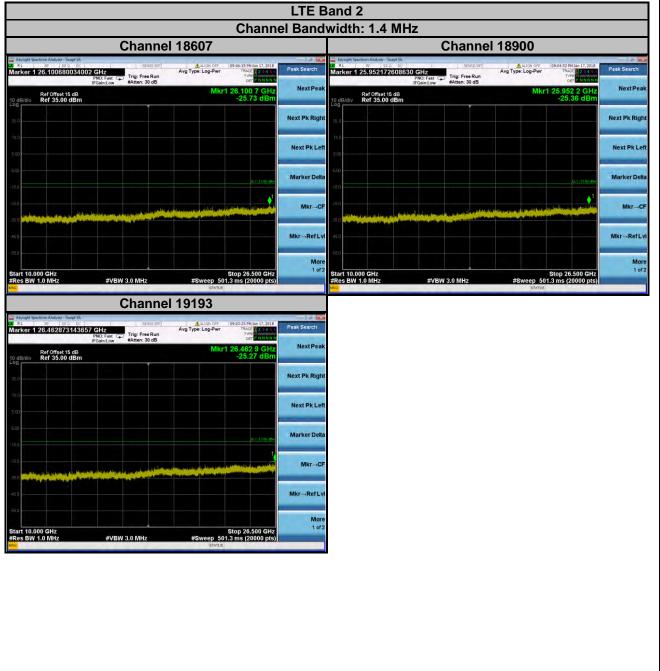






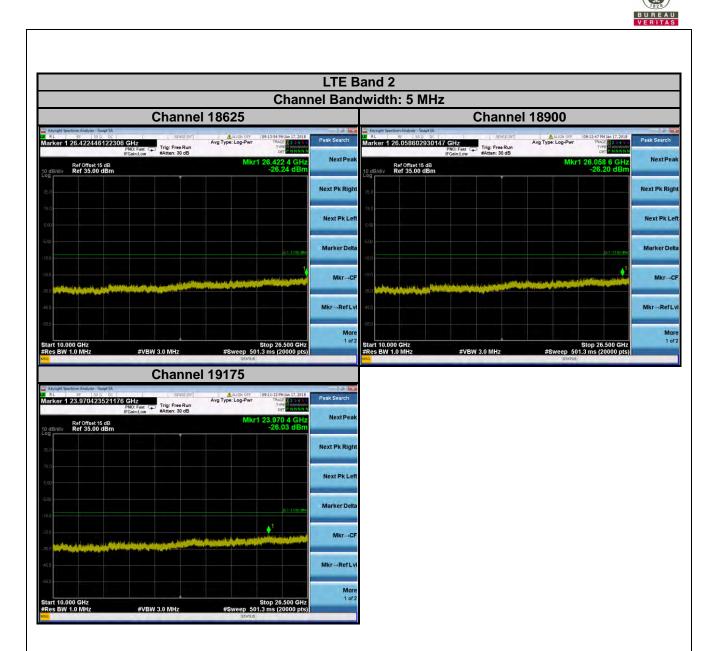


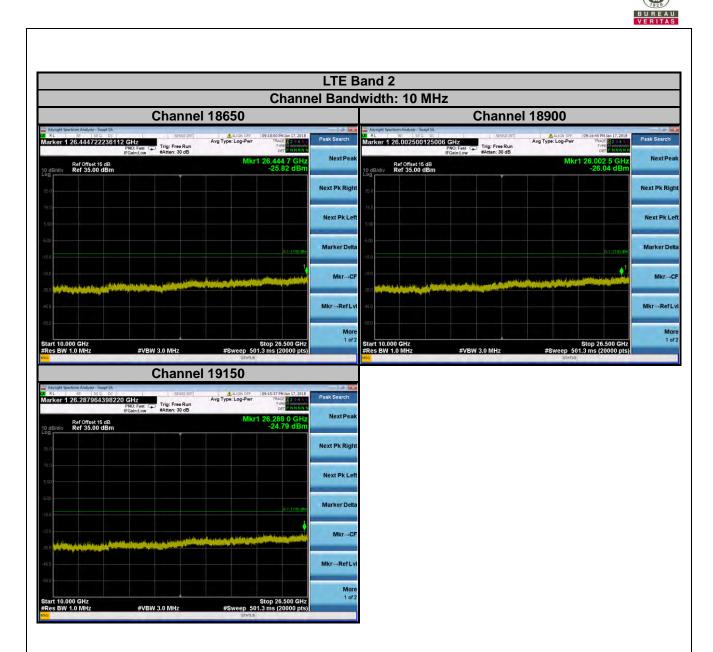
10GHz ~ 26.5GHz

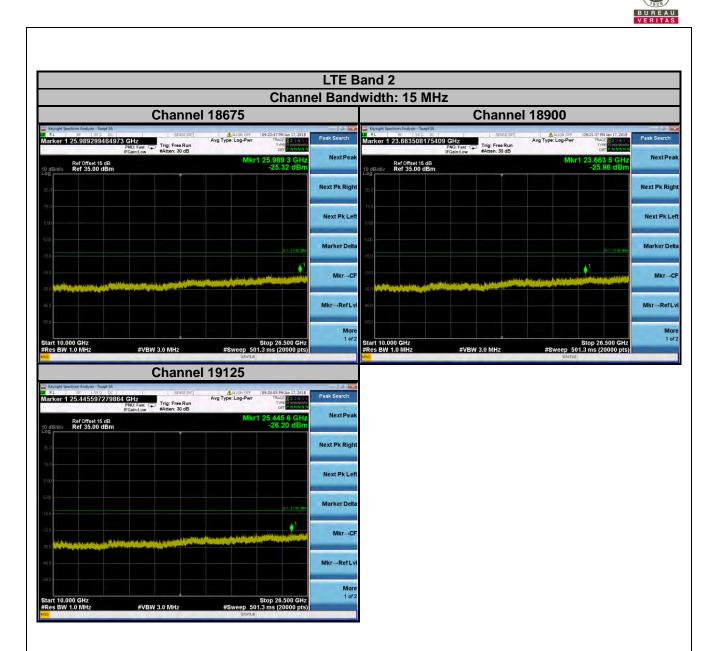


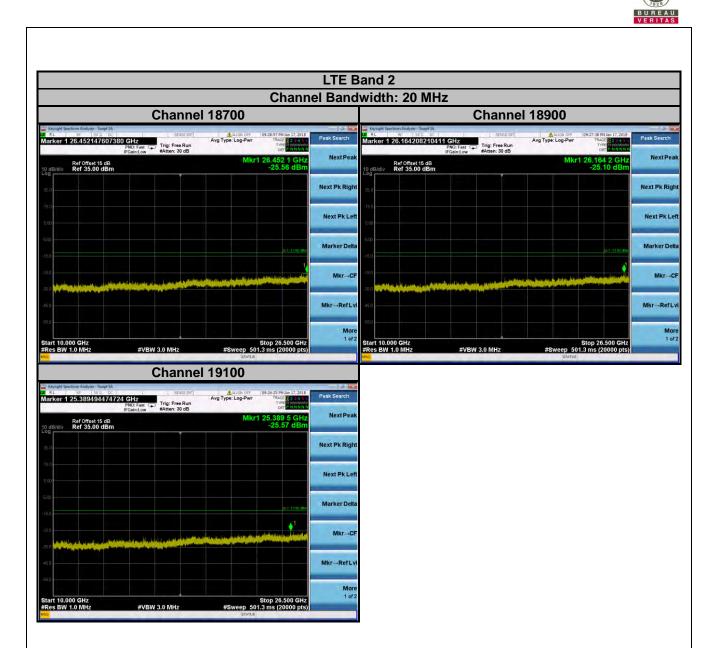
| | | LTE B | | | |
|--|---|----------------|---|--|---------------|
| Channe | | nnel Band | lwidth: 3 MHz Channe | 149000 | |
| eysight Spectrum Analyzer - Swept SA | | | Keysight Spectnum Analyzer - Swept SA | | |
| RL RF S40 DC SENSE:INT rker 1 25.272338616931 GHz PNO: Fast IFGainLow #Atten: 30 dB | ALIGN OFF 09:10:18 PM Jan 17, 201 Avg Type: Log-Pwr TRACE 1 - 4 Type Det in the statement | | RL RF S9.0_DC SENSE:UTI Marker 1 26,259087954398 GHz Trig: Free Run IFGain2.ow Trig: Free Run #Atten: 30 dB | TYPE DET PNNNNN | Search |
| Ref Offset 15 dB B/dlv Ref 35.00 dBm | Mkr1 25.272 3 GH -25.76 dBr | z NextPeak | Ref Offset 15 dB | Mkr1 26.259 1 GHz -26.21 dBm | lext Pe |
| | | Next Pk Right | 250 | Next | Pk Rig |
| | | Next Pk Left | 5.00 | Nex | kt Pk L |
| | p. 1 - 12 80 db | Marker Delta | 500 | St H200der | ker De |
| | | Mkr→CF | | | Mkr |
| | | Mkr→RefLvi | | Mkr- | Ref |
| t 10.000 GHz | Etan 26 500 CH | More 1 of 2 | 25.0 Start 10.000 GHz | Stop 26 500 CM | M 1 |
| s BW 1.0 MHz #VBW 3.0 MHz | Stop 26.500 GH #Sweep 501.3 ms (20000 pts status | s) | #Res BW 1.0 MHz #VBW 3.0 MHz | Stop 26,500 GHz #Sweep 501.3 ms (20000 pts) status | |
| Channe | l 19185 | | | | |
| аусуда Таресткини Анајули - Sano Boo RC 580 Boo PNO: Fast PNO: Fast IFGaint.cov #Atten: 30 dB | Aug North 09:07:31 PM Jan 17, 201 Avg Type: Log-Pwr TRACE | B Peak Search | | | |
| IFGain:Low #Atten: 30 dB Ref Offset 15 dB IB/div Ref 35.00 dBm | Mkr1 24.386 2 GH -25.77 dBr | Z NextPeak | | | |
| | | Next Pk Right | | | |
| | | Next Pk Left | | | |
| | | Marker Delta | | | |
| | ↓ ¹ | Mkr→CF | | | |
| | and the set of the second se | | | | |
| | | Mkr→RefLvi | | | |
| | | Mkr→RefLvi | | | |

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LTE Band 25

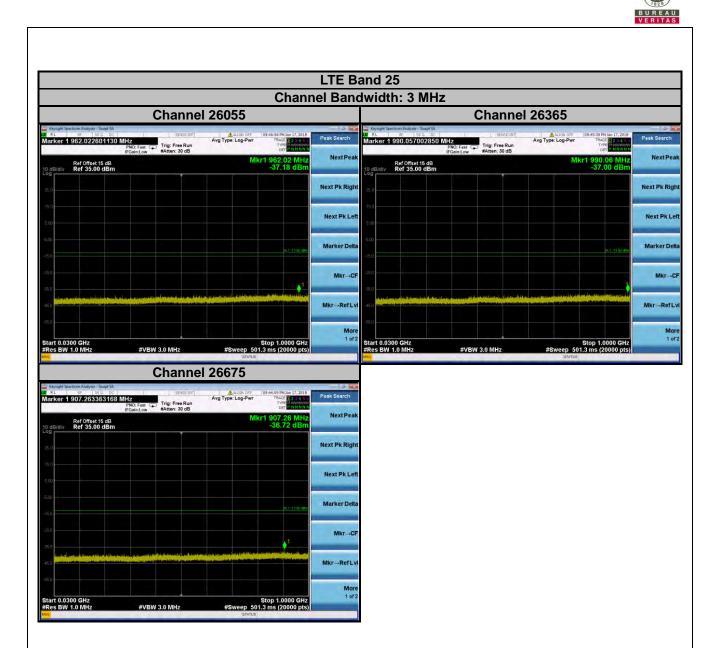
30MHz ~ 1GHz

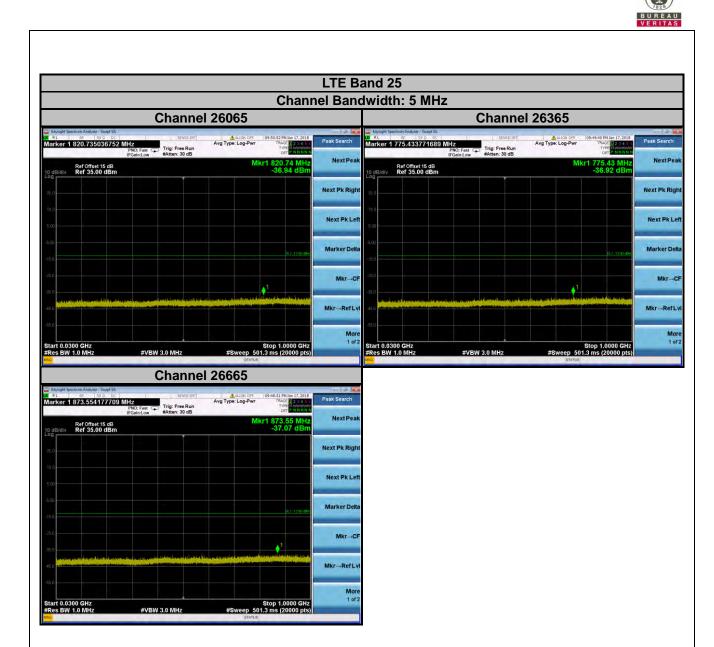


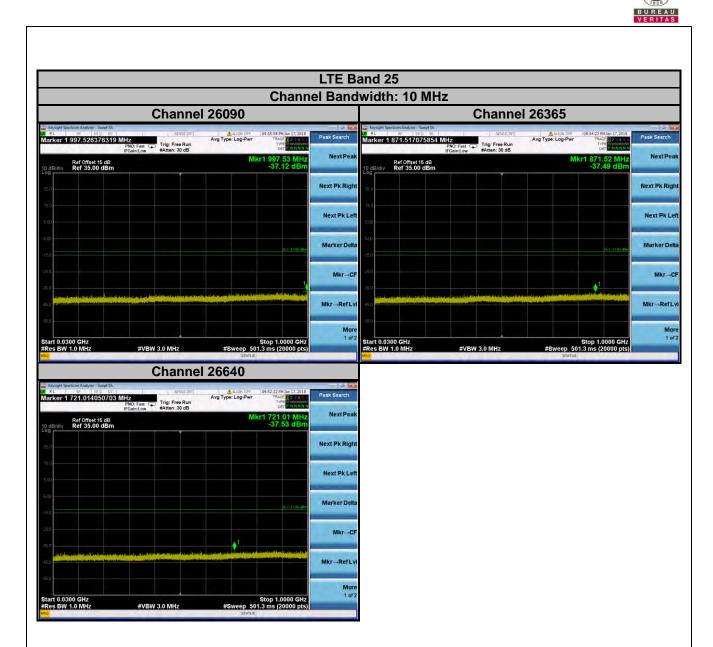
Stop 1.0000 GHz #Sweep 501.3 ms (20000 pts)

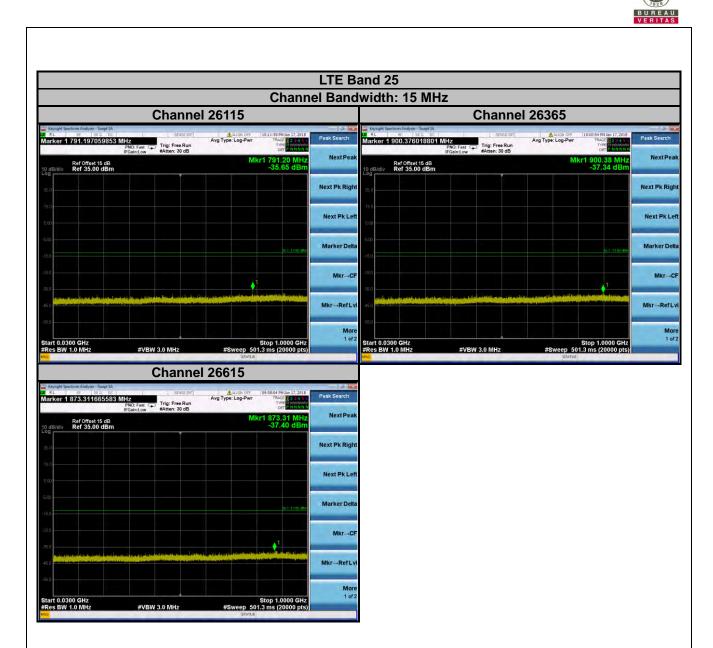
tart 0.0300 GHz Res BW 1.0 MHz

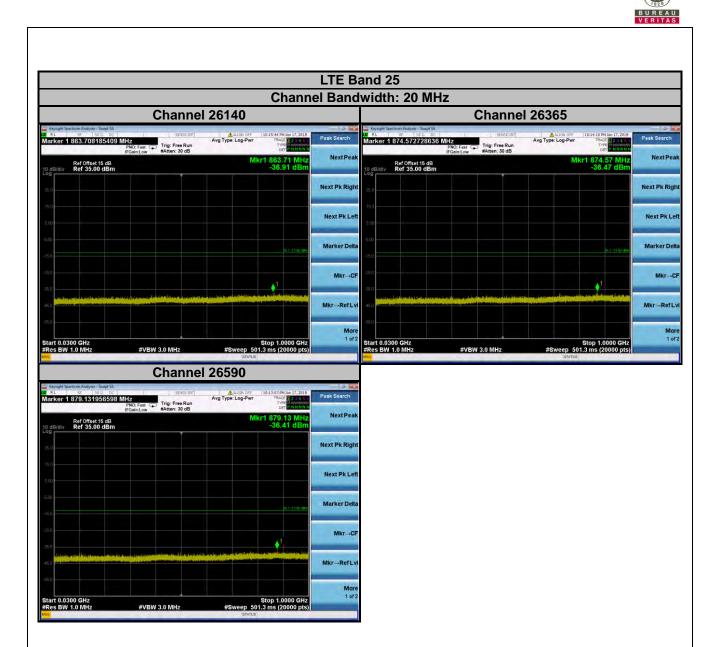
#VBW 3.0 MHz





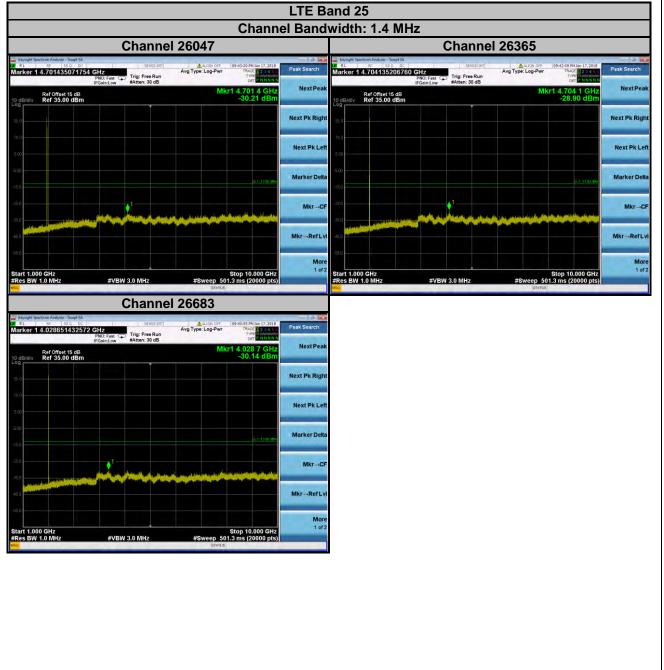


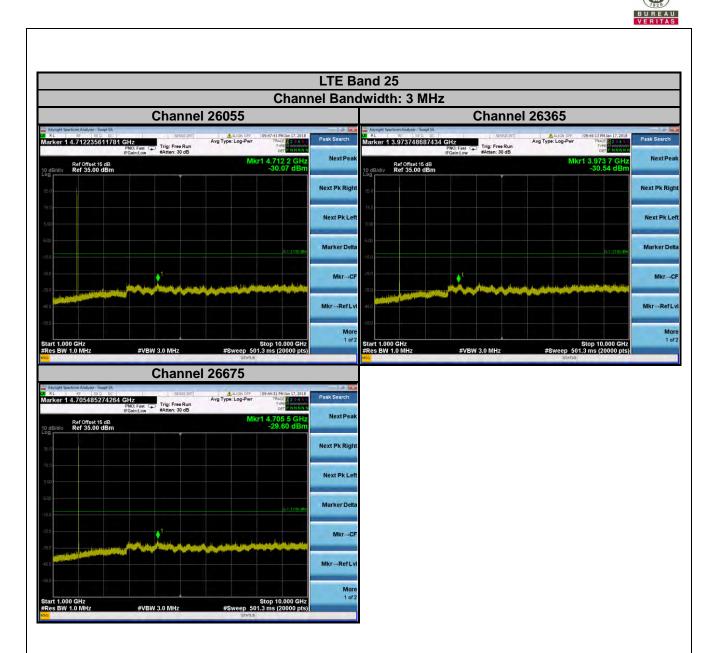


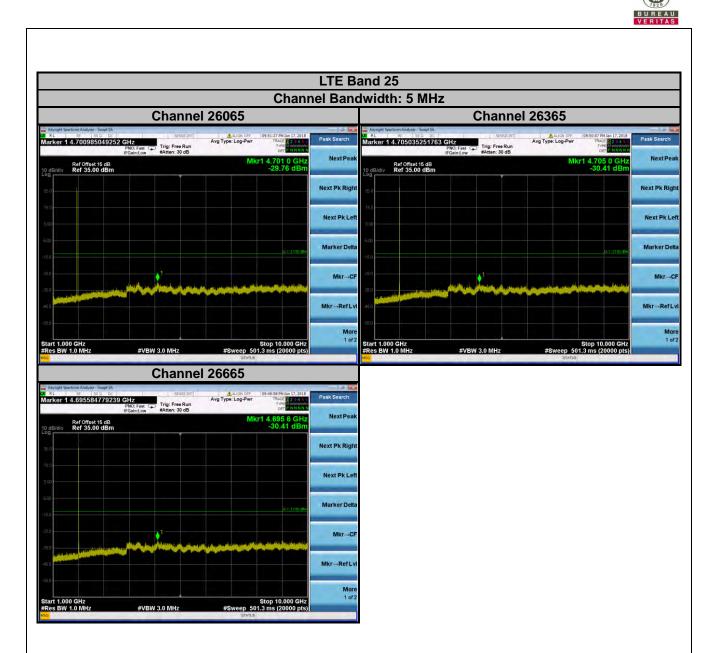


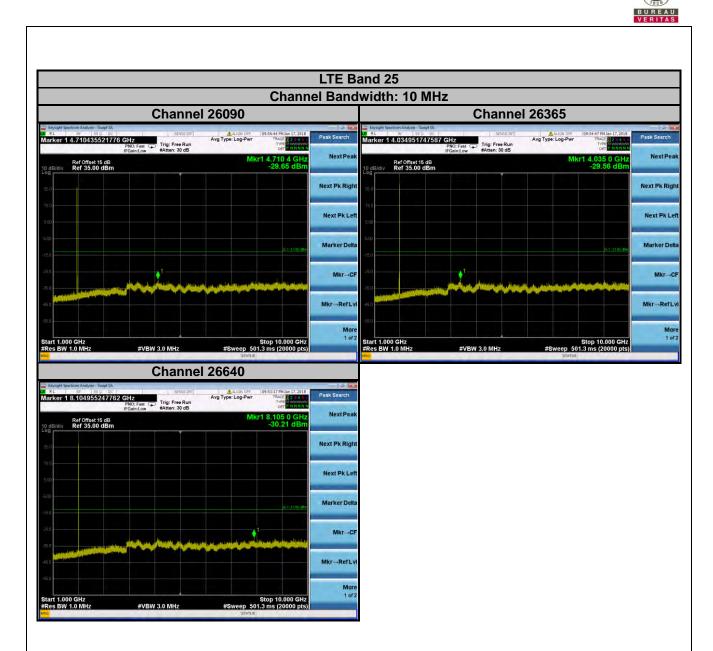


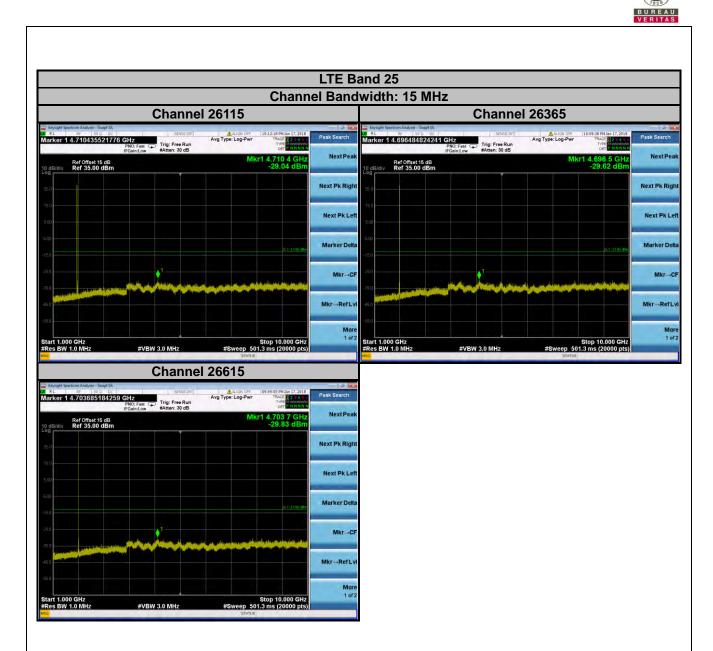
1GHz ~ 10GHz

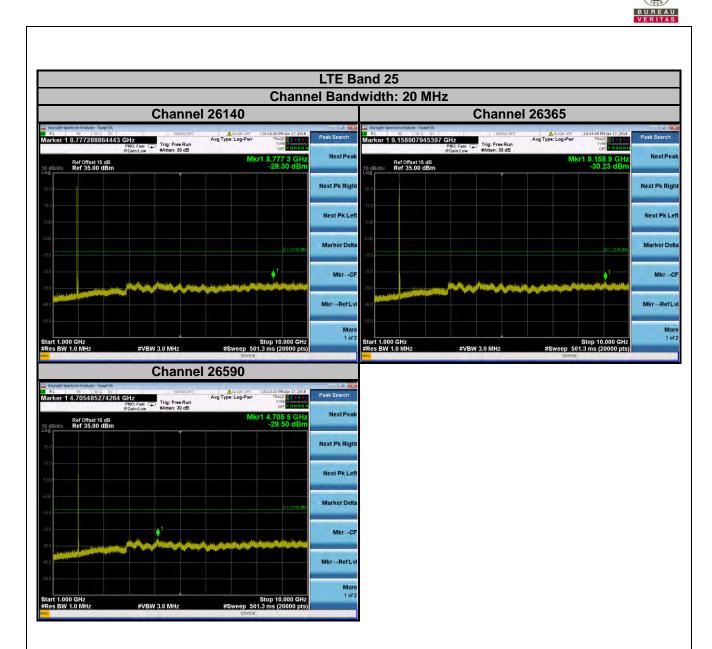






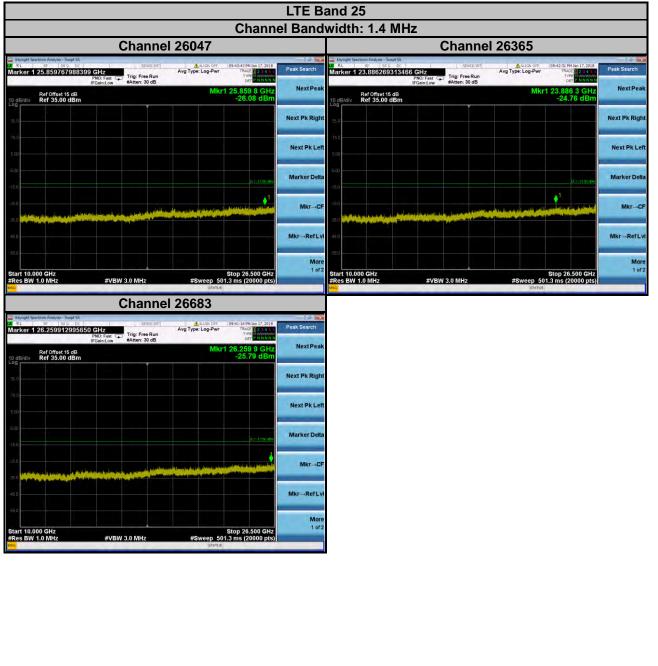


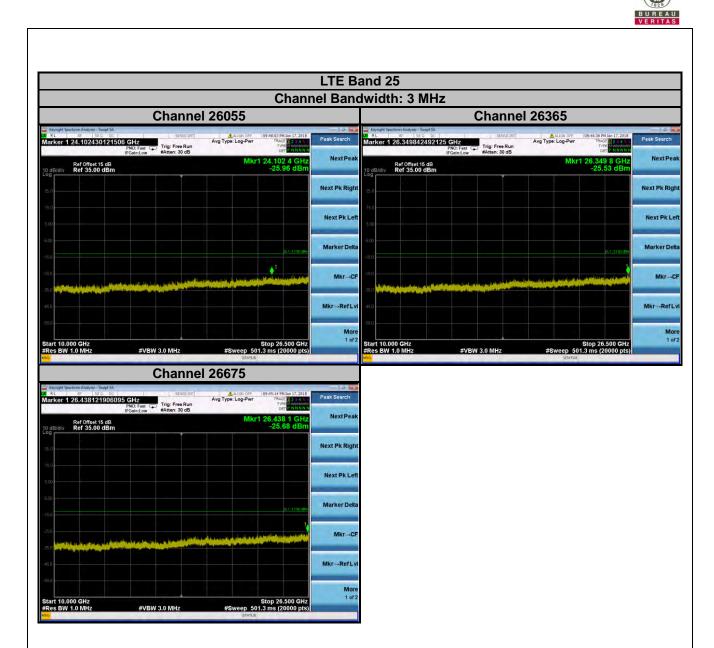


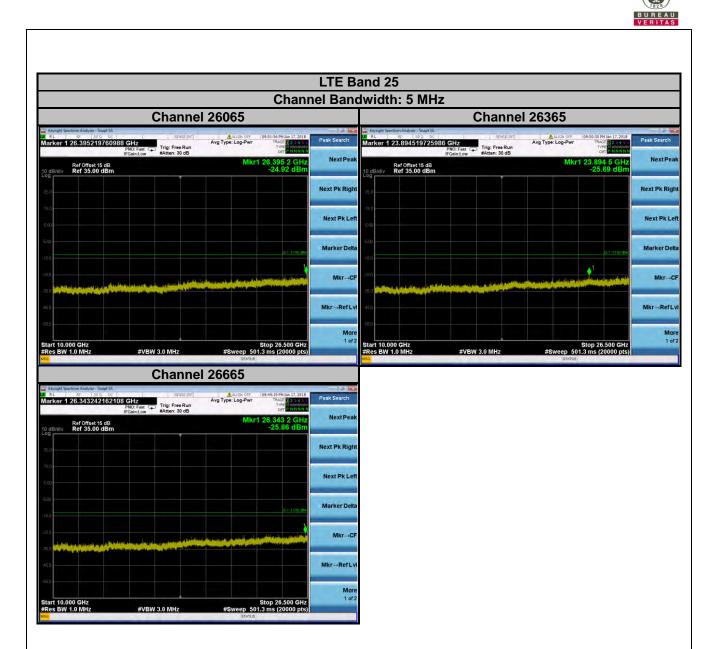


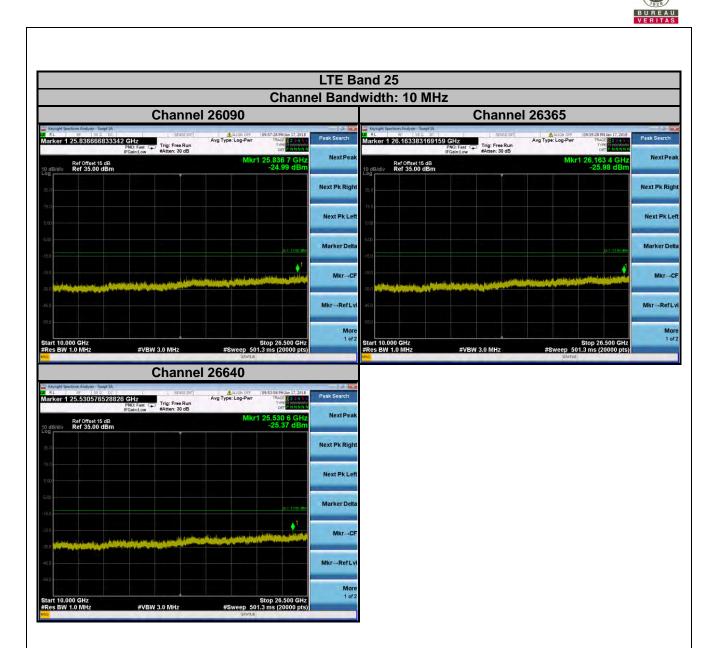


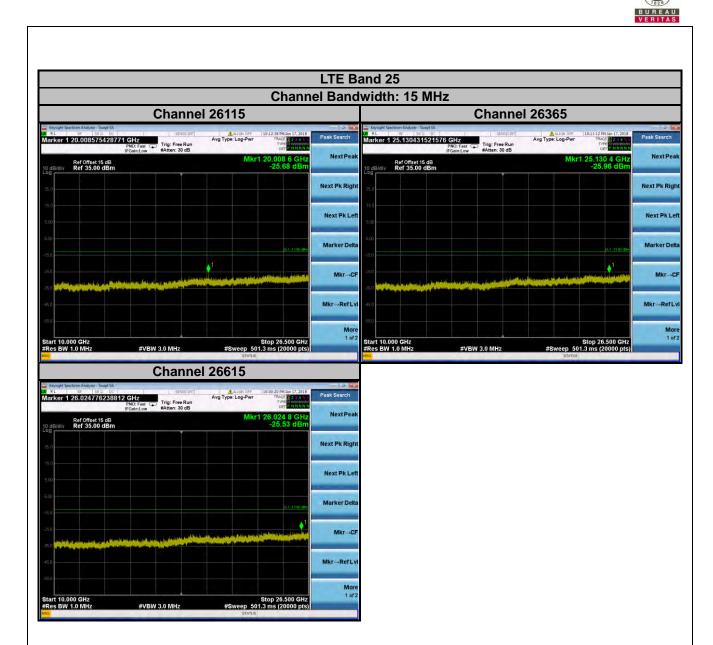
10GHz ~ 26.5GHz

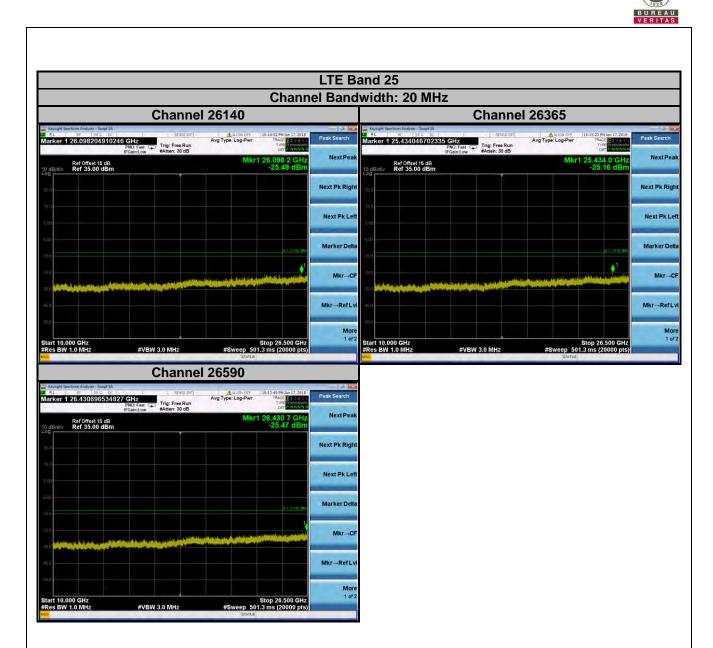














4.7 Radiated Emission Measurement

4.7.1 Limits of Radiated Emission Measurement

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 is equal to -13 dBm.

4.7.2 Test Procedure

- a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8 m (below or equal 1 GHz) and/or 1.5 m (above 1 GHz) height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1 m to 4 m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
- b. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to "Read Value" of step a. Record the power level of S.G.
- c. EIRP = Output power level of S.G TX cable loss + Antenna gain of substitution horn.
- d. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, E.R.P power = E.I.P.R power 2.15 dBi.

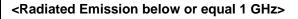
NOTE: The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 MHz/3 MHz.

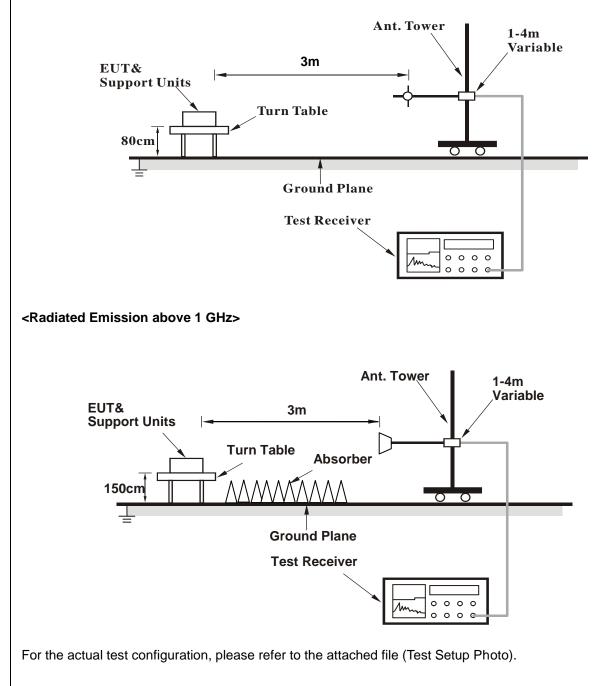
4.7.3 Deviation from Test Standard

No deviation.



4.7.4 Test Setup







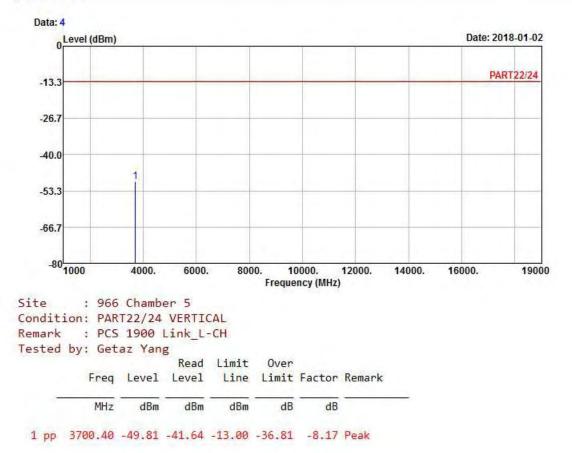
4.7.5 Test Results GSM: Low Channel





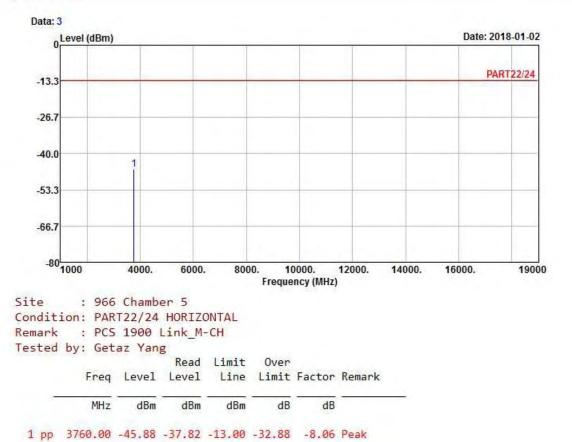


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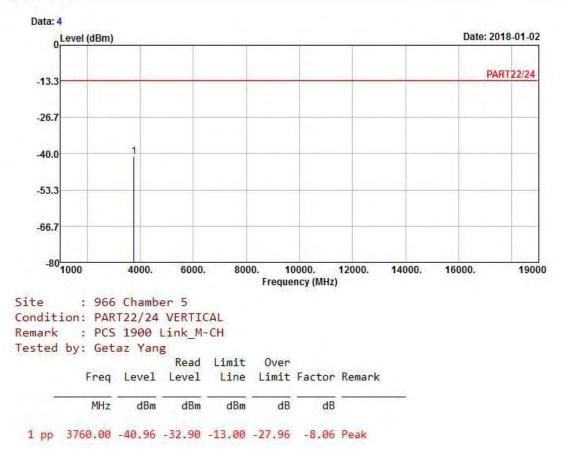








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High Channel

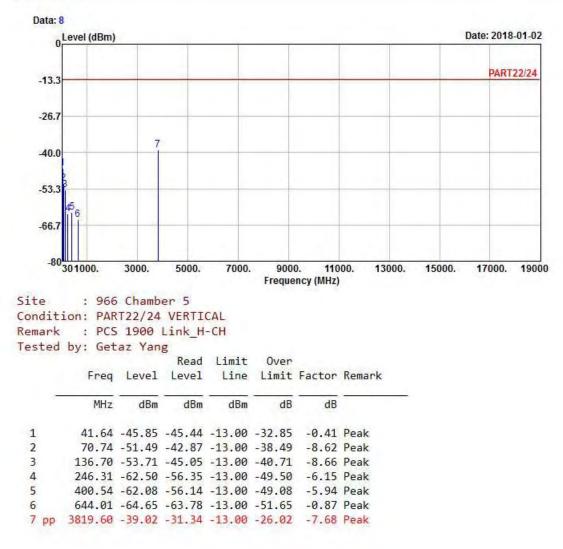






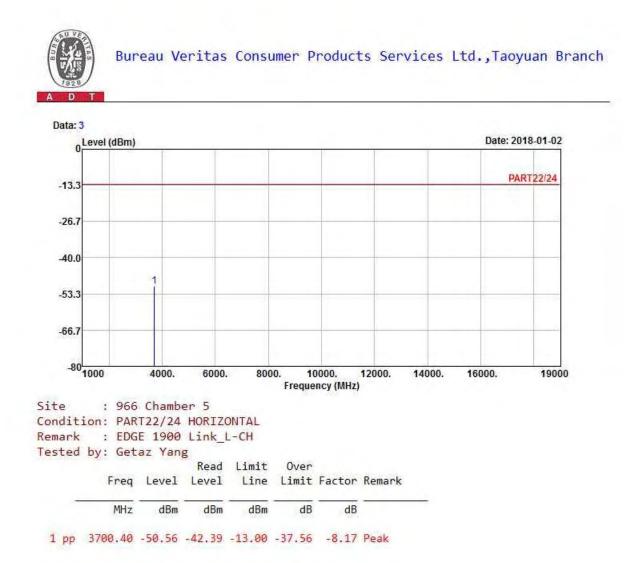


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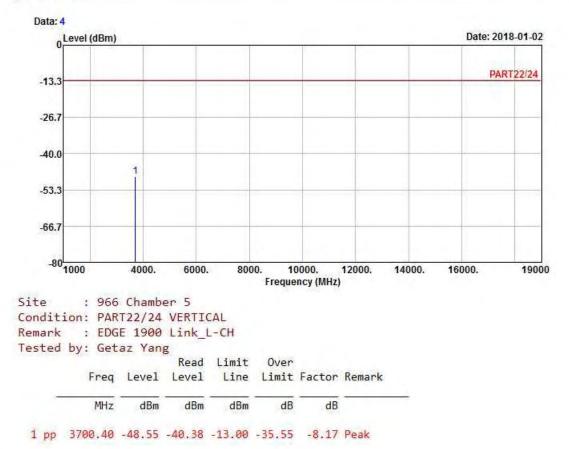
EDGE: Low Channel





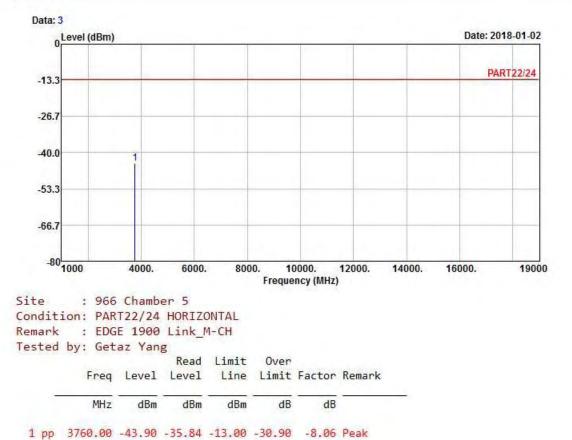


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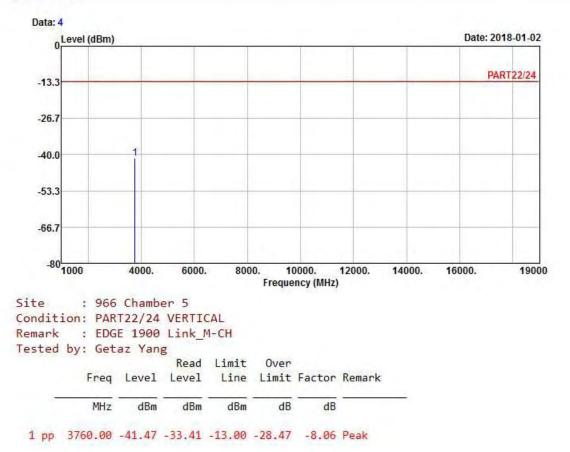








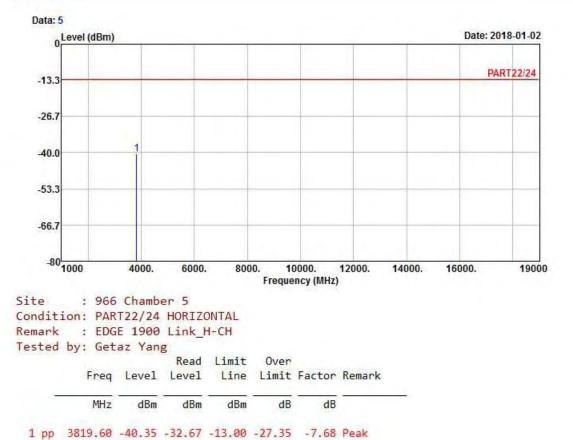
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High Channel

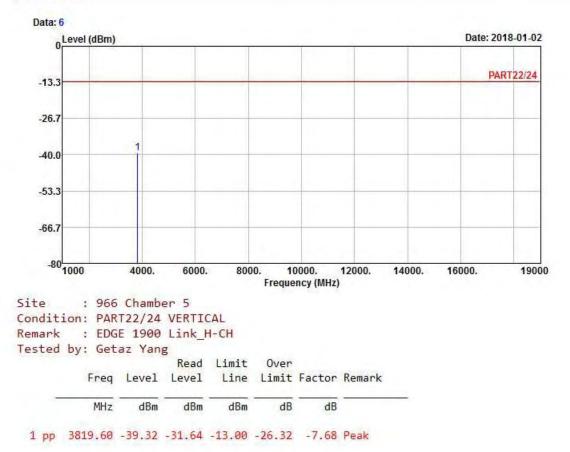








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WCDMA: Low Channel

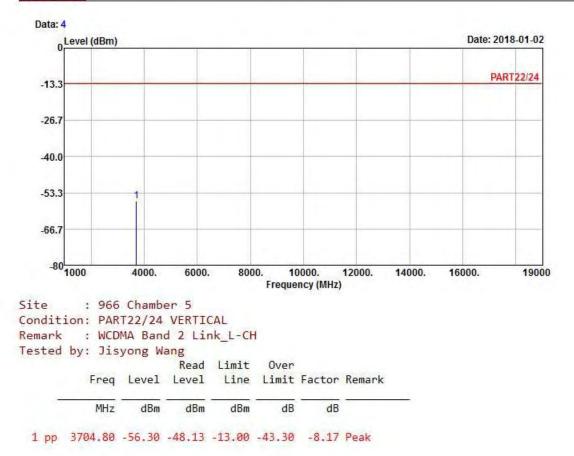


1 pp 3704.80 -53.44 -45.27 -13.00 -40.44 -8.17 Peak



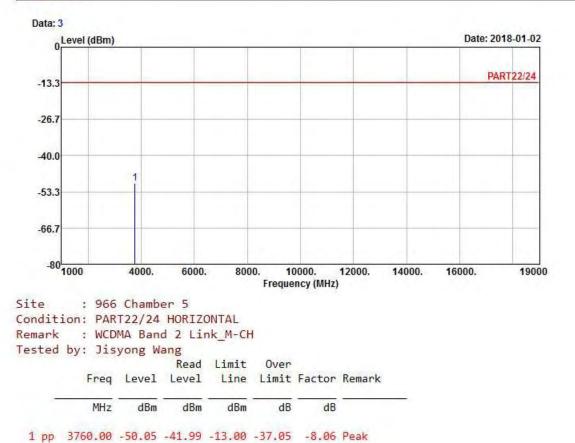


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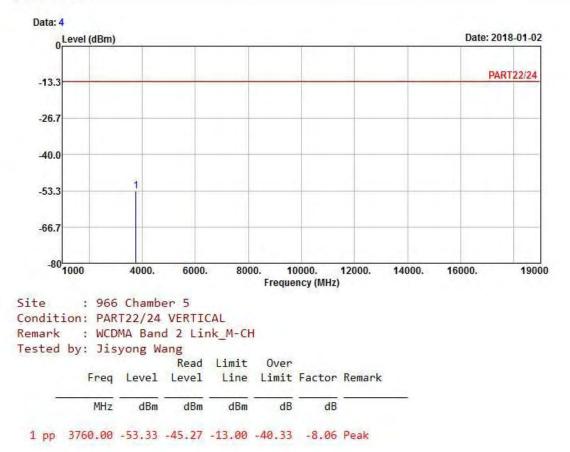






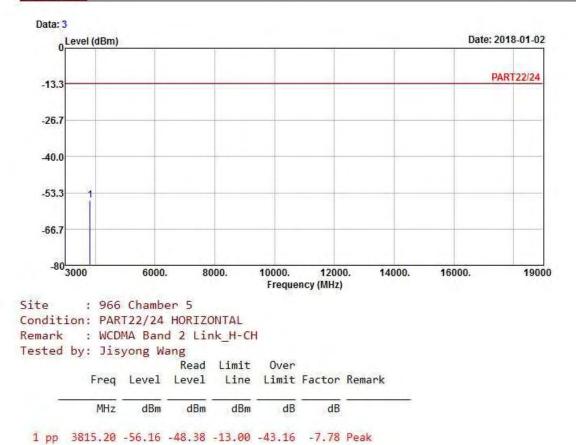


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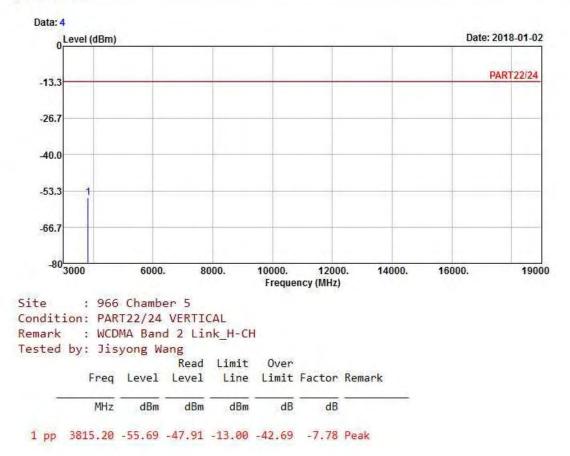
High Channel







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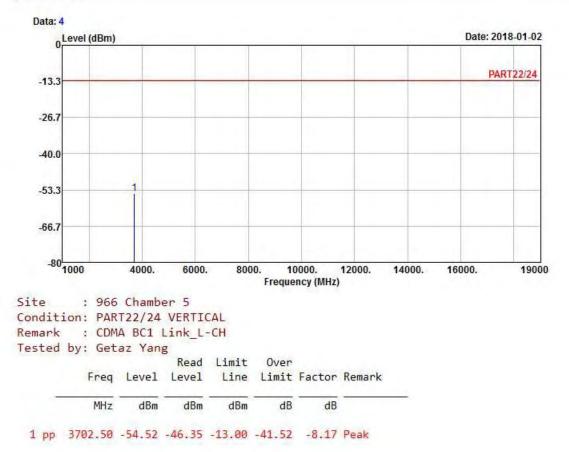
CDMA: Low Channel





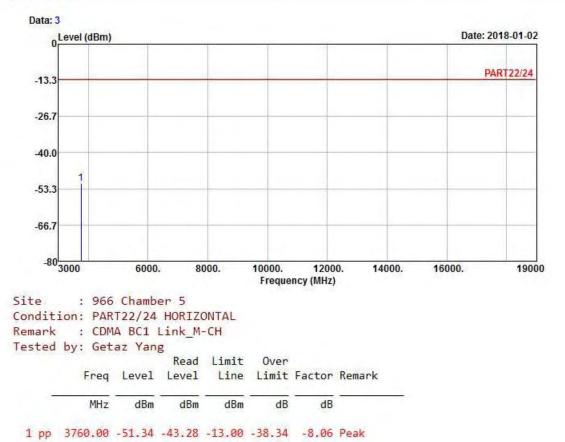


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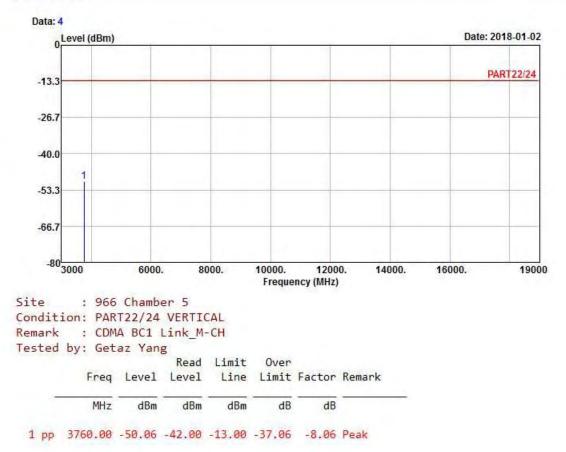








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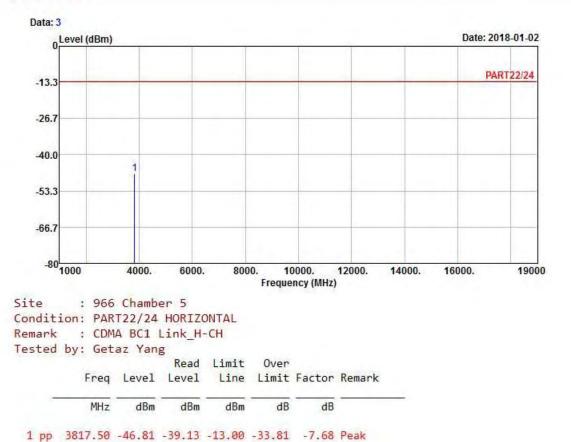




High Channel



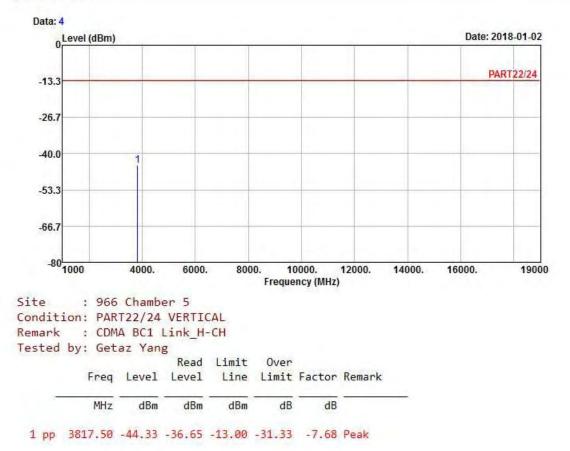
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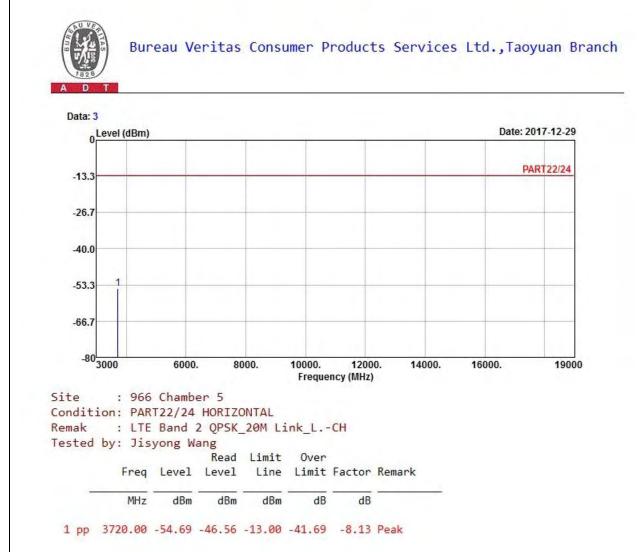


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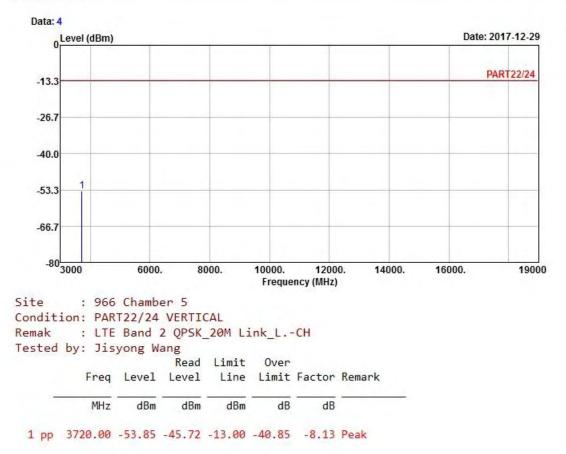
LTE Band 2 Channel Bandwidth: 20 MHz / QPSK Low Channel







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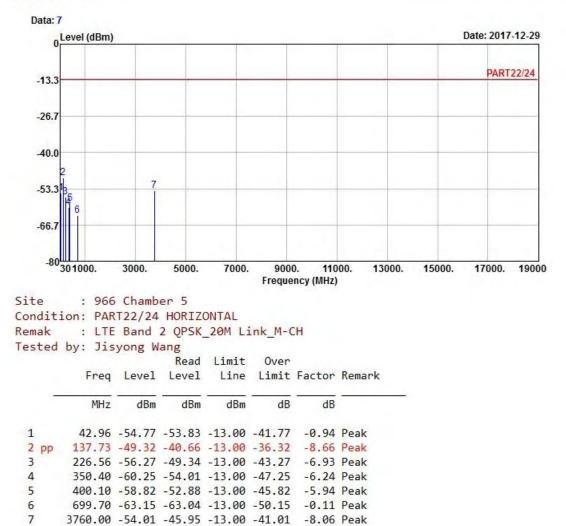




Middle Channel



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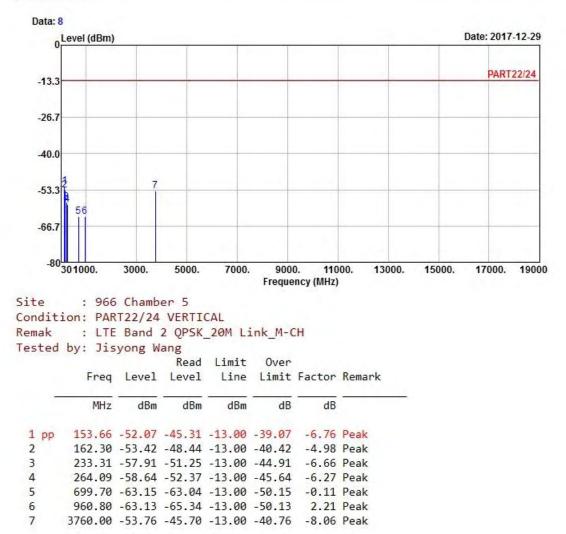


7





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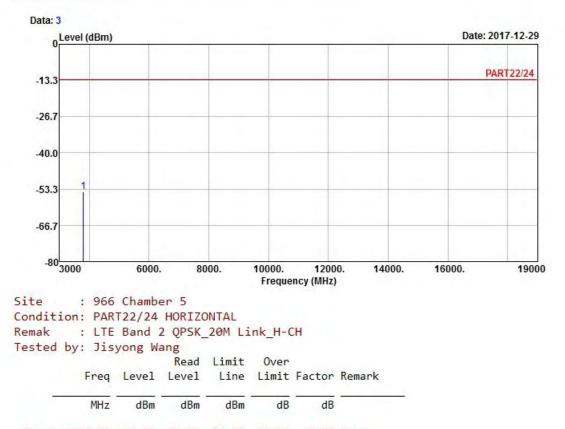




High Channel



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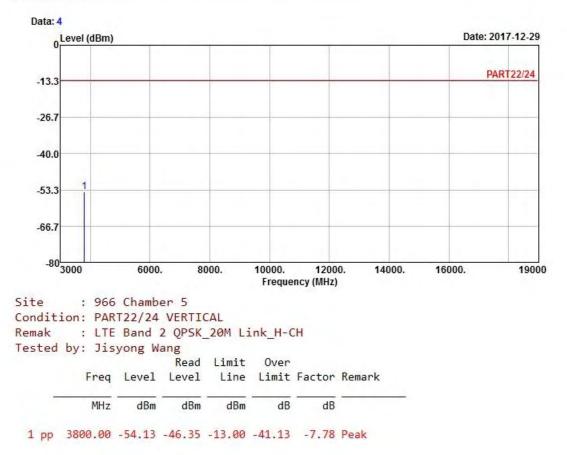


1 pp 3800.00 -54.17 -46.39 -13.00 -41.17 -7.78 Peak



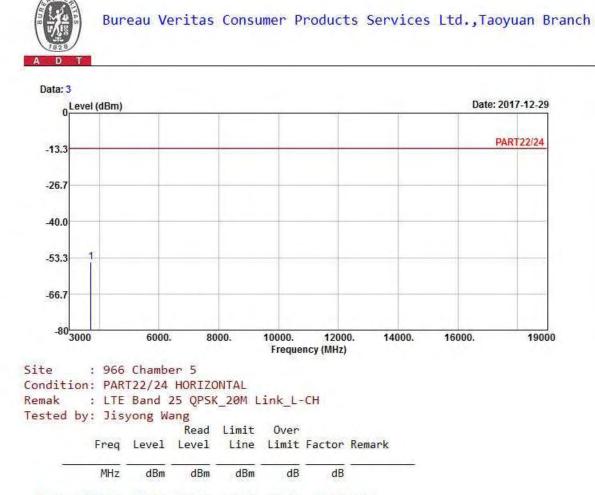


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LTE Band 25 Channel Bandwidth: 20 MHz / QPSK Low Channel

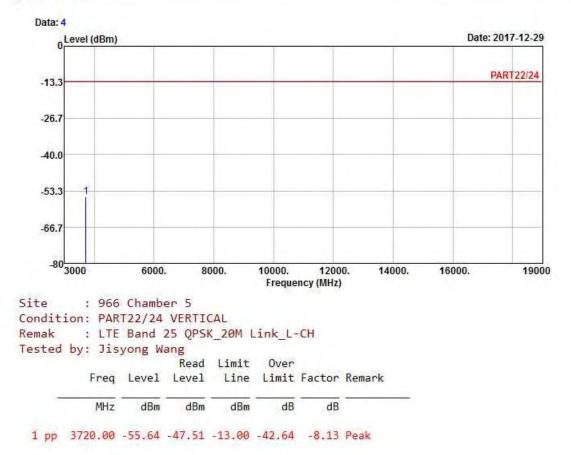


1 pp 3720.00 -55.03 -46.90 -13.00 -42.03 -8.13 Peak





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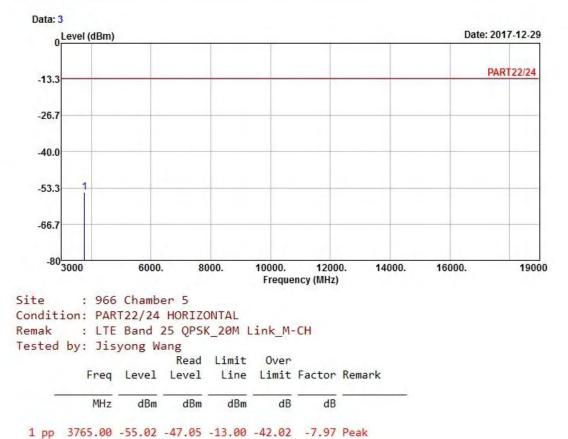




Middle Channel



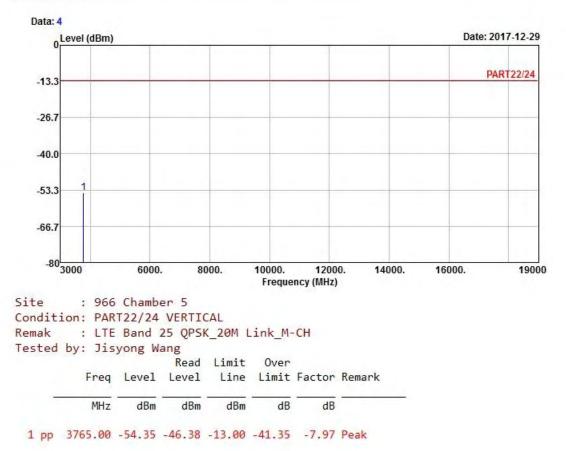
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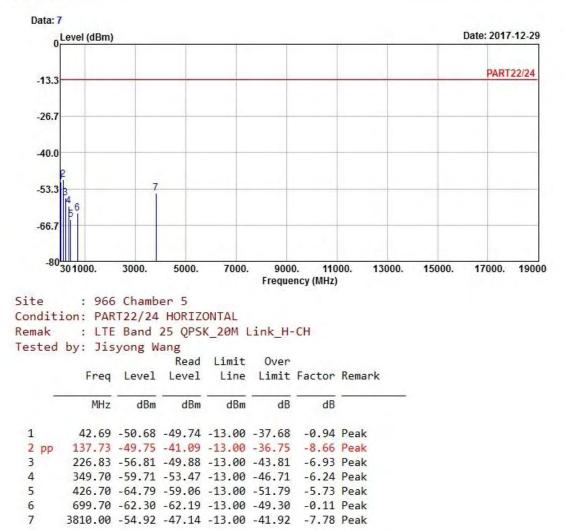




High Channel



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5 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo).



Appendix – Information on the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are FCC recognized accredited test firms and accredited according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

Linko EMC/RF Lab Tel: 886-2-26052180 Fax: 886-2-26051924 Hsin Chu EMC/RF/Telecom Lab Tel: 886-3-6668565 Fax: 886-3-6668323

Hwa Ya EMC/RF/Safety Tel: 886-3-3183232 Fax: 886-3-3270892

Email: <u>service.adt@tw.bureauveritas.com</u> Web Site: <u>www.bureauveritas-adt.com</u>

The address and road map of all our labs can be found in our web site also.

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