

Low Channel 30MHz Total Bandwidth Channel Edge

| RL RL | F | n Analyzer - Spurio VF 50 Ω Ne: LO | DC CORREC | 🛶 Trig: | sense:ext r Freq: 3.560000 Free Run n: 20 dB | | ALIGN AUTO | 08:03:30 Pf Radio Std: Radio Dev | | Frequency |
|------------------|---------|--|--|-----------|---|------------|------------|--|----------|-------------------------------------|
| 0 dB/ | div | Ref 30.00 | dBm | | | | | | | |
| 20.0 | | | | | - | / | | | | Center Fre 3.560000000 GH |
| 0.00 | | | | | | | | | | |
| 30.0 - 40.0 - | | | and the state of t | | | | | | | |
| 50.0 - 50.0 - | | | | | | | | | | |
| Start | 3.51 GI | Hz | | | | | | Stop | 3.61 GHz | CF Ste 10.000000 MH |
| Spur | Range | Start Freq | Stop Freq | RBW | Frequency | Ampl | itude | ∆ Limit | | <u>Auto</u> Ma |
| | 1 | 3.5100 GHz | 3.5300 GHz | 1.000 MHz | 3.527800000 | GHz -44.17 | dBm | -4.168 dB | | |
| 2 | 2 | 3.5300 GHz | 3.5400 GHz | 1.000 MHz | 3.539816667 | GHz -41.55 | dBm | -16.55 dB | | Ener Offe |
| | 3 | 3.5400 GHz | | | 3.548835000 (| | | -23.76 dB | | Freq Offs |
| | 4 | 3.5490 GHz | | | 3.549980000 | | | -27.77 dB | | 0 H |
| | 5 | 3.5500 GHz | | | 3.558600000 | | | -13.16 dB | | |
| | 6 | 3.5800 GHz | | | 3.580003333 | | | -4.440 dB | | |
| 7 | 7 | 3.5810 GHz | | | 3.581705000 (| | | -21.25 dB | | |
| 3 | 8 | 3.5900 GHz | | | 3.5906666667 | | | -10.34 dB | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

Plot 7-160. Low Channel Edge Plot (30MHz Total Bandwidth QPSK)

| ASS | | n Analyzer - Spur RF 50 Ω te: LO | DC C | ns ORREC FGain:L | → ow | | | 0000 GHz | ALIGN AUTO | 08:20:30 P Radio Std Radio Dev | | Frequency |
|-----------------------|---|---|---|--|--|---|---|---|---|--|--|---|
| 0 dB/ -∘g Г | 'div | Ref 30.00 |) dBm | | | | | | | | | |
| 20.0 — 10.0 — | | | | | N | Yryd Mary Mary | | Jaller Marthan | | | | Center Fre 3.560000000 GH |
| 10.00 | | | | | | | | | | | | |
| 30.0 40.0 | | | | - | | | | | | , and the state of | | |
| 50.0 | | | | | | | | | | | | |
| 60.0 | | | | | | | | | | | | |
| L | 3.51 G | Hz | | | | | | | | Stop | 3.61 GHz | 10.000000 MH |
| start Spur | | Start Freq | | Freq | RBV | | requency | | litude | ∆ Limit | | CF Ste 10.000000 MH <u>Auto</u> Ma |
| Start Spur | Range | Start Freq | z 3.530 | 0 GHz | 1.000 | 0 MHz 3.5 | 519533333 | GHz -44.2 | 4 dBm | ∆ Limit -4.236 dE | 3 | 10.000000 MH |
| start Spur | Range | Start Freq 3.5100 GHz 3.5300 GHz | z 3.530 z 3.540 |)0 GHz)0 GHz | 1.000 |) MHz 3.5) MHz 3.5 | 519533333 (539850000 (| GHz -44.2 GHz -41.8 | 4 dBm 0 dBm | ∆ Limit -4.236 dE -16.80 dE | <u>}</u> | 10.000000 MH <u>Auto</u> Ma |
| start Spur | Range 1 2 3 | Start Freq 3.5100 GHz 3.5300 GHz 3.5400 GHz | z 3.530 z 3.540 z 3.549 | 00 GHz 00 GHz 00 GHz | 1.000 1.000 1.000 | 0 MHz 3.5 0 MHz 3.5 0 MHz 3.5 | 519533333 539850000 548955000 | GHz -44.2 GHz -41.8 GHz -37.5 | 4 dBm 0 dBm 5 dBm | Δ Limit -4.236 dE -16.80 dE -24.55 dE | } } } | 10.000000 MH <u>Auto</u> Ma Freq Offs |
| spur | Range 1 2 3 4 | Start Freq 3.5100 GHz 3.5300 GHz 3.5400 GHz 3.5490 GHz | z 3.530 z 3.540 z 3.549 z 3.550 | 00 GHz 00 GHz 00 GHz 00 GHz 00 GHz | 1.000 1.000 1.000 200.0 | O MHz 3.5 O KHz 3.5 | 519533333 (539850000 (548955000 (549978333 (| GHz -44.2 GHz -41.8 GHz -37.5 GHz -41.6 | 4 dBm 0 dBm 5 dBm 9 dBm | Δ Limit -4.236 dE -16.80 dE -24.55 dE -28.69 dE | 3 3 3 3 | 10.000000 Mł <u>Auto</u> Mł Freq Offs |
| start Spur | Range 1 2 3 4 5 | Start Freq 3.5100 GHz 3.5300 GHz 3.5400 GHz 3.5490 GHz 3.5500 GHz | z 3.530 z 3.540 z 3.549 z 3.550 z 3.580 | 00 GHz 00 GHz 00 GHz 00 GHz 00 GHz | 1.000 1.000 200.0 200.0 | O MHz 3.5 O MHz 3.5 O MHz 3.5 O MHz 3.5 O KHz 3.5 O KHz 3.5 | 519533333 539850000 548955000 549978333 568050000 | GHz -44.2 GHz -41.8 GHz -37.5 GHz -41.6 GHz 13.99 | 4 dBm D dBm 5 dBm 9 dBm 0 dBm | Δ Limit -4.236 dE -16.80 dE -24.55 dE -28.69 dE -11.01 dE | 3 3 3 3 3 | 10.000000 Mł <u>Auto</u> Mł Freq Offs |
| tart | Range 1 2 3 4 5 6 | Start Freq 3.5100 GHz 3.5300 GHz 3.5400 GHz 3.5490 GHz 3.5500 GHz 3.5800 GHz | z 3.530 z 3.540 z 3.549 z 3.550 z 3.580 z 3.581 | 0 GHz 0 GHz 0 GHz 0 GHz 0 GHz 0 GHz 0 GHz | 1.000 1.000 200.0 200.0 200.0 | MHz 3.5 MHz 3.5 MHz 3.5 MHz 3.5 KHz 3.5 KHz 3.5 KHz 3.5 KHz 3.5 KHz 3.5 | 519533333 (539850000 (548955000 (549978333 (568050000 (580013333 (| GHz -44.2 GHz -41.8 GHz -37.5 GHz -41.6 GHz 13.99 GHz -17.8 | 4 dBm 0 dBm 5 dBm 9 dBm 0 dBm 9 dBm | Δ Limit -4.236 dE -16.80 dE -24.55 dE -28.69 dE -11.01 dE -4.890 dE | 3 3 3 3 3 3 3 3 | 10.000000 MH <u>Auto</u> Ma |
| Spur | Range 1 2 3 4 5 6 7 | Start Freq 3.5100 GHz 3.5300 GHz 3.5400 GHz 3.5490 GHz 3.5500 GHz 3.5800 GHz 3.5810 GHz | z 3.530 z 3.540 z 3.549 z 3.550 z 3.580 z 3.581 z 3.590 | 00 GHz 00 GHz 00 GHz 00 GHz 00 GHz 10 GHz 00 GHz | 1.000 1.000 200.0 200.0 200.0 1.000 | O MHz 3.5 O KHz 3.5 | 519533333 (539850000 (548955000 (549978333 (568050000 (580013333 (581075000 (| GHz -44.2 GHz -41.8 GHz -37.5 GHz -41.6 GHz 13.99 GHz -17.8 GHz -34.9 | 4 dBm 0 dBm 5 dBm 9 dBm 9 dBm 9 dBm 3 dBm | Δ Limit -4.236 dE -16.80 dE -24.55 dE -28.69 dE -11.01 dE -4.890 dE -21.93 dE | 3 3 3 3 3 3 3 3 3 3 3 3 | 10.000000 Mł <u>Auto</u> Mł Freq Offs |
| spur | Range 1 2 3 4 5 6 | Start Freq 3.5100 GHz 3.5300 GHz 3.5400 GHz 3.5490 GHz 3.5500 GHz 3.5800 GHz | z 3.530 z 3.540 z 3.549 z 3.550 z 3.580 z 3.581 z 3.590 | 0 GHz 0 GHz 0 GHz 0 GHz 0 GHz 0 GHz 0 GHz | 1.000 1.000 200.0 200.0 200.0 1.000 | O MHz 3.5 O KHz 3.5 | 519533333 (539850000 (548955000 (549978333 (568050000 (580013333 (| GHz -44.2 GHz -41.8 GHz -37.5 GHz -41.6 GHz 13.99 GHz -17.8 GHz -34.9 | 4 dBm 0 dBm 5 dBm 9 dBm 9 dBm 9 dBm 3 dBm | Δ Limit -4.236 dE -16.80 dE -24.55 dE -28.69 dE -11.01 dE -4.890 dE | 3 3 3 3 3 3 3 3 3 3 3 3 | 10.000000 Mł <u>Auto</u> Mł Freq Offs |

Plot 7-161. Low Channel Edge Plot (30MHz Total Bandwidth 16QAM)

| FCC ID: A3LMT6402-48A | | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Quality Manager |
|----------------------------------|--------------------|---------------------------------------|---------|---------------------------------|
| Test Report S/N: | Test Dates: | EUT Type: | | Dega 144 of 170 |
| 1M1907220128-01. | 7/1/2019-7/29/2019 | Massive MIMO CBSD | | Page 144 of 172 |
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| RL AS | Cat | F 50 | Ω D(| | REC | | Trig: I | r Fre Free | | 0000 | | ALIGN AUT | 08:23:37 Radio St | td: No | ne | Fr | equency |
|-----------------------|--------|----------|----------|--------|----------|------|-------------------|---------------|----------------------|----------|--------|-----------|----------------------|--------|-------|-------------|-----------|
| AS | | | | IFG | Gain:Low | | #Atter | n: 20 | dB | | | | Radio D | evice: | BTS | - | |
| | | B-6.00 | <u>.</u> | | | | | | | | | | | | | | |
| 0 dB. .og [| div | Ref 30. | | əm | | | | | | | | | | | | | |
| 20.0 | | | | | | | | | | | | | | | | C | enter Fre |
| 10.0 | | | | | | ľ | ر بنی به رو رو | - | nini da anti-sua dia | ALC: NO | | | | | | 3.560 | 000000 GH |
| D.00 | | | | | | [| | | | | | | | | | | |
| 10.0 | | | | | | | | _ | | <u> </u> | | | | | | | |
| 20.0 | | | | | | | | | | | | | | | | | |
| 30.0 L | | | | | | | | | | | | | | | | | |
| 40.0 L | | | | | | | | ł | | | | - | - | | | | |
| 50 0 L | | ***** | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| 50.0 | | | | | | | | | | | | | | | | | |
| start | 3.51 G | lz | | | | | | | | | | | Sto | p 3.6 | 1 GHz | | CF Ste |
| | | | | | | | | | | | | | | | | | 000000 MH |
| Spur | Range | Start Fr | | Stop I | | RB\ | | | equency | | Ampli | | ∆ Limit | | | <u>Auto</u> | Ма |
| | 1 | 3.5100 G | | 3.5300 | | | | | 27700000 | | | | -4.026 (| | | | |
| | 2 | 3.5300 G | | 3.5400 | | | | | 39983333 | | | | -17.03 (| | | F | req Offs |
| | 3 | 3.5400 G | | 3.5490 | | | | | 47800000 | | | | -24.10 (| | | | 0 H |
| | 4 | 3.5490 G | | 3.5500 | | | | | 49978333 | | | | -28.61 0 | | | | |
| | 5 | 3.5500 G | | 3.5800 | | | | | 55450000 | | | | -12.53 (| | | | |
| | | 3.5800 G | | 3.5810 | | | | | 30000000 | | | | -3.011 c | | | | |
| | 7 | 3.5810 G | | 3.5900 | | | | | 31060000 | | | | -21.47 (| | | | |
| | 8 | 3.5900 G | iHz | 3.6100 | GHz | 1.00 | 0 MHz | 3.5 | 90566667 | GHz | -35.59 | dBm | -10.59 (| IΒ | | | |
| } | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |





Plot 7-163. Low Channel Edge Plot (30MHz Total Bandwidth 256QAM)

| FCC ID: A3LMT6402-48A | | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Quality Manager |
|--------------------------------------|--------------------|---------------------------------------|---------|---------------------------------|
| Test Report S/N: | Test Dates: | EUT Type: | | Dage 145 of 172 |
| 1M1907220128-01. | 7/1/2019-7/29/2019 | Massive MIMO CBSD | | Page 145 of 172 |
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Mid Channel 30MHz Total Bandwidth Channel Edge



Plot 7-164. Mid Channel Edge Plot (30MHz Total Bandwidth QPSK)

| PASS | F | n Analyzer - Spurio RF 50 Ω te: LO | DC CORREC | +++ Trig: | SENSE:EXT er Freq: 3.62500000 Free Run n: 26 dB | ALIGN AUTO | 07:10:10 PMJul 15, 2019 Radio Std: None Radio Device: BTS | Frequency |
|--------------------------------------|---|---|--|---|--|---|---|--|
| 10 dB/ -°9 Г | /div | Ref 30.00 | dBm | | | | | |
| 20.0 - 10.0 - | | | | many | | V/M | | Center Free 3.625000000 GH |
| 10.0 | | | | | | | | |
| 30.0 40.0 | an fraidhean an a | | entrated | | | | | |
| 50.0 - 60.0 - | | | | | | | | |
| | | | | | | | | |
| Start | 3.575 C | | | | | | Stop 3.675 GHz | 5.000000 MH |
| | Range | Start Freq | Stop Freq | RBW | Frequency | Amplitude | ∆ Limit | 5.000000 MH |
| Spur | Range | Start Freq 3.5750 GHz | 3.6000 GHz | 1.000 MHz | 3.595416667 GH | z -34.27 dBm | Δ Limit -9.270 dB | 5.000000 MH |
| Spur | Range | Start Freq 3.5750 GHz 3.6000 GHz | 3.6000 GHz 3.6090 GHz | 1.000 MHz | 3.595416667 GH 3.604395000 GH | z -34.27 dBm z -31.97 dBm | Δ Limit -9.270 dB -18.97 dB | 5.000000 MH <u>Auto</u> Ma |
| Spur | Range 1 2 3 | Start Freq 3.5750 GHz 3.6000 GHz 3.6090 GHz | 3.6000 GHz 3.6090 GHz 3.6100 GHz | 1.000 MHz 1.000 MHz 390.0 kHz | 3.595416667 GH 3.604395000 GH 3.610000000 GH | z -34.27 dBm z -31.97 dBm z -33.26 dBm | Δ Limit -9.270 dB -18.97 dB -20.26 dB | 5.000000 MH Auto Ma |
| Spur | Range 1 2 3 4 | Start Freq 3.5750 GHz 3.6000 GHz 3.6090 GHz 3.6100 GHz | 3.6000 GHz 3.6090 GHz 3.6100 GHz 3.6400 GHz | 1.000 MHz 1.000 MHz 390.0 kHz 390.0 kHz | 3.595416667 GH 3.604395000 GH 3.610000000 GH 3.624600000 GH | z -34.27 dBm z -31.97 dBm z -33.26 dBm z 16.75 dBm | Δ Limit -9.270 dB -18.97 dB -20.26 dB -8.247 dB | 5.000000 MH Auto Ma |
| Spur 2 3 4 | Range 1 2 3 4 5 | Start Freq 3.5750 GHz 3.6000 GHz 3.6090 GHz 3.6100 GHz 3.6400 GHz | 3.6000 GHz 3.6090 GHz 3.6100 GHz 3.6400 GHz 3.6410 GHz | 1.000 MHz 1.000 MHz 390.0 kHz 390.0 kHz 390.0 kHz | 3.595416667 GH 3.604395000 GH 3.610000000 GH 3.624600000 GH 3.624600000 GH | z -34.27 dBm z -31.97 dBm z -33.26 dBm z 16.75 dBm z -33.91 dBm | Δ Limit -9.270 dB -18.97 dB -20.26 dB -8.247 dB -20.91 dB | 5.000000 MH Auto Ma |
| Spur 2 3 4 5 5 | Range 1 2 3 4 5 6 | Start Freq 3.5750 GHz 3.6000 GHz 3.6090 GHz 3.6100 GHz 3.6400 GHz 3.6410 GHz | 3.6000 GHz 3.6090 GHz 3.6100 GHz 3.6400 GHz 3.6410 GHz 3.6500 GHz | 1.000 MHz 1.000 MHz 390.0 kHz 390.0 kHz 390.0 kHz 390.0 kHz 1.000 MHz | 3.595416667 GH 3.604395000 GH 3.610000000 GH 3.624600000 GH 3.640001667 GH 3.648995000 GH | z -34.27 dBm z -31.97 dBm z -33.26 dBm z 16.75 dBm z -33.91 dBm z -32.85 dBm | Δ Limit -9.270 dB -18.97 dB -20.26 dB -8.247 dB -20.91 dB -19.85 dB | Cr Ste 5.000000 MH Auto Ma Freq Offse |
| Start Spur | Range 1 2 3 4 5 | Start Freq 3.5750 GHz 3.6000 GHz 3.6090 GHz 3.6100 GHz 3.6400 GHz | 3.6000 GHz 3.6090 GHz 3.6100 GHz 3.6400 GHz 3.6410 GHz | 1.000 MHz 1.000 MHz 390.0 kHz 390.0 kHz 390.0 kHz 390.0 kHz 1.000 MHz | 3.595416667 GH 3.604395000 GH 3.610000000 GH 3.624600000 GH 3.624600000 GH | z -34.27 dBm z -31.97 dBm z -33.26 dBm z 16.75 dBm z -33.91 dBm z -32.85 dBm | Δ Limit -9.270 dB -18.97 dB -20.26 dB -8.247 dB -20.91 dB | 5.000000 MH |

Plot 7-165. Mid Channel Edge Plot (30MHz Total Bandwidth 16QAM)

| FCC ID: A3LMT6402-48A | | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Quality Manager |
|----------------------------------|--------------------|---------------------------------------|---------|---------------------------------|
| Test Report S/N: | Test Dates: | EUT Type: | | Dogo 146 of 170 |
| 1M1907220128-01. | 7/1/2019-7/29/2019 | Massive MIMO CBSD | | Page 146 of 172 |
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| Keysigh K <mark>I</mark> RL | nt Spectrum R | | r - Spun 50 Ω | DC DC | COR | REC | | | | SE:EXT | | | | ALIGN A | UTO | | | ul 15, 201 | | Frequency |
|--------------------------------|------------------|-------|------------------|-------|--------|--------|-----|---------|----------------------------|--------|----------|------|--------|---------|-------------|------------------------|-------|-----------------------|------|----------------------------|
| PASS | Gat | e: LO | | | IFG | ain:Lo | w | Trig | ter Fr : Free en: 26 | Run | 62500 | 0000 | GHz | | | Radio S Radio D | | | _ | requeity |
| 10 dB/di -og r | iv | Ref 3 | 30.00 | dBr | n | | | | | | | | | | | | | | | |
| 20.0 10.0 | | | | | | | , | | | | plawyry. | | | | | | | | 3. | Center Fre 625000000 GH |
| 0.00 | | | | [| | | | | | | | | | | | | | | | |
| 30.0 | | | | | | ····· | | | | | | | | | 1 -1 | andy is a special of a | | itterer for a jugitet | | |
| 50.0 | | | | | | | | | | | | | | | | | | | | |
| Start 3 | 3.575 G | SHz | | | | | | | | | | | | | | Stop | o 3.6 | 75 GH | z | CF Ste 5.000000 MH |
| Spur | Range | Start | Freq | s | itop F | req | RE | 3W | Fr | eque | ncy | | Ampl | itude | | ∆ Limi | it | | Auto | |
| 1 | 1 | 3.575 | 0 GHz | | 6000 | | 1.0 | 00 MH | z 3.5 | 9237 | 5000 (| GHz | -34.72 | dBm | | -9.724 | dB | | | |
| 2 | 2 | 3.600 | 0 GHz | 3. | 6090 | GHz | 1.0 | 00 MH | z 3.6 | 0508 | 5000 (| GHz | -32.18 | dBm | | -19.18 | dB | | | Freq Offs |
| 3 | 3 | 3.609 | 0 GHz | 3. | 6100 | GHz | 390 |).0 kHz | 3.6 | 0992 | 6667 (| GHz | -33.12 | dBm | | -20.12 | dB | | | |
| 4 | 4 | 3.610 | 0 GHz | 3. | 6400 | GHz | 390 |).0 kHz | 3.6 | 3155 | 0000 (| GHz | 15.22 | dBm | | -9.780 | dB | | | 0 H |
| 5 5 | 5 | 3.640 | 0 GHz | 3. | 6410 | GHz | 390 | .0 kHz | 3.6 | 4002 | 0000 (| GHz | -34.53 | dBm | | -21.53 | dB | | | |
| 6 | 6 | 3.641 | 0 GHz | 3. | 6500 | GHz | 1.0 | 00 MH | z 3.6 | 4760 | 0000 | GHz | -32.90 | dBm | | -19.90 | dB | | | |
| 7 7 | 7 | 3.650 | 0 GHz | 3. | 6750 | GHz | 1.0 | 00 MH | z 3.6 | 5033 | 3333 (| GHz | -33.23 | dBm | | -8.231 | dB | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |

Plot 7-166. Mid Channel Edge Plot (30MHz Total Bandwidth 64QAM)



Plot 7-167. Mid Channel Edge Plot (30MHz Total Bandwidth 256QAM)

| FCC ID: A3LMT6402-48A | | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Quality Manager |
|---------------------------------|--------------------|---------------------------------------|---------|---------------------------------|
| Test Report S/N: | Test Dates: | EUT Type: | | Dage 147 of 170 |
| 1M1907220128-01. | 7/1/2019-7/29/2019 | Massive MIMO CBSD | | Page 147 of 172 |
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High Channel 30MHz Total Bandwidth Channel Edge

| RL ASS | F | n Analyzer - Spurio ໃF 50 Ω te: LO | AC CORREC | +++ Trig: | SENSE:EXT r Freq: 3.690000 Free Run h: 16 dB | 0000 GHz | 02:01:31 P Radio Std: Radio Dev | | Frequency |
|----------------------|---------|--|------------|-----------------------|--|----------------|---------------------------------------|----------|-----------------------------|
| 0 dB/ og [| div | Ref 30.00 | dBm | | | | | | |
| 20.0 | | | | annifis (sinantaripa) | and with the state of the state | | | | Center Fre 3.69000000 GH |
| 0.00 | | | | | | | | | |
| 10.0 | | | | | | | | | |
| 0.0 - | | | | | | | | | |
| tart | 3.64 GI | Hz | | | | | Stop | 3.74 GHz | CF Ste 5.000000 MH |
| Spur | Range | Start Freq | Stop Freq | RBW | Frequency | Amplitude | ∆ Limit | | <u>Auto</u> Ma |
| | 1 | 3.6400 GHz | 3.6600 GHz | 1.000 MHz | 3.658833333 | GHz -36.24 dBm | -11.24 dB | | |
| | 2 | 3.6600 GHz | 3.6690 GHz | 1.000 MHz | 3.668985000 0 | GHz -35.22 dBm | -22.22 dB | | Freq Offs |
| | 3 | 3.6690 GHz | 3.6700 GHz | 100.0 kHz | 3.670000000 | GHz -39.99 dBm | -26.99 dB | | • |
| | 4 | 3.6700 GHz | 3.7000 GHz | 100.0 kHz | 3.685450000 0 | GHz 9.708 dBm | -15.29 dB | | 01 |
| , | 5 | 3.7000 GHz | 3.7010 GHz | 100.0 kHz | 3.700616667 | GHz -43.80 dBm | -30.80 dB | | |
| | 6 | 3.7010 GHz | 3.7100 GHz | 1.000 MHz | 3.701015000 0 | GHz -36.96 dBm | -23.96 dB | | |
| | 7 | 3.7100 GHz | 3.7200 GHz | 1.000 MHz | 3.710183333 | GHz -40.73 dBm | -15.73 dB | | |
| , | 8 | 3.7200 GHz | 3.7400 GHz | 1.000 MHz | 3.734133333 | GHz -47.45 dBm | -7.450 dB | | |
| | | | | | | | | | |
| | | | | | | | | | |

Plot 7-168. High Channel Edge Plot (30MHz Total Bandwidth QPSK)



Plot 7-169. High Channel Edge Plot (30MHz Total Bandwidth 16QAM)

| FCC ID: A3LMT6402-48A | | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Quality Manager |
|----------------------------------|--------------------|---------------------------------------|---------|---------------------------------|
| Test Report S/N: | Test Dates: | EUT Type: | | Dego 140 of 170 |
| 1M1907220128-01. | 7/1/2019-7/29/2019 | Massive MIMO CBSD | | Page 148 of 172 |
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| | - Ca | RF 50Ω [| DC CORREC | ++ Trig: I | SENSE:EXT Freq: 3.66500000 Free Run | ALIGN AUTO | Radio Std: | None | Frequency |
|----------------------------|---------------------------------|--|--|---|--|--|---|----------|--|
| PASS | 5 | | IFGain:Low | , #Atter | n: 14 dB | | Radio Devi | ce: BTS | |
| | | | | | | | | | |
| 0 dB | Idiv | Ref 30.00 d | IBm | | | | | | |
| -og Г | | | | | | | | | |
| 20.0 | | | | | | | | | Center Fre |
| 10.0 | | | /~************ | | and the second second | | | | 3.665000000 GH |
| 0.00 | | | í í | i II . | ()) | | | | |
| | | | | | | | | | |
| 10.0 | | | | | | | | | |
| 20.0 | | | | | | | | | |
| 30.0 | | | | | | | | | |
| 40 N 🖴 | | | | i I , | | | | | |
| 10.0 | | | | | | | | | |
| 50.0 | | | | | | | | | |
| 60.0 - | | | | | | | | | |
| | | | | | | | | | |
| start | 3.64 G | Hz | | | | | Stop 3 | 3.74 GHz | CF Ste |
| | | | | | | | | | |
| | | | | | | | | | 1.000000 MH |
| Spur | Range | Start Freg | Stop Freg | RBW | Frequency | Amplitude | ∆ Limit | | |
| Spur | | Start Freq | Stop Freq | RBW | Frequency | Amplitude | Δ Limit | | |
| | 1 | 3.6400 GHz | 3.6600 GHz | 1.000 MHz | 3.658100000 GH | z -36.54 dBm | -11.54 dB | | <u>Auto</u> Ma |
| 2 | | | | 1.000 MHz 1.000 MHz | 3.658100000 GH 3.668910000 GH | z -36.54 dBm z -35.67 dBm | -11.54 dB -22.67 dB | | <u>Auto</u> Ma Freq Offse |
| Spur 2 3 | 1 2 | 3.6400 GHz 3.6600 GHz 3.6690 GHz | 3.6600 GHz 3.6690 GHz 3.6700 GHz | 1.000 MHz 1.000 MHz 300.0 kHz | 3.658100000 GH 3.668910000 GH 3.669960000 GH | z -36.54 dBm z -35.67 dBm z -21.12 dBm | -11.54 dB -22.67 dB -8.118 dB | | <u>Auto</u> Ma Freq Offse |
| <u>2</u> } | 1 2 3 | 3.6400 GHz 3.6600 GHz | 3.6600 GHz 3.6690 GHz | 1.000 MHz 1.000 MHz 300.0 kHz 300.0 kHz | 3.658100000 GH 3.668910000 GH 3.669960000 GH 3.691950000 GH | z -36.54 dBm z -35.67 dBm z -21.12 dBm z 14.41 dBm | -11.54 dB -22.67 dB -8.118 dB -10.59 dB | | <u>Auto</u> Ma Freq Offse |
| 2 3 4 | 1 2 3 4 | 3.6400 GHz 3.6600 GHz 3.6690 GHz 3.6700 GHz 3.7000 GHz | 3.6600 GHz 3.6690 GHz 3.6700 GHz 3.7000 GHz 3.7010 GHz | 1.000 MHz 1.000 MHz 300.0 kHz 300.0 kHz 300.0 kHz | 3.65810000 GH 3.668910000 GH 3.669960000 GH 3.691950000 GH 3.700007000 GH | Iz -36.54 dBm iz -35.67 dBm iz -21.12 dBm iz 14.41 dBm iz -37.53 dBm | -11.54 dB -22.67 dB -8.118 dB -10.59 dB -24.53 dB | | 1.000000 MH <u>Auto</u> Ma Freq Offs e 0 H |
| 2 3 4 | 1 2 3 4 5 | 3.6400 GHz 3.6600 GHz 3.6690 GHz 3.6700 GHz | 3.6600 GHz 3.6690 GHz 3.6700 GHz 3.7000 GHz | 1.000 MHz 1.000 MHz 300.0 KHz 300.0 kHz 300.0 kHz 1.000 MHz | 3.658100000 GH 3.668910000 GH 3.669960000 GH 3.691950000 GH 3.700007000 GH 3.701000000 GH | z -36.54 dBm z -35.67 dBm z -21.12 dBm z 14.41 dBm z -37.53 dBm z -37.06 dBm | -11.54 dB -22.67 dB -8.118 dB -10.59 dB | | <u>Auto</u> Ma Freq Offse |
| 2 3 4 | 1 2 3 4 5 6 | 3.6400 GHz 3.6600 GHz 3.6690 GHz 3.6700 GHz 3.7000 GHz 3.7010 GHz 3.7100 GHz | 3.6600 GHz 3.6690 GHz 3.6700 GHz 3.7000 GHz 3.7010 GHz 3.7100 GHz | 1.000 MHz 1.000 MHz 300.0 KHz 300.0 KHz 300.0 KHz 1.000 MHz 1.000 MHz 1.000 MHz | 3.65810000 GH 3.668910000 GH 3.669960000 GH 3.691950000 GH 3.700007000 GH | z -36.54 dBm z -35.67 dBm z -21.12 dBm z 14.41 dBm z -37.53 dBm z -37.06 dBm z -40.21 dBm | -11.54 dB -22.67 dB -8.118 dB -10.59 dB -24.53 dB -24.06 dB | | <u>Auto</u> Ma Freq Offse |
| 2 2 3 4 5 7 | 1 2 3 4 5 6 7 | 3.6400 GHz 3.6600 GHz 3.6690 GHz 3.6700 GHz 3.7000 GHz 3.7010 GHz | 3.6600 GHz 3.6690 GHz 3.6700 GHz 3.7000 GHz 3.7010 GHz 3.7100 GHz 3.7200 GHz | 1.000 MHz 1.000 MHz 300.0 KHz 300.0 KHz 300.0 KHz 1.000 MHz 1.000 MHz 1.000 MHz | 3.658100000 GH 3.668910000 GH 3.669960000 GH 3.691950000 GH 3.700007000 GH 3.701000000 GH 3.710283333 GH | z -36.54 dBm z -35.67 dBm z -21.12 dBm z 14.41 dBm z -37.53 dBm z -37.06 dBm z -40.21 dBm | -11.54 dB -22.67 dB -8.118 dB -10.59 dB -24.53 dB -24.06 dB -15.21 dB | | <u>Auto</u> Ma Freq Offse |





Plot 7-171. High Channel Edge Plot (30MHz Total Bandwidth 256QAM)

| FCC ID: A3LMT6402-48A | | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Quality Manager |
|----------------------------------|--------------------|---------------------------------------|---------|---------------------------------|
| Test Report S/N: | Test Dates: | EUT Type: | | Dogo 140 of 172 |
| 1M1907220128-01. | 7/1/2019-7/29/2019 | Massive MIMO CBSD | | Page 149 of 172 |
| © 2019 PCTEST Engineering Labora | atory, Inc. | | | V1.0 12/17/2018 |



Low Channel 40MHz Total Bandwidth Channel Edge

| RL ASS | R | | DC C | ns ORREC FGain:Lo | ow | , Trig: | SENSE: er Freq Free R en: 22 d | 3.6000 un | 00000 | | ALIG | N AUTO | Radio S | 3 AM Jul 16, 20 td: None evice: BTS | | Frequency |
|--|------------------|---|--|--|---|---|---|--|--|---|--|---|--|---|------------|-------------------------------|
| 0 dB/div og | , | Ref 30.00 | dBm | | | 1 | | | | | | | | | | |
| 20.0 | | | | | 7 | | | \ <i>/</i> | | | ~ | | | | 3.6 | Center Fre |
| 0.00 0.0 | | | | | | | | | | | | | | | | |
| 10.0 | | | | | | | | Î | | | | | | | | |
| .0.0 | | | | - | - | | | Ų | | | | - | | i en filmetere | Aniperio | |
| | | | 1000 | • | | | | | | | | | | | | |
| 0.0 | per frem y sized | tarmistingal jugar Pathya | and the second second | | | | | | | | | | | | | |
| and a | | tz | and a second | | | | | | | | | | Sto | p 3.62 G | Hz | |
| tart 3. | | | Stop | Freq | R | BW | Freq | uency | | Ampli | itud | e | Sto | | Hz Auto | 800.000 kH |
| tart 3. | 51 GH | | | Freq 0 GHz | | BW DOO MHz | | | 7 GHz | | | | | t | | 800.000 kH |
| tart 3. | 51 GH | Start Freq | 3.530 | | 1.0 | | 3.521 | 066667 | | -55.17 | dBr | m | ∆ Limi | t dB | | |
| 0.0 4 | 51 GH | Start Freq 3.5100 GHz | 3.530 3.540 | 0 GHz | 1.(1.(| 000 MHz | 3.521 3.539 | 066667 875000 |) GHz | - <u>55.17</u> -42.64 | dBr dBr | m m | Δ Limi -15.17 | t dB dB | | 800.000 kH Ma Freq Offs |
| 0.0 44444 Start 3. | 51 GH | Start Freq 3.5100 GHz 3.5300 GHz | 3.530 3.540 3.549 | 00 GHz 00 GHz | 1.(1.(1.(| 000 MHz 000 MHz | 3.521 3.539 3.546 | 066667 875000 195000 |) GHz) GHz | -55.17 -42.64 -38.01 | dBr dBr dBr | n n n | Δ Limi -15.17 -17.64 | t dB dB dB | | 800.000 kH Ma |
| 5.0 44444 Spur R 2 3 | 51 GH | Start Freq 3.5100 GHz 3.5300 GHz 3.5400 GHz | 3.530 3.540 3.549 3.550 | 0 GHz 0 GHz 0 GHz | 1.0 1.0 1.0 82 | 000 MHz 000 MHz 000 MHz | 3.521 3.539 3.546 3.549 | 066667 875000 195000 980000 |) GHz) GHz) GHz | -55.17 -42.64 -38.01 -36.92 | dBr dBr dBr dBr | n n n n | Δ Limi -15.17 -17.64 -25.01 | t dB dB dB dB | | 800.000 kH Ma Freq Offs |
| 0.0 44444 Spur R 2 3 4 | 51 GH | Start Freq 3.5100 GHz 3.5300 GHz 3.5400 GHz 3.5490 GHz | 3.530 3.540 3.549 3.550 3.550 | 00 GHz 00 GHz 00 GHz 00 GHz 00 GHz | 1.0 1.0 1.0 82 82 | 000 MHz 000 MHz 000 MHz 000 MHz | 3.521 3.539 3.546 3.549 3.565 | 066667 875000 195000 980000 866667 |) GHz) GHz) GHz / GHz | -55.17 -42.64 -38.01 -36.92 17.56 | dBr dBr dBr dBr dBr | m n n n n n n n n n n n n n n n n n n n | Δ Limi -15.17 -17.64 -25.01 -23.92 | t dB dB dB dB dB dB | | 800.000 kH Ma Freq Offs |
| Spur R 1 2 3 4 5 5 | 51 GH | Start Freq 3.5100 GHz 3.5300 GHz 3.5400 GHz 3.5490 GHz 3.5500 GHz | 3.530 3.540 3.549 3.550 3.590 3.591 | 00 GHz 00 GHz 00 GHz 00 GHz 00 GHz | 1.0 1.0 1.0 82 82 82 82 | 000 MHz 000 MHz 000 MHz 0.0 KHz 0.0 kHz | 3.521 3.539 3.546 3.549 3.565 3.590 | 066667 875000 195000 980000 866667 050000 |) GHz) GHz) GHz / GHz) GHz | -55.17 -42.64 -38.01 -36.92 17.56 -16.22 | dBr dBr dBr dBr dBr dBr | m i m i m i m i n i | Δ Limi -15.17 -17.64 -25.01 -23.92 -7.440 | t dB dB dB dB dB dB dB | | 800.000 kł Ma Freq Offs |
| Spur R 1 2 3 4 5 6 | 51 GH | Start Freq 3.5100 GHz 3.5300 GHz 3.5400 GHz 3.5490 GHz 3.5500 GHz 3.5500 GHz | 3.530 3.540 3.549 3.550 3.590 3.591 3.600 | 00 GHz 00 GHz 00 GHz 00 GHz 00 GHz 10 GHz | 1.0 1.0 82 82 82 82 1.0 | 000 MHz 000 MHz 000 MHz 0.0 kHz 0.0 kHz 0.0 kHz | 3.521 3.539 3.546 3.549 3.565 3.590 3.591 | 066667 875000 195000 980000 866667 050000 560633 |) GHz) GHz) GHz / GHz) GHz 3 GHz | -55.17 -42.64 -38.01 -36.92 17.56 -16.22 -34.35 | dBr dBr dBr dBr dBr dBr dBr dBr | m i m i m i m i n i m i | △ Limi -15.17 -17.64 -25.01 -23.92 -7.440 -3.220 | t dB dB dB dB dB dB dB dB dB | | 800.000 kł Ma Freq Offs |
| Spur R 1 2 3 4 5 6 7 7 | 51 GH | Start Freq 3.5100 GHz 3.5300 GHz 3.5400 GHz 3.5490 GHz 3.5500 GHz 3.5500 GHz 3.5910 GHz | 3.530 3.540 3.549 3.550 3.590 3.591 3.600 | 00 GHz 00 GHz 00 GHz 00 GHz 00 GHz 10 GHz 00 GHz | 1.0 1.0 82 82 82 82 1.0 | 000 MHz 000 MHz 000 MHz 0.0 kHz 0.0 kHz 0.0 kHz 0.0 kHz | 3.521 3.539 3.546 3.549 3.565 3.590 3.591 | 066667 875000 195000 980000 866667 050000 560633 |) GHz) GHz) GHz / GHz) GHz 3 GHz | -55.17 -42.64 -38.01 -36.92 17.56 -16.22 -34.35 | dBr dBr dBr dBr dBr dBr dBr dBr | m i m i m i m i n i m i | Δ Limi -15.17 -17.64 -25.01 -23.92 -7.440 -3.220 -21.35 | t dB dB dB dB dB dB dB dB dB | | 800.000 kH Ma Freq Offs |

Plot 7-172. Low Channel Edge Plot (40MHz Total Bandwidth QPSK)



Plot 7-173. Low Channel Edge Plot (40MHz Total Bandwidth 16QAM)

| FCC ID: A3LMT6402-48A | | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Quality Manager |
|----------------------------------|--------------------|---------------------------------------|---------|---------------------------------|
| Test Report S/N: | Test Dates: | EUT Type: | | Dega 150 of 170 |
| 1M1907220128-01. | 7/1/2019-7/29/2019 | Massive MIMO CBSD | | Page 150 of 172 |
| © 2019 PCTEST Engineering Labora | atory, Inc. | • | | V1.0 12/17/2018 |



| <mark>()</mark> RL | R | | DC CO | s RREC | | | SENSE:E r Freq: Free Ru | 3.60000 | 00000 | | ALIG | SN AUTO | | 1:43:29 A adio Std | M Jul 16, 2019 : None | | Frequency |
|---|---|---|--|---|--|--|--|--|--|---|--|---------------------------------|----------------------|---|--------------------------|------------------|---------------------------------|
| PASS | Gat | te: LO NF | | Gain:Lov | ~ | | n: 22 dE | | | | | | Ra | adio Dev | vice: BTS | | |
| | | | | Guinteor | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| 10 dB/ Log F | div | Ref 30.00 | dBm | | | | | | | | _ | | | | 1 | | |
| 20.0 | | | | | | | | | | | | | | | | | Center Fre |
| | | | | | ply~^ | mplomen | Jerson Co | 1 March | - Nerter | halforen | Λŋ | | | | | | |
| 10.0 | | | | | | | | 17 | | | \Box | | | | | 3.6 | 500000000 GH |
| 0.00 | | | | | ╢┤ | | | \mathbb{H} | | | ΗÌ | | | | | | |
| 10.0 | | | | | | | | | | | | | | | | | |
| 20.0 | | | | | | | | | | | | | | | | | |
| | | │ ┌┼─ | | | | | | | | | | | | | | | |
| 30.0 | | | | | | | | ľ | | | | | | | | | |
| 40.0 | | | | | 1 I I | | | | | | | Provide State | | AND INCOME | an i fan di si di si di | n . | |
| | | | | and shares | | | | | | | | | | | | | |
| -50.0 | | | | | | | | | | | | | | | | | |
| | wat the trap store | والمورد والمحمد والمحم | and the second second | | | | | | | | | | | | | | |
| -50.0 | nian dapan teapations | tularter ray and the | and the second second | | | | | | | | | | | | | | |
| 60.0 * | 3.51 G | nijantinovana stanih 17 | | | | | | | | | | | | | | | |
| 60.0 * | 3.51 GI | ndantaran dan din HZ | | | | | | | | | | | | | 3.62 GH | z | |
| 60.0 Start | | | | | | | | | | | | | | Stop | | | 800.000 kH |
| 60.0 * | Range | Start Freq | Stop | | RB | | Frequ | | | Ampl | | | | Stop | 3.62 GH | z <u>Auto</u> | 800.000 kH |
| 60.0 Start Spur 1 | Range | Start Freq 3.5100 GHz | 3.5300 |) GHz | 1.00 | 00 MHz | 3.5225 | 33333 | | -54.42 | dB | m | | Stop | 3.62 GH | | CF Stej 800.000 kH Mai |
| -60.0 4 Start Spur 1 2 | Range | Start Freq 3.5100 GHz 3.5300 GHz | 3.5300 3.5400 |) GHz) GHz | 1.00 1.00 | 00 MHz 00 MHz | 3.5225 3.5392 | 33333 25000 | GHz | -54.42 -43.61 | dB dB | m m | | Stop | 3.62 GH | | 800.000 kH Ma |
| 60.0 4 Start Spur 1 2 3 | Range 1 2 3 | Start Freq 3.5100 GHz 3.5300 GHz 3.5400 GHz | 3.5300 3.5400 3.5490 |) <mark>GHz</mark>) GHz) GHz | 1.00 1.00 1.00 | 00 MHz 00 MHz 00 MHz | 3.5225 3.5392 3.5485 | 33333 25000 95000 | GHz GHz | -54.42 -43.61 -37.79 | dB dB dB | m m m | | Stop Limit 4.42 dE 8.61 dE 24.79 dE | 3.62 GH | | 800.000 kH Ma Freq Offse |
| 60.0 Start Spur 1 2 3 4 | Range 1 2 3 4 | Start Freq 3.5100 GHz 3.5300 GHz 3.5400 GHz 3.5400 GHz 3.5490 GHz | 3.5300 3.5400 3.5490 3.5500 |) GHz) GHz) GHz) GHz) GHz | 1.00 1.00 1.00 820 | 00 MHz 00 MHz 00 MHz 00 MHz | 3.5225 3.5392 3.5485 3.5499 | 33333 25000 95000 95000 | GHz GHz GHz | -54.42 -43.61 -37.79 -36.88 | dB dB dB dB | m m m m | -1 -1 -2 -2 | Stop Limit 4.42 dE 8.61 dE 24.79 dE 23.88 dE | 3.62 GH | | 800.000 kH Ma Freq Offse |
| 60.0 F Start Spur 1 2 3 4 5 | Range 1 2 3 4 5 | Start Freq 3.5100 GHz 3.5300 GHz 3.5400 GHz 3.5490 GHz 3.5500 GHz | 3.5300 3.5400 3.5490 3.5500 3.5500 |) GHz) GHz) GHz) GHz) GHz) GHz | 1.00 1.00 1.00 820 820 | 00 MHz 00 MHz 00 MHz 0.0 kHz 0.0 kHz | 3.5225 3.5392 3.5485 3.5499 3.5562 | 33333 25000 95000 95000 95000 | GHz GHz GHz GHz | -54.42 -43.61 -37.79 -36.88 19.02 | dB dB dB dB dB | m m m m n | | Stop Limit 4.42 dE 8.61 dE 24.79 dE 23.88 dE 5.981 dE | 3.62 GH | | 800.000 kH |
| 60.0 Start Spur 1 2 3 4 | Range 1 2 3 4 5 6 | Start Freq 3.5100 GHz 3.5300 GHz 3.5400 GHz 3.5490 GHz 3.5500 GHz 3.5900 GHz | 3.5300 3.5400 3.5490 3.5500 3.5900 3.5910 |) GHz) GHz) GHz) GHz) GHz) GHz | 1.00 1.00 820 820 820 | 00 MHz 00 MHz 00 MHz 0.0 kHz 0.0 kHz 0.0 kHz | 3.5225 3.5392 3.5485 3.5499 3.5562 3.5901 | 33333 25000 95000 95000 66667 00000 | GHz GHz GHz GHz GHz | -54.42 -43.61 -37.79 -36.88 19.02 -23.63 | dB dB dB dB dB dBn dBn | m m m m n n | | Stop Limit 14.42 dE 8.61 dE 24.79 dE 3.88 dE 5.981 dE 0.63 dE | 3.62 GH | | 800.000 kH Mar Freq Offse |
| 60.0 4 Start Spur 1 2 3 4 5 5 6 7 | Range 1 2 3 4 5 6 7 | Start Freq 3.5100 GHz 3.5300 GHz 3.5400 GHz 3.5500 GHz 3.5500 GHz 3.5900 GHz 3.5910 GHz | 3.5300 3.5400 3.5490 3.5500 3.5900 3.5910 3.6000 |) GHz) GHz) GHz) GHz) GHz) GHz) GHz | 1.00 1.00 820 820 820 820 1.00 | 00 MHz 00 MHz 00 MHz 0.0 kHz 0.0 kHz 0.0 kHz 0.0 MHz | 3.5225 3.5392 3.5485 3.5499 3.5562 3.5901 3.5911 | 33333 25000 95000 95000 266667 00000 70200 | GHz GHz GHz GHz GHz GHz | -54.42 -43.61 -37.79 -36.88 19.02 -23.63 -35.71 | dB dB dB dB dB dB dB dB | m m m m m m m | | Stop Limit 4.42 dE 8.61 dE 23.88 dE 5.981 dE 0.63 dE 22.71 dE | 3.62 GH | | 800.000 kH Ma Freq Offse |
| 60.0 F Start Spur 1 2 3 4 5 | Range 1 2 3 4 5 6 | Start Freq 3.5100 GHz 3.5300 GHz 3.5400 GHz 3.5490 GHz 3.5500 GHz 3.5900 GHz | 3.5300 3.5400 3.5490 3.5500 3.5900 3.5910 |) GHz) GHz) GHz) GHz) GHz) GHz) GHz | 1.00 1.00 820 820 820 820 1.00 | 00 MHz 00 MHz 00 MHz 0.0 kHz 0.0 kHz 0.0 kHz | 3.5225 3.5392 3.5485 3.5499 3.5562 3.5901 3.5911 | 33333 25000 95000 95000 266667 00000 70200 | GHz GHz GHz GHz GHz GHz | -54.42 -43.61 -37.79 -36.88 19.02 -23.63 -35.71 | dB dB dB dB dB dB dB dB | m m m m m m m | | Stop Limit 14.42 dE 8.61 dE 24.79 dE 3.88 dE 5.981 dE 0.63 dE | 3.62 GH | | 800.000 kH Ma Freq Offse |
| 60.0 Start Spur 1 2 3 4 5 5 6 7 | Range 1 2 3 4 5 6 7 | Start Freq 3.5100 GHz 3.5300 GHz 3.5400 GHz 3.5500 GHz 3.5500 GHz 3.5900 GHz 3.5910 GHz | 3.5300 3.5400 3.5490 3.5500 3.5900 3.5910 3.6000 |) GHz) GHz) GHz) GHz) GHz) GHz) GHz | 1.00 1.00 820 820 820 820 1.00 | 00 MHz 00 MHz 00 MHz 0.0 kHz 0.0 kHz 0.0 kHz 0.0 MHz | 3.5225 3.5392 3.5485 3.5499 3.5562 3.5901 3.5911 | 33333 25000 95000 95000 266667 00000 70200 | GHz GHz GHz GHz GHz GHz | -54.42 -43.61 -37.79 -36.88 19.02 -23.63 -35.71 | dB dB dB dB dB dB dB dB | m m m m n m m | | Stop Limit 4.42 dE 8.61 dE 23.88 dE 5.981 dE 0.63 dE 22.71 dE | 3.62 GH | | 800.000 kH Ma Freq Offse |
| Spur | Range 1 2 3 4 5 6 7 | Start Freq 3.5100 GHz 3.5300 GHz 3.5400 GHz 3.5500 GHz 3.5500 GHz 3.5900 GHz 3.5910 GHz | 3.5300 3.5400 3.5490 3.5500 3.5900 3.5910 3.6000 |) GHz) GHz) GHz) GHz) GHz) GHz) GHz | 1.00 1.00 820 820 820 820 1.00 | 00 MHz 00 MHz 00 MHz 0.0 kHz 0.0 kHz 0.0 kHz 0.0 MHz | 3.5225 3.5392 3.5485 3.5499 3.5562 3.5901 3.5911 | 33333 25000 95000 95000 266667 00000 70200 | GHz GHz GHz GHz GHz GHz | -54.42 -43.61 -37.79 -36.88 19.02 -23.63 -35.71 | dB dB dB dB dB dB dB dB | m m m m n m m | | Stop Limit 4.42 dE 8.61 dE 23.88 dE 5.981 dE 0.63 dE 22.71 dE | 3.62 GH | | 800.000 kH Ma Freq Offs |

Plot 7-174. Low Channel Edge Plot (40MHz Total Bandwidth 64QAM)



Plot 7-175. Low Channel Edge Plot (40MHz Total Bandwidth 256QAM)

| FCC ID: A3LMT6402-48A | | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Quality Manager |
|----------------------------------|--------------------|---------------------------------------|---------|---------------------------------|
| Test Report S/N: | Test Dates: | EUT Type: | | Dogo 151 of 170 |
| 1M1907220128-01. | 7/1/2019-7/29/2019 | Massive MIMO CBSD | | Page 151 of 172 |
| © 2019 PCTEST Engineering Labora | atory, Inc. | | | V1.0 12/17/2018 |



Mid Channel 40MHz Total Bandwidth Channel Edge

| Keysig RL | R | Analyzer - Spurio F 50 Ω e: LO | DC COF | REC | +++ Trig: | SENSE:EXT r Freq: 3.6250 Free Run h: 26 dB | 00000 | GHz | | Radio | 18 PMJul Std: Noi Device: | ne | Freque | ency |
|-------------------------------|--------------------------------|--------------------------------------|--------|-----|-----------|---|-------|--------|------|--------|---------------------------------|--------|------------------|------------------------|
| 10 dB/d | div | Ref 30.00 | dBm | | | | | | | | | | | |
| 20.0 | | | | | | | | | | | | | Cent 3.625000 | er Fre 000 GH |
| 0.00 | | | | | | | | | | | | | | |
| -30.0 - -40.0 - -50.0 - | ay dala a jing dag ta ay am Pa | | | | | | | | -, | | | | | |
| -60.0 | 3.575 C | | | | | | | | | | - 9.67 | 5 011- | | |
| start | 3.975 0 | ΞΠΖ | | | | | | | | | | 5 GHz | 5.000 | CF Ste 000 MH Ma |
| Spur | Range | Start Freq | Stop F | | RBW | Frequency | | Ampli | | ∆ Lim | | | <u>Auto</u> | IVIa |
| | 1 | 3.5750 GHz | 3.5950 | | | 3.595000000 | | | | -5.569 | | | | |
| 2 | 2 | 3.5950 GHz | 3.6050 | | | 3.598050000 | | | | -17.14 | | | Free | Offs |
| } | 4 | 3.6050 GHz | 3.6450 | | | 3.614466667 | | | | -5.810 | | | | 0 - |
| | 5 | 3.6450 GHz | 3.6550 | | | 3.645016667 | | | | -19.16 | | | | U. |
| 5 | 7 | 3.6550 GHz | 3.6750 | GHz | 1.000 MHz | 3.657666667 | GHz | -34.59 | dBm | -9.590 | dB | | | |
| SG | _ | _ | _ | _ | _ | _ | | _ | STAT | rus | _ | | | |

Plot 7-176. Mid Channel Edge Plot (40MHz Total Bandwidth QPSK)

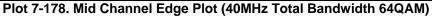
| | | n Analyzer - Spuri | | | | | | | | | | | |
|--------|----------|--------------------|--------|----------|--------------|----------------------------|--|--------|-------|----------------------|---------------------------------------|--------|----------------------|
| X/RL | F | RF 50 Ω | DC CO | RREC | Cente | SENSE:EXT r Freq: 3.625 | 000000 | GHz | | 01:16:00 Radio St | PM Jul 29, 2019 d: None | Free | quency |
| PASS | Gat | te: LO | | | +++ Trig: | Free Run n: 26 dB | | | | Desile D | DTC | | |
| | <u> </u> | | IF | Gain:Lov | , #Atter | n: 26 dB | | | | Radio De | evice: BTS | | |
| | | | | | | | | | | | | | |
| 10 dB/ | 'div | Ref 30.00 | dBm | | | | | | | | | | |
| 20.0 | | | | A | 1 | | | | | | | C (| enter Freq |
| 10.0 | | | | (mm | Produced and | and have and | ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ | لمرسمي | | | | | 00000 GHz |
| | | | | { | | | | | | | | 3.6250 | 00000 GHZ |
| 0.00 | | | | | | | | | | | | | |
| -10.0 | | | | - | | | | | | | | | |
| -20.0 | | | | - | | | | | | | | | |
| -30.0 | | | | <u> </u> | | | | | | | | | |
| -40.0 | | | | <u> </u> | | | | | - | *** | nj yenining fan it fan ym wegellen en | | |
| -50.0 | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| -60.0 | | | | | | | | | | | | | |
| Start | 3.575 (| GHz | | 1 | | | | | | Stop | 3.675 GHz | | |
| | | | | | | | | | | | | 5.0 | CF Step 00000 MHz |
| Spur | Range | Start Freq | Stop | Freg | RBW | Frequency | , | Ampl | itude | ∆ Limit | | Auto | Man |
| 1 | 1 | 3.5750 GHz | 3,5950 | | | 3.59180000 | | | | -7.356 c | | | |
| 2 | 2 | 3.5950 GHz | 3.6050 | | | 3.60498333 | | | | -19.13 c | | | |
| 3 | 4 | 3.6050 GHz | 3.6450 |) GHz | 820.0 kHz | 3.63506666 | 7 GHz | 20.76 | dBm | -4.242 0 | IB | - | eq Offset |
| | 5 | 3.6450 GHz | 3.6550 |) GHz | 1.000 MHz | 3.64511666 | 7 GHz | -32.84 | dBm | -19.84 c | B | | 0 Hz |
| 4 | | | 2 6750 |) GHz | 1.000 MHz | 3.67290000 | 0 GHz | -34.36 | dBm | -9.363 c | IB | | |
| 4 | 7 | 3.6550 GHz | 3.0750 | | | | | | | | | | |
| | 7 | 3.6550 GHz | 3.075 | JOHZ | | | | | | | | | |
| 4 | 7 | 3.6550 GHz | 5.075 | | | | | | | | | | |
| 4 | 7 | 3.6550 GHz | 5.075 | | | | | | | | | | |
| 4 | 7 | 3.6550 GHz | 5.075 | | | | | | | | | | |

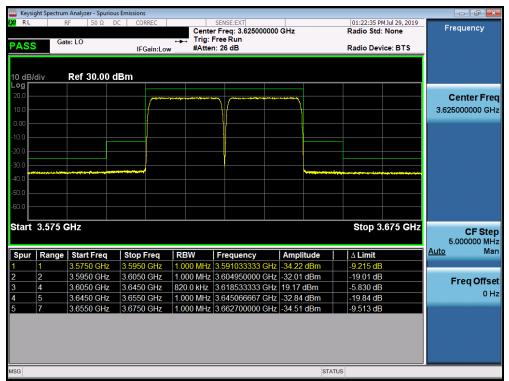
Plot 7-177. Mid Channel Edge Plot (40MHz Total Bandwidth 16QAM)

| FCC ID: A3LMT6402-48A | | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Quality Manager |
|----------------------------------|--------------------|---------------------------------------|---------|---------------------------------|
| Test Report S/N: | Test Dates: | EUT Type: | | Dage 152 of 172 |
| 1M1907220128-01. | 7/1/2019-7/29/2019 | Massive MIMO CBSD | | Page 152 of 172 |
| © 2019 PCTEST Engineering Labora | atory, Inc. | | | V1.0 12/17/2018 |



| N RL | Pectrum Analyzer - Sp RF 50 S | | ns ORREC | | SENSE:EXT | | | 01:19:26 PM | 4 Jul 29, 2019 | |
|------------|----------------------------------|----------------------------------|----------------|-------------------------------------|---|--|-------------------|------------------------|----------------|---|
| | Gate: LO | | | | r Freq: 3.625000 Free Run | 0000 GHz | | Radio Std: | None | Frequency |
| PASS | Gale: LO | | Gain:Lov | | n: 26 dB | | | Radio Devi | ce: BTS | |
| | | | | | | | | | | |
| 10 dB/div | Ref 30.0 | 00 dBm | | | | | | | | |
| Log | | | | | | | | | | |
| 20.0 | | | 1 | | ~ | and the second s | | | | Center Free |
| 10.0 | | | | | -\ <u>{</u> | | | | | 3.625000000 GH |
| 0.00 | | | | | | | | | | |
| 10.0 | | | _ | | | | | | | |
| 20.0 | | | | | | | | | | |
| | | | | | | | | | | |
| -30.0 | | | - | | | | | | | |
| 40.0 | | | | | | | | | | |
| -50.0 | | | | | | | | | | |
| -60.0 | | | | | | | | | | |
| | | | | | | | | | | |
| Start 3. | 575 GHz | | | | | | | Stop 3. | .675 GHz | CF Ster |
| | | | | | | | | | | |
| | | | | | | | | | | |
| Spur R | ange Start Fre | g Stop | Freq | RBW | Frequency | Ampl | itude | ∆ Limit | | 5.000000 MH |
| Spur R | ange Start Fre 3.5750 G | | Freq 0 GHz | | Frequency 3.583033333 (| Ampi GHz -34.18 | | ∆ Limit -9.183 dB | | 5.000000 MH |
| 1 1 | | Hz 3.595 | | 1.000 MHz | | GHz -34.18 | dBm | | | 5.000000 MH <u>Auto</u> Ma |
| 1 1 | 3.5750 G | Hz 3.595 Hz 3.605 | 0 GHz | 1.000 MHz 1.000 MHz | 3.583033333 (| GHz -34.18 GHz -32.58 | dBm dBm | -9.183 dB | | 5.000000 MH <u>Auto</u> Ma Freq Offse |
| 1 1 2 2 | 3.5750 G 3.5950 G | Hz 3.595 Hz 3.605 Hz 3.645 | 0 GHz 0 GHz | 1.000 MHz 1.000 MHz 820.0 kHz | 3.583033333 (3.604966667 (| GHz -34.18 GHz -32.58 GHz 19.12 | dBm dBm dBm | -9.183 dB -19.58 dB | | 5.000000 MH <u>Auto</u> Ma |



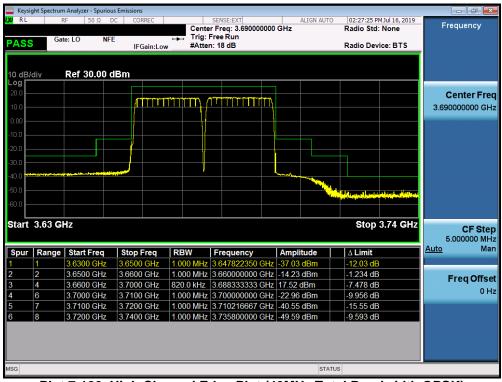


Plot 7-179. Mid Channel Edge Plot (40MHz Total Bandwidth 256QAM)

| FCC ID: A3LMT6402-48A | | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Quality Manager |
|--------------------------------------|--------------------|---------------------------------------|---------|---------------------------------|
| Test Report S/N: | Test Dates: | EUT Type: | | Dega 152 of 172 |
| 1M1907220128-01. | 7/1/2019-7/29/2019 | Massive MIMO CBSD | | Page 153 of 172 |
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High Channel 40MHz Total Bandwidth Channel Edge



Plot 7-180. High Channel Edge Plot (40MHz Total Bandwidth QPSK)



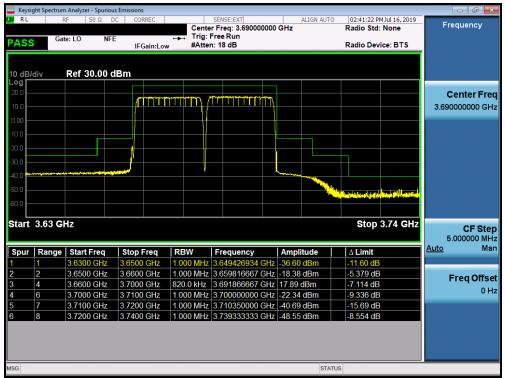
Plot 7-181. High Channel Edge Plot (40MHz Total Bandwidth 16QAM)

| FCC ID: A3LMT6402-48A | | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Quality Manager |
|----------------------------------|--------------------|---------------------------------------|---------|---------------------------------|
| Test Report S/N: | Test Dates: | EUT Type: | | Dega 154 of 170 |
| 1M1907220128-01. | 7/1/2019-7/29/2019 | Massive MIMO CBSD | | Page 154 of 172 |
| © 2019 PCTEST Engineering Labora | atory. Inc. | • | | V1.0 12/17/2018 |



| ASS Radio Device: BTS 0 dB/div Ref 30.00 dBm 1 3.6300 GHz 3.6500 GHz 2 3.6500 GHz 3.6600 GHz 2 3.6500 GHz 3.6600 GHz | | | NF 50Ω [| C CORREC | | SENSE:EXT Freq: 3.69000000 Free Run | ALIGN AUTO O GHz | 02:36:56 PM Jul 16, 2019 Radio Std: None | Frequency |
|---|--------|---------------------------|--|---|---|---|---|---|------------------------------|
| cong cong <thcong< th=""> cong cong <th< th=""><th>ASS</th><th>Gat</th><th>e. LO NF</th><th></th><th>-</th><th></th><th></th><th>Radio Device: BTS</th><th></th></th<></thcong<> | ASS | Gat | e. LO NF | | - | | | Radio Device: BTS | |
| cong cong <thcong< th=""> cong cong <th< th=""><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th>I</th></th<></thcong<> | | | | | | | | | I |
| cong cong <thcong< th=""> cong cong <th< td=""><td></td><td>diu</td><td>Pof 30.00 /</td><td>IBm</td><td></td><td></td><td></td><td></td><td></td></th<></thcong<> | | diu | Pof 30.00 / | IBm | | | | | |
| 200 200 Center Freq 100 1 | | | Kel Julou | | | | | | |
| Start Start Freq Stop Freq RBW Frequency Amplitude Δ Limit 500 1 3.6500 GHz 3.6500 GHz 3.6600 GHz 3.6600 GHz 1.000 MHz 3.649541547 GHz 37.54 dBm -12.54 dB 4.000 MHz 2 3.6500 GHz 3.6600 GHz 1.000 MHz 3.649541547 GHz 37.54 dBm -12.54 dB 5.000000 MHz 2 3.6500 GHz 3.6600 GHz 1.000 MHz 3.649541547 GHz -37.54 dBm -12.54 dB Freq Offs 3 4 3.6600 GHz 3.000 GHz 2.303 dBm -10.03 dB Freq Offs 3 4 3.6600 GHz 3.7000 GHz 2.30 dBm -10.08 dB 0 H 3 7 3.7100 GHz 3.7000 GHz 3.7000 GHz -2.308 dBm -10.08 dB 0 H | 20.0 | | | | | and the state of the second | | | Center Fre |
| 0.0 0.0 <td>io.o 🗕</td> <td></td> <td></td> <td>/</td> <td></td> <td>ریز <u>ند و کر کر دی میں</u></td> <td></td> <td></td> <td></td> | io.o 🗕 | | | / | | ریز <u>ند و کر کر دی میں</u> | | | |
| No.0 No.0 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<> | | | | | | | | | |
| Spur Range Start Freq Stop Freq RBW Frequency Amplitude Δ Limit 1 3.6300 GHz 3.6500 GHz 1.000 MHz 3.649541547 GHz -37.54 dBm -12.54 dB -10.03 dB 2 3.6500 GHz 3.6600 GHz 1.000 MHz 3.649541547 GHz -37.54 dBm -12.54 dB -10.03 dB 2 3.6500 GHz 3.6600 GHz 1.000 MHz 3.68000000 GHz -23.08 dBm -10.03 dB -70.09 dB -70.09 dB -70.09 dB -70.09 dB -70.00 GHz 3.7000 GHz 3.7000 GHz 3.7000 GHz -23.08 dBm -10.08 dB 0 H 7 3.7100 GHz 3.7000 GHz 1.000 MHz 3.700006G67 GHz -40.62 dBm -15.62 dB 0 H | | | | | | | | | |
| 300 0 400 0 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<> | | | | | | | | | |
| M0 0 M2 0 <t< td=""><td>20.0</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<> | 20.0 | | | | | | | | |
| Soul Start Science Start Freq Stop Freq RBW Frequency Amplitude Δ Limit 1 3.6300 GHz 3.6500 GHz 1.000 MHz 3.649541547 GHz -37.54 dBm -12.54 dB -10.03 dB -10.04 dB -10.04 dB -10.04 dB <td>80.0</td> <td></td> <td></td> <td> _ </td> <td></td> <td></td> <td></td> <td></td> <td></td> | 80.0 | | | _ | | | | | |
| Soul Start Science Start Freq Stop Freq RBW Frequency Amplitude Δ Limit 1 3.6300 GHz 3.6500 GHz 1.000 MHz 3.649541547 GHz -37.54 dBm -12.54 dB -10.03 dB -10.04 dB -10.04 dB -10.04 dB <td>0.0</td> <td></td> <td></td> <td>- Contraction of the second second</td> <td>ſ</td> <td></td> <td></td> <td></td> <td></td> | 0.0 | | | - Contraction of the second | ſ | | | | |
| Soul Start S.63 GHz Stop Freq RBW Frequency Amplitude Δ Limit 1 3.6300 GHz 3.8500 GHz 1.000 MHz 3.649541547 GHz -37.54 dBm -12.54 dB 2 3.6500 GHz 3.8600 GHz 1.000 MHz 3.649541547 GHz -37.54 dBm -10.03 dB 2 2 3.6600 GHz 3.7000 GHz 2.800 0 Hz 1.000 MHz 3.68000000 GHz -37.09 dB -7.209 dB -7.209 dB -7.209 dB 0 Hz 6 3.7000 GHz 3.7100 GHz 1.000 MHz 3.700000000 GHz -2.308 dBm -10.08 dB 0 Hz 6 7 3.7100 GHz 3.7000 GHz 1.000 MHz 3.700006667 GHz -40.62 dBm -15.62 dB | | | | | | | | | |
| Start 3.63 GHz Stop Freq RBW Frequency Amplitude Δ Limit 1 3.6300 GHz 3.8500 GHz 1.000 MHz 3.649541547 GHz -37.54 dBm -12.54 dB 2 2.3.6500 GHz 3.6600 GHz 1.000 MHz 3.649541547 GHz -37.54 dBm -10.03 dB 2 2.3.6500 GHz 3.6600 GHz 1.000 MHz 3.66000000 GHz -7.209 dB -7.209 dB 3 4 3.6600 GHz 3.7000 GHz 3.70000000 GHz -2.308 dBm -10.08 dB 4 3.7100 GHz 3.7100 GHz 1.000 MHz 3.70000000 GHz -2.308 dBm -10.08 dB 5 7 3.7100 GHz 3.7000 MHz 3.70000000 GHz -3.08 dBm -10.08 dB | | | | | | | i i i i i i i i i i i i i i i i i i i | Alignetic and the state of the | |
| Spur Range Start Freq Stop Freq RBW Frequency Amplitude Δ Limit Δuto Δuto 1 3.6300 GHz 3.6500 GHz 1.000 MHz 3.649541547 GHz -37.54 dBm -12.54 dB - | 0.0 | | | | | | | | |
| Spur Range Start Freq Stop Freq RBW Frequency Amplitude Δ Limit Δuto Δuto 1 3.6300 GHz 3.6500 GHz 1.000 MHz 3.649541547 GHz -37.54 dBm -12.54 dB - | tort | 26201 | | | | | | Eton 2 74 CH | |
| Spur Range Start Freq Stop Freq RBW Frequency Amplitude △ Limit Auto Mathematical 1 3.6300 GHz 3.6500 GHz 1.000 MHz 3.649541547 GHz -37.54 dBm -12.54 dB -10.03 dB -7.209 dB -7.209 dB -7.209 dB -10.08 dB -10.08 dB 0 H | | | | | | | | SIUD 3.74 GHZ | |
| Spbit Range Statt Freq Stop Freq Rev Prequency Adminute A Limit 1 3.6300 GHz 3.6500 GHz 1.000 MHz 3.649541547 GHz -37.54 dBm -12.54 dB 2 2 3.6500 GHz 3.6600 GHz 1.000 MHz 3.6600000 GHz -23.03 dBm -10.03 dB 3 4 3.6600 GHz 3.7000 GHz 3.682600000 GHz 17.79 dBm -7.209 dB Freq Offs 6 3.7000 GHz 3.7100 GHz 1.000 MHz 3.70000000 GHz -23.08 dBm -10.08 dB 0 H 5 7 3.7100 GHz 3.7000 GHz 1.000 MHz 3.710066667 GHz -40.62 dBm -15.62 dB | lari | 0.00 01 | 12 | | | | | | Cr Sie |
| 2 3.6500 GHz 3.6600 GHz 1.000 MHz 3.66000000 GHz -23.03 dBm -10.03 dB Freq Offs 3 4 3.6600 GHz 3.7000 GHz 820.0 kHz 3.682600000 GHz 17.79 dBm -7.209 dB -7.209 dB 0 Hz 6 3.7000 GHz 3.7100 GHz 1.000 MHz 3.70000000 GHz -23.08 dBm -10.08 dB 0 Hz 5 7 3.7100 GHz 3.7200 GHz 1.000 MHz 3.710066667 GHz -40.62 dBm -15.62 dB | otar t | | | | | | | | 5.000000 MH |
| 4 3.6600 GHz 3.7000 GHz 820.0 kHz 3.682600000 GHz 17.79 dBm -7.209 dB Freq Ons 6 3.7000 GHz 3.7100 GHz 1.000 MHz 3.70000000 GHz -23.08 dBm -10.08 dB 0 H 5 7 3.7100 GHz 3.7200 GHz 1.000 MHz 3.710066667 GHz -40.62 dBm -15.62 dB -15.62 dB | | | | | | | | ∆ Limit | 5.000000 MH |
| 4 3.6600 GHz 3.7000 GHz 820.0 kHz 3.682600000 GHz 17.79 dBm -7.209 dB 6 3.7000 GHz 3.7100 GHz 1.000 MHz 3.70000000 GHz -23.08 dBm -10.08 dB 5 7 3.7100 GHz 3.7200 GHz 1.000 MHz 3.710066667 GHz -40.62 dBm -15.62 dB | Spur | Range | Start Freq 3.6300 GHz | 3.6500 GHz | 1.000 MHz | 3.649541547 GH | z -37.54 dBm | Δ Limit -12.54 dB | 5.000000 MH |
| 6 3.7000 GHZ 3.7000 GHZ 1.000 MHZ 3.700000000 GHZ -23.08 dBm -10.08 dB 5 7 3.7100 GHz 3.7200 GHz 1.000 MHZ 3.710066667 GHz -40.62 dBm -15.62 dB | Spur | Range | Start Freq 3.6300 GHz 3.6500 GHz | 3.6500 GHz 3.6600 GHz | 1.000 MHz 1.000 MHz | 3.649541547 GH 3.660000000 GH | z -37.54 dBm z -23.03 dBm | Δ Limit -12.54 dB -10.03 dB | 5.00000 MH <u>Auto</u> Ma |
| | Spur | Range | Start Freq 3.6300 GHz 3.6500 GHz 3.6600 GHz | 3.6500 GHz 3.6600 GHz 3.7000 GHz | 1.000 MHz 1.000 MHz 820.0 kHz | 3.649541547 GH 3.660000000 GH 3.682600000 GH | z -37.54 dBm z -23.03 dBm z 17.79 dBm | Δ Limit -12.54 dB -10.03 dB -7.209 dB | 5.000000 MH Auto Ma |
| 8 3.7200 GHz 3.7400 GHz 1.000 MHz 3.739400000 GHz -49.20 dBm -9.204 dB | Spur | Range 1 2 4 6 | Start Freq 3.6300 GHz 3.6500 GHz 3.6600 GHz 3.7000 GHz | 3.6500 GHz 3.6600 GHz 3.7000 GHz 3.7100 GHz | 1.000 MHz 1.000 MHz 820.0 kHz 1.000 MHz | 3.649541547 GH 3.660000000 GH 3.682600000 GH 3.700000000 GH | z -37.54 dBm z -23.03 dBm z 17.79 dBm z -23.08 dBm | Δ Limit -12.54 dB -10.03 dB -7.209 dB -10.08 dB | 5.000000 MH Auto Ma |
| | Spur | Range 1 2 4 6 7 | Start Freq 3.6300 GHz 3.6500 GHz 3.6600 GHz 3.7000 GHz 3.7100 GHz | 3.6500 GHz 3.6600 GHz 3.7000 GHz 3.7100 GHz 3.7200 GHz | 1.000 MHz 1.000 MHz 820.0 kHz 1.000 MHz 1.000 MHz | 3.649541547 GH 3.660000000 GH 3.682600000 GH 3.700000000 GH 3.710066667 GH | z -37.54 dBm z -23.03 dBm z 17.79 dBm z -23.08 dBm z -40.62 dBm | Δ Limit -12.54 dB -10.03 dB -7.209 dB -10.08 dB -15.62 dB | 5.000000 MH Auto Ma |
| | Spur | Range 1 2 4 6 7 | Start Freq 3.6300 GHz 3.6500 GHz 3.6600 GHz 3.7000 GHz 3.7100 GHz | 3.6500 GHz 3.6600 GHz 3.7000 GHz 3.7100 GHz 3.7200 GHz | 1.000 MHz 1.000 MHz 820.0 kHz 1.000 MHz 1.000 MHz | 3.649541547 GH 3.660000000 GH 3.682600000 GH 3.700000000 GH 3.710066667 GH | z -37.54 dBm z -23.03 dBm z 17.79 dBm z -23.08 dBm z -40.62 dBm | Δ Limit -12.54 dB -10.03 dB -7.209 dB -10.08 dB -15.62 dB | 5.000000 MH |
| | Spur | Range 1 2 4 6 7 | Start Freq 3.6300 GHz 3.6500 GHz 3.6600 GHz 3.7000 GHz 3.7100 GHz | 3.6500 GHz 3.6600 GHz 3.7000 GHz 3.7100 GHz 3.7200 GHz | 1.000 MHz 1.000 MHz 820.0 kHz 1.000 MHz 1.000 MHz | 3.649541547 GH 3.660000000 GH 3.682600000 GH 3.700000000 GH 3.710066667 GH | z -37.54 dBm z -23.03 dBm z 17.79 dBm z -23.08 dBm z -40.62 dBm | Δ Limit -12.54 dB -10.03 dB -7.209 dB -10.08 dB -15.62 dB | Auto Ma |
| | Spur | Range 1 2 4 6 7 | Start Freq 3.6300 GHz 3.6500 GHz 3.6600 GHz 3.7000 GHz 3.7100 GHz | 3.6500 GHz 3.6600 GHz 3.7000 GHz 3.7100 GHz 3.7200 GHz | 1.000 MHz 1.000 MHz 820.0 kHz 1.000 MHz 1.000 MHz | 3.649541547 GH 3.660000000 GH 3.682600000 GH 3.700000000 GH 3.710066667 GH | z -37.54 dBm z -23.03 dBm z 17.79 dBm z -23.08 dBm z -40.62 dBm | Δ Limit -12.54 dB -10.03 dB -7.209 dB -10.08 dB -15.62 dB | Auto Ma |





Plot 7-183. High Channel Edge Plot (40MHz Total Bandwidth 256QAM)

| FCC ID: A3LMT6402-48A | | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Quality Manager | | | | |
|----------------------------------|--|---------------------------------------|---------|---------------------------------|--|--|--|--|
| Test Report S/N: | Test Dates: | EUT Type: | | Daga 155 of 170 | | | | |
| 1M1907220128-01. | 7/1/2019-7/29/2019 | Massive MIMO CBSD | | Page 155 of 172 | | | | |
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Low Channel 50MHz Total Bandwidth Channel Edge



Plot 7-184. Low Channel Edge Plot (50MHz Total Bandwidth QPSK)



Plot 7-185. Low Channel Edge Plot (50MHz Total Bandwidth 16QAM)

| FCC ID: A3LMT6402-48A | | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Quality Manager | | | | |
|----------------------------------|--|---------------------------------------|---------|---------------------------------|--|--|--|--|
| Test Report S/N: | Test Dates: | EUT Type: | | Dogo 156 of 170 | | | | |
| 1M1907220128-01. | 7/1/2019-7/29/2019 | Massive MIMO CBSD | | Page 156 of 172 | | | | |
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| 🚾 Keysig 🗶 RL | F | n Analyzer - Spuri F 50 Ω | | ns DRREC | | | SENSE:INT r Freq: 3.56000 External1 | 00000 | GHz | | | 10:17:38 A Radio Std | M Jul 31, 2019 : None | Fr | equency |
|------------------|--------|------------------------------|-------|-------------|---|-------|---|-------|---------|------|-------|-------------------------|--------------------------|-------------|----------------------|
| PASS | Gat | e: LO | IF | Gain:Lo | | | n: 14 dB | | | | | Radio Dev | ice: BTS | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| 10 dB/ Log 🔽 | div | Ref 30.00 | dBm | | | | | | | | | | | | |
| 20.0 | | | | | | | | | | | | | | | Center Free |
| 10.0 | | | | r | ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ | موسيس | ****** | - | | June | | | | | |
| | | | | | Ì | | | | | | | | | 3.56 | 0000000 GH |
| 0.00 | | | | | | Í – | | | | | | | | | |
| -10.0 | | | | | | | | | | | | | | | |
| -20.0 | | | | | | | | | | L. | | | | | |
| | | | | | | | | | | | | | | | |
| -30.0 | | | | | | | - i | | | | | | | | |
| -40.0 | | | - | | | | | | | | | | | | |
| -50.0 🚧 | - | | | | | | | | | | | | | | |
| -60.0 | | | | | | | | | | | | | | | |
| -00.0 | | | | | | | | | | | | | | | |
| Start | 3.51 G | lz | | | | | | _ | | | | Stop | 3.63 GHz | | |
| | | | | | | | | | | | | | | - | CF Stej 000000 MH |
| Spur | Range | Start Freq | Stop | Freq | RBV | V | Frequency | | Ampli | tude | | ∆ Limit | | <u>Auto</u> | Ma |
| 1 | 1 | 3.5100 GHz | 3.530 | 0 GHz | 1.000 |) MHz | 3.514666667 | GHz | -48.50 | dBm | | -8.496 dE | ; | | |
| 2 | 2 | 3.5300 GHz | | 0 GHz | 1.000 |) MHz | 3.539966667 | GHz | -41.15 | dBm | | -16.15 dE | 3 | | Freq Offse |
| 3 | 3 | 3.5400 GHz | 3.549 | 0 GHz | 1.000 |) MHz | 3.548685000 | GHz | -36.91 | dBm | | -23.91 dE | 3 | | |
| 4 | 4 | 3.5490 GHz | 3.550 | 0 GHz | 620.0 |) kHz | 3.549993333 | GHz | -19.12 | dBm | | -6.122 dE | | | 0 H |
| 5 | 5 | 3.5500 GHz | 3.600 | 0 GHz | 620.0 |) kHz | 3.557666667 | GHz | 17.07 (| dBm | | -7.926 dE | 3 | | |
| 6 | 6 | 3.6000 GHz | | 0 GHz | | | 3.600071000 | | | | | -3.460 dE | | | |
| 7 | 7 | 3.6000 GHz | 3.610 | 0 GHz | | | 3.600050000 | | | | | -1.780 dE | | | |
| 8 | 8 | 3.6100 GHz | 3.630 | 0 GHz | 1.000 |) MHz | 3.610200000 | GHz | -36.54 | dBm | | -11.54 dB | | | |
| | | | | | | | | | | | | | | | |
| ISG | _ | | | _ | _ | _ | | _ | _ | | TATUS | | | | |
| 30 | | | | | | | | | | | TATUS | | | | |

Plot 7-186. Low Channel Edge Plot (50MHz Total Bandwidth 64QAM)



Plot 7-187. Low Channel Edge Plot (50MHz Total Bandwidth 256QAM)

| FCC ID: A3LMT6402-48A | | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Quality Manager | | | | |
|--------------------------------------|---|---------------------------------------|---------|---------------------------------|--|--|--|--|
| Test Report S/N: | Test Dates: | EUT Type: | | Page 157 of 172 | | | | |
| 1M1907220128-01. | 7/1/2019-7/29/2019 | Massive MIMO CBSD | | | | | | |
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Mid Channel 50MHz Total Bandwidth Channel Edge

| Keysig X RL | F | a Analyzer - Spurio F 50 Ω e: LO | us Emissions AC CORREC IFGain:Lov | +++ Trig: | SENSE:INT r Freq: 3.6300000 Free Run n: 10 dB | 00 GHz | 11:18:55 AM Radio Std: Radio Devi | | Frequency |
|----------------|---------|--|---|-----------|--|----------------|---|----------|-------------------------------|
| 10 dB/c | div | Ref 30.00 (| dBm | | | | | | |
| 20.0 | | | | | | | | | Center Free 3.630000000 GH |
| -10.0 | | | | , | | | | | |
| -30.0 | | | | | | | | | |
| -50.0 | | | | | | | | | |
| Start | 3.575 (| GHz | | | | | Stop 3 | 3.68 GHz | CF Stej 300.000 kH |
| Spur | Range | Start Freq | Stop Freq | RBW | Frequency | Amplitude | ∆ Limit | | <u>Auto</u> Ma |
| 1 | 1 | 3.5750 GHz | 3.5950 GHz | 1.000 MHz | 3.589600000 GH | | -11.81 dB | | |
| 2 | 2 | 3.5950 GHz | 3.6040 GHz | 1.000 MHz | 3.603835000 GH | Iz -33.87 dBm | -20.87 dB | | Freq Offse |
| } | 3 | 3.6040 GHz | 3.6050 GHz | 620.0 kHz | 3.605000000 GH | lz -17.37 dBm | -4.371 dB | | |
| | 4 | 3.6050 GHz | 3.6550 GHz | 620.0 kHz | 3.652250000 GH | Iz 16.70 dBm | -8.296 dB | | 0 H |
| | 5 | 3.6550 GHz | 3.6560 GHz | | 3.655008333 GH | | -19.37 dB | | |
| 6 | 6 | 3.6560 GHz | 3.6650 GHz | | 3.656000000 GH | | -22.46 dB | | |
| 7 | 7 | 3.6650 GHz | 3.6800 GHz | 1.000 MHz | 3.665775000 GH | łz ∣-36.72 dBm | -11.72 dB | | |
| ISG | | | | | | s | TATUS | | |

Plot 7-188. Mid Channel Edge Plot (50MHz Total Bandwidth QPSK)

| RL RL | F | n Analyzer - Spurie RF 50 Ω te: LO | AC CORREC | 🛶 Trig: | SENSE:INT r Freq: 3.63000000 Free Run n: 10 dB |) GHz | 11:13:59 AM Jul 31 Radio Std: None Radio Device: B | Frequency |
|-----------------------------|--|--|------------|-----------|---|------------|--|------------------------------|
| 0 dBa | /div | Ref 30.00 | | | | | | |
| 20.0 10.0 | | | Mom | wy powywa | www.w. | munnin | | Center Fre 3.630000000 GH |
| 0.00 0.0 20.0 | | | | V | | | | |
| 30.0 10.0 <mark>2</mark> | an a | | | | | | | |
| 50.0 50.0 | | | | | | | | |
| tart | 3.575 (| GHz | | | | | Stop 3.68 | 300.000 kH |
| Spur | Range | Start Freq | Stop Freq | RBW | Frequency | Amplitude | ∆ Limit | Auto Ma |
| | 1 | 3.5750 GHz | 3.5950 GHz | 1.000 MHz | 3.593200000 GH | -36.31 dBm | -11.31 dB | |
| | 2 | 3.5950 GHz | 3.6040 GHz | 1.000 MHz | 3.603895000 GH | -34.07 dBm | -21.07 dB | Freq Offs |
| | 3 | 3.6040 GHz | 3.6050 GHz | | 3.604996667 GH | | -6.252 dB | |
| | 4 | 3.6050 GHz | 3.6550 GHz | | 3.636333333 GH | | -6.732 dB | |
| | 5 | 3.6550 GHz | 3.6560 GHz | | 3.655070000 GH | | -19.47 dB | |
| | 6 | 3.6560 GHz | 3.6650 GHz | | 3.656015000 GH | | -22.39 dB | |
| | | 0.0050.011 | 3.6800 GHz | 1 000 MH- | 3.670600000 GH | -36 93 dBm | -11.93 dB | |
| | 7 | 3.6650 GHz | 5.0800 GHZ | 1.000 MH2 | 3.07000000 GH | | | |

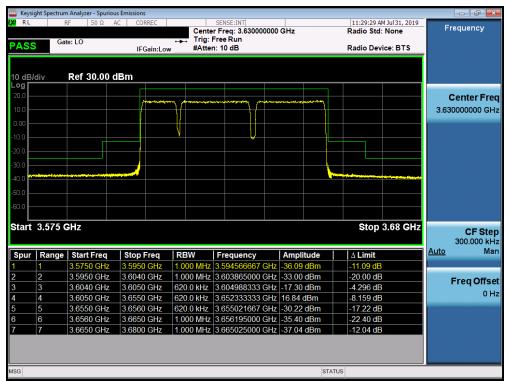
Plot 7-189. Mid Channel Edge Plot (50MHz Total Bandwidth 16QAM)

| FCC ID: A3LMT6402-48A | | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Quality Manager | | | | |
|----------------------------------|--|---------------------------------------|---------|---------------------------------|--|--|--|--|
| Test Report S/N: | Test Dates: | EUT Type: | Т Туре: | | | | | |
| 1M1907220128-01. | 7/1/2019-7/29/2019 | Massive MIMO CBSD | | Page 158 of 172 | | | | |
| © 2019 PCTEST Engineering Labora | 2019 PCTEST Engineering Laboratory, Inc. | | | | | | | |



| (RL | R | | AC CORREC | | SENSE:INT | GHz | 11:24:09 AM Radio Std: | M Jul 31, 2019 None | Frequency |
|------------------------|--|--------------------------|--------------------------|-----------|------------------------------------|------------|---------------------------|------------------------|--------------------------------|
| PASS | Gat | e: LO | IFGain:Lov | | ree Run :: 10 dB | | Radio Devi | ice: BTS | |
| 10 dB/ Log Г | div | Ref 30.00 | dBm | | | | | | |
| 20.0 | | | | • | | ***** | | | Center Free 3.630000000 GH: |
| ·10.00 | | | | | | | | | |
| -30.0 -40.0 | an a | | | | | | | ar a she waa saarada | |
| -50.0 - | | | | | | | | | |
| Start | 3.575 0 | SHz | | | | | Stop : | 3.68 GHz | CF Ste 300.000 kH |
| Spur | Range | Start Freq | Stop Freq | RBW | Frequency | Amplitude | ∆ Limit | | <u>Auto</u> Ma |
| 1 | 1 | 3.5750 GHz | 3.5950 GHz | 1.000 MHz | 3.591300000 GHz | -36.11 dBm | -11.11 dB | | |
| 2 | 2 | 3.5950 GHz | 3.6040 GHz | | 3.603760000 GHz | | -20.37 dB | | Freq Offse |
| | 3 | 3.6040 GHz | 3.6050 GHz | 620.0 kHz | 3.605000000 GHz | -16.96 dBm | -3.959 dB | | 0 H |
| | | 3.6050 GHz | 3.6550 GHz | 620.0 kHz | 3.652500000 GHz | 16.99 dBm | -8.013 dB | | UH |
| 3 4 | 4 | 3.6050 GHZ | | | | | -18.27 dB | | |
| 3 4 | 4 5 | 3.6050 GHZ 3.6550 GHz | 3.6560 GHz | 620.0 kHz | 3.655011667 GHz | -31.27 dBm | -18.27 dB | | |
| 3 4 5 | - | | | | 3.655011667 GHz 3.656075000 GHz | | -18.27 dB -21.88 dB | | |
| 3 4 5 6 | 5 | 3.6550 GHz | 3.6560 GHz | 1.000 MHz | | -34.88 dBm | | | |
| 3 4 5 6 7 | 5 6 | 3.6550 GHz 3.6560 GHz | 3.6560 GHz 3.6650 GHz | 1.000 MHz | 3.656075000 GHz | -34.88 dBm | -21.88 dB | | |

Plot 7-190. Mid Channel Edge Plot (50MHz Total Bandwidth 64QAM)



Plot 7-191. Mid Channel Edge Plot (50MHz Total Bandwidth 256QAM)

| FCC ID: A3LMT6402-48A | | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Quality Manager | | | | |
|----------------------------------|--|---------------------------------------|---------|---------------------------------|--|--|--|--|
| Test Report S/N: | Test Dates: | EUT Type: | | Page 159 of 172 | | | | |
| 1M1907220128-01. | 7/1/2019-7/29/2019 | Massive MIMO CBSD | | | | | | |
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High Channel 50MHz Total Bandwidth Channel Edge



Plot 7-192. High Channel Edge Plot (50MHz Total Bandwidth QPSK)



Plot 7-193. High Channel Edge Plot (50MHz Total Bandwidth 16QAM)

| FCC ID: A3LMT6402-48A | | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Quality Manager | | | | |
|----------------------------------|--|---------------------------------------|---------|---------------------------------|--|--|--|--|
| Test Report S/N: | Test Dates: | EUT Type: | | Dogo 160 of 170 | | | | |
| 1M1907220128-01. | 7/1/2019-7/29/2019 | Massive MIMO CBSD | | Page 160 of 172 | | | | |
| © 2019 PCTEST Engineering Labora | 2019 PCTEST Engineering Laboratory. Inc. | | | | | | | |



| X/RL | | n Analyzer - Spurio RF 50 Ω | us Emissions AC CORREC | | SENSE:INT |) GHz | 02:50:22 PM Jul 31, 2019 Radio Std: None | Frequency |
|--|---------------------------------|--|--|---|---|---|---|---|
| PASS | Gat | te: LO | IFGain:Lov | | Free Run n: 20 dB | | Radio Device: BTS | |
| 10 dB/ | /div | Ref 30.00 | dBm | | | | | |
| Log 20.0 | | proc | | nanan katamang h | 10.0000 1000 1000 1000 1000 1000 1000 1 | | | Center Free 3.690000000 GH: |
| 0.00 - -10.0 - -20.0 - | | | | | | | | |
| -30.0 -40.0 | | | | V | | | | |
| -50.0 - | | | | | | | | |
| Start | 3.63 GI | Hz | | | | | Stop 3.74 GH | Cr Sie |
| | | | | | | | | 5.000000 MH |
| Spur | Range | Start Freq | Stop Freq | RBW | Frequency | Amplitude | ∆ Limit | |
| Spur 1 | Range | Start Freq 3.6300 GHz | Stop Freq 3.6400 GHz | | Frequency 3.635966667 GHz | | Δ Limit -10.86 dB | |
| 1 | | | | 1.000 MHz | | -35.86 dBm | | Auto Mar |
| 1 2 | 1 | 3.6300 GHz | 3.6400 GHz | 1.000 MHz 1.000 MHz | 3.635966667 GHz | -35.86 dBm -34.55 dBm | -10.86 dB | Auto Mar Freq Offse |
| 1 2 3 | 1 2 | 3.6300 GHz 3.6400 GHz | 3.6400 GHz 3.6490 GHz | 1.000 MHz 1.000 MHz 220.0 kHz | 3.635966667 GHz 3.648985000 GHz | -35.86 dBm -34.55 dBm -14.57 dBm | -10.86 dB -21.55 dB | Auto Mar Freq Offse |
| 1 2 3 4 | 1 2 3 | 3.6300 GHz 3.6400 GHz 3.6490 GHz | 3.6400 GHz 3.6490 GHz 3.6500 GHz | 1.000 MHz 1.000 MHz 220.0 kHz 220.0 kHz | 3.635966667 GHz 3.648985000 GHz 3.650000000 GHz | -35.86 dBm -34.55 dBm -14.57 dBm 13.04 dBm | -10.86 dB -21.55 dB -1.574 dB | Auto Mar Freq Offse |
| 1 2 3 4 5 | 1 2 3 4 | 3.6300 GHz 3.6400 GHz 3.6490 GHz 3.6500 GHz | 3.6400 GHz 3.6490 GHz 3.6500 GHz 3.7000 GHz | 1.000 MHz 1.000 MHz 220.0 kHz 220.0 kHz 220.0 kHz | 3.635966667 GHz 3.648985000 GHz 3.650000000 GHz 3.653916667 GHz | -35.86 dBm -34.55 dBm -14.57 dBm 13.04 dBm -41.39 dBm | -10.86 dB -21.55 dB -1.574 dB -11.96 dB | Auto Mar Freq Offse |
| 1 2 3 4 5 | 1 2 3 4 5 | 3.6300 GHz 3.6400 GHz 3.6490 GHz 3.6500 GHz 3.7000 GHz | 3.6400 GHz 3.6490 GHz 3.6500 GHz 3.7000 GHz 3.7010 GHz | 1.000 MHz 1.000 MHz 220.0 kHz 220.0 kHz 220.0 kHz 1.000 MHz | 3.635966667 GHz 3.648985000 GHz 3.650000000 GHz 3.653916667 GHz 3.700025000 GHz | -35.86 dBm -34.55 dBm -14.57 dBm 13.04 dBm -41.39 dBm -36.41 dBm | -10.86 dB -21.55 dB -1.574 dB -11.96 dB -28.39 dB | 5.00000 MH Auto Mar Freq Offse 0 H |
| Spur 1 2 3 4 5 6 7 8 | 1 2 3 4 5 6 | 3.6300 GHz 3.6400 GHz 3.6490 GHz 3.6500 GHz 3.7000 GHz 3.7010 GHz | 3.6400 GHz 3.6490 GHz 3.6500 GHz 3.7000 GHz 3.7010 GHz 3.7100 GHz | 1.000 MHz 1.000 MHz 220.0 KHz 220.0 KHz 220.0 KHz 1.000 MHz 1.000 MHz | 3.635966667 GHz 3.648985000 GHz 3.650000000 GHz 3.653916667 GHz 3.700025000 GHz 3.701645000 GHz | -35.86 dBm -34.55 dBm -14.57 dBm 13.04 dBm -41.39 dBm -36.41 dBm -38.76 dBm | -10.86 dB -21.55 dB -1.574 dB -11.96 dB -28.39 dB -23.41 dB | Auto Mar Freq Offse |
| 1 2 3 4 5 6 7 | 1 2 3 4 5 6 7 | 3.6300 GHz 3.6400 GHz 3.6490 GHz 3.6500 GHz 3.7000 GHz 3.7010 GHz 3.7100 GHz | 3.6400 GHz 3.6490 GHz 3.6500 GHz 3.7000 GHz 3.7010 GHz 3.7100 GHz 3.7200 GHz | 1.000 MHz 1.000 MHz 220.0 KHz 220.0 KHz 220.0 KHz 1.000 MHz 1.000 MHz | 3.635966667 GHz 3.648985000 GHz 3.650000000 GHz 3.653916667 GHz 3.700025000 GHz 3.701645000 GHz 3.710000000 GHz | -35.86 dBm -34.55 dBm -14.57 dBm 13.04 dBm -41.39 dBm -36.41 dBm -38.76 dBm | -10.86 dB -21.55 dB -1.574 dB -11.96 dB -28.39 dB -23.41 dB -13.76 dB | Auto Mar Freq Offse |

Plot 7-194. High Channel Edge Plot (50MHz Total Bandwidth 64QAM)



Plot 7-195. High Channel Edge Plot (50MHz Total Bandwidth 256QAM)

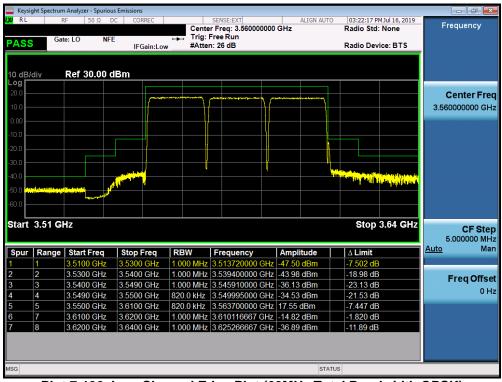
| FCC ID: A3LMT6402-48A | | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Quality Manager | | | | |
|---------------------------------|---|---------------------------------------|---------|---------------------------------|--|--|--|--|
| Test Report S/N: | Test Dates: | EUT Type: | | Da an 404 af 470 | | | | |
| 1M1907220128-01. | 7/1/2019-7/29/2019 | Massive MIMO CBSD | | Page 161 of 172 | | | | |
| © 2019 PCTEST Engineering Labor | 019 PCTEST Engineering Laboratory. Inc. | | | | | | | |



| FCC ID: A3LMT6402-48A | | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Quality Manager |
|----------------------------------|--------------------|---------------------------------------|---------|---------------------------------|
| Test Report S/N: | Test Dates: | EUT Type: | | Dage 162 of 172 |
| 1M1907220128-01. | 7/1/2019-7/29/2019 | Massive MIMO CBSD | | Page 162 of 172 |
| © 2019 PCTEST Engineering Labora | tory, Inc. | · | | V1.0 12/17/2018 |



Low Channel 60MHz Total Bandwidth Channel Edge



Plot 7-196. Low Channel Edge Plot (60MHz Total Bandwidth QPSK)



Plot 7-197. Low Channel Edge Plot (60MHz Total Bandwidth 16QAM)

| FCC ID: A3LMT6402-48A | | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Quality Manager |
|----------------------------------|--------------------|---------------------------------------|---------|---------------------------------|
| Test Report S/N: | Test Dates: | EUT Type: | | Dogo 162 of 172 |
| 1M1907220128-01. | 7/1/2019-7/29/2019 | Massive MIMO CBSD | | Page 163 of 172 |
| © 2019 PCTEST Engineering Labora | atory. Inc. | | | V1.0 12/17/2018 |



| | trum Analyzer - Spuri | | | | | | |
|------------------|-----------------------|------------------|----------------|-------------------------------|------------|--|----------------|
| XI RL | RF 50 Ω | DC CORREC | Center | SENSE:EXT Freq: 3.56000000 | ALIGN AU | TO 03:37:18 PM Jul 16, 2019 Radio Std: None | Frequency |
| PASS | Gate: LO N | FE IFGain:Lov | - | ree Run : 26 dB | | Radio Device: BTS | |
| | | II Gam.Eov | | | | | |
| | | | | | | | |
| 10 dB/div Log | Ref 30.00 | aBm | | | | | |
| 20.0 | | | | | | | Center Free |
| 10.0 | | | | | | | 3.560000000 GH |
| 0.00 | | | | | | | 0.00000000000 |
| | | | | | | | |
| -10.0 | | | | | | | |
| -20.0 | | | | | | | |
| -30.0 | | | <mark>/</mark> | <mark>}</mark> | | | |
| -40.0 | | | | | | | <mark>K</mark> |
| -50.0 adhatalica | | J | | | | and the second | |
| -60.0 | المسهدية الأ | | | | | | |
| 00.0 | | | | | | | |
| Start 3.51 | GHz | | | | | Stop 3.64 GH | CF Ster |
| | | | | | | | 5.000000 MH |
| Spur Ran | ge Start Freq | Stop Freq | RBW | Frequency | Amplitude | ∆ Limit | Auto Mar |
| 1 1 | 3.5100 GHz | | 1.000 MHz | 3.516460000 GHz | -46.00 dBm | -5.998 dB | |
| 2 2 | 3.5300 GHz | 3.5400 GHz | 1.000 MHz | 3.539400000 GHz | -43.49 dBm | -18.49 dB | Freq Offse |
| 3 3 | 3.5400 GHz | 3.5490 GHz | 1.000 MHz | 3.547215000 GHz | -36.27 dBm | -23.27 dB | 0 H |
| 4 4 | 3.5490 GHz | | | 3.549914000 GHz | | -21.92 dB | UH |
| 5 5 | 3.5500 GHz | | | 3.566600000 GHz | | -6.767 dB | |
| 6 7 | 3.6100 GHz | 3.6200 GHz | 1.000 MHz | 3.610100000 GHz | -14.84 dBm | -1.838 dB | |
| 7 8 | 3.6200 GHz | 3.6400 GHz | 1.000 MHz | 3.620033333 GHz | -36.16 dBm | -11.16 dB | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| SG | | | | | ST | ATUS | |

Plot 7-198. Low Channel Edge Plot (60MHz Total Bandwidth 64QAM)

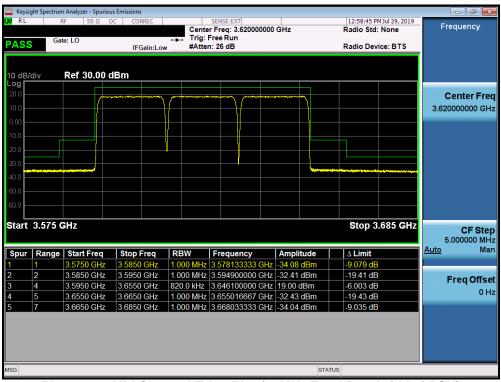


Plot 7-199. Low Channel Edge Plot (60MHz Total Bandwidth 256QAM)

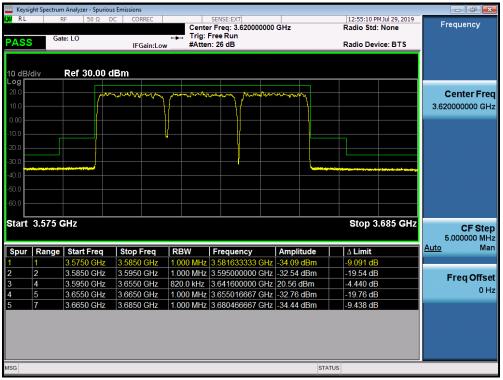
| FCC ID: A3LMT6402-48A | | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Quality Manager |
|--------------------------------------|--------------------|---------------------------------------|---------|---------------------------------|
| Test Report S/N: | Test Dates: | EUT Type: | | Dage 164 of 172 |
| 1M1907220128-01. | 7/1/2019-7/29/2019 | Massive MIMO CBSD | | Page 164 of 172 |
| © 2019 PCTEST Engineering Laboration | atory, Inc. | · | | V1.0 12/17/2018 |



Mid Channel 60MHz Total Bandwidth Channel Edge



Plot 7-200. Mid Channel Edge Plot (60MHz Total Bandwidth QPSK)

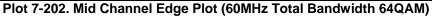


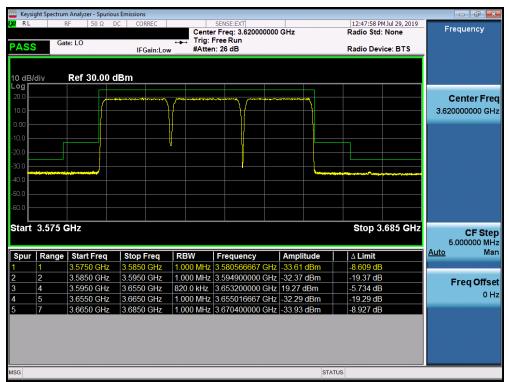
Plot 7-201. Mid Channel Edge Plot (60MHz Total Bandwidth 16QAM)

| FCC ID: A3LMT6402-48A | | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Quality Manager |
|----------------------------------|--------------------|---------------------------------------|---------|---------------------------------|
| Test Report S/N: | Test Dates: | EUT Type: | | Dogo 165 of 170 |
| 1M1907220128-01. | 7/1/2019-7/29/2019 | Massive MIMO CBSD | | Page 165 of 172 |
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| 🛄 Keysi 🗶 RL | | n Analyzer - Spi RF 50 Ω | urious Emi | ssions CORREC | 1 | | SENSE: | TXT | | | | | 12: | :51:54 P | M Jul 29, 2019 | _ | |
|-----------------|---------|-----------------------------|------------|--------------------|------------------|-------------------|-------------|---------|------|----------|------|-------|-----|------------------|--|-------------|-----------------------------|
| | | 0 30 32 | | CONTREC | | Center | Freq: | 3.62000 | 0000 | GHz | | | | | : None | F | requency |
| PASS | Gat | te: LO | | IFGain:Lo | w w | Trig: F #Atten | | | | | | | Rad | lio Dev | vice: BTS | | |
| | | | | | | | | | | | | | | | | | |
| 10 dB/ | div | Ref 30.0 | 0 dBm | ı | | | | | | | | | | | | | |
| Log 20.0 | | | | | | | | | | | | | | | | | 0 |
| 10.0 | | / | | | $\left(\right)$ | | ~~ <u>~</u> | 1 | | | 7 | | | | | | Center Freq 20000000 GHz |
| | | | | | 1 | | | \/ | | | | | | | | 3.0. | 20000000 GHZ |
| 0.00 | | Í | | | | | | ļ | | | Ì | | | | | | |
| -10.0 | | | | | | | | ţ | | | ╞ | | | | | | |
| -20.0 | | | | | | | | | | | + | | ΤĿ | | | | |
| -30.0 | | | | | | | | _ | | | t | | | | | | |
| -40.0 | | | | | | | | | | | | | | | A CONTRACTOR OF THE OWNER OF THE | | |
| -50.0 | | | | | | | | | | | | | | | | | |
| -60.0 | | | | | | | | | | | | | | | | | |
| L | | | | | | | | | | | | | | | | | |
| start | 3.575 (| ϶ĦΖ | | | | | | | | | | | S | top a | .685 GHz | | CF Step 5.000000 MHz |
| Spur | Range | Start Free | q St | top Freq | RB | N | Frequ | iency | | Amplit | ude | | Δ | imit | | <u>Auto</u> | Man |
| 1 | 1 | 3.5750 GH | | 5850 GHz | | | | | | -33.72 0 | | | | 722 dE | | | |
| 2 | 2 | 3.5850 GH | | 5950 GHz | | | | | | -32.58 (| | | | .58 dE | | | Freq Offset |
| 3 | 4 | 3.5950 GH | | 6550 GHz | | | | | | 19.26 d | | | | 740 dE | | | 0 Hz |
| 4 5 | 5 | 3.6550 GH 3.6650 GH | | 650 GHz 850 GHz | | | | | | -32.99 c | | | | .99 dE 364 dE | | | |
| J | 1 | 3.0000 GI | IZ [3.0 | JOJU GHZ | 1.00 | | 3.003 | +00000 | GHZ | -34.30 (| JDII | | -9. | 004 UL |) | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| //SG | | | _ | | _ | _ | _ | _ | _ | _ | - | STATU | IS | _ | | - | |
| | | | | | | | | | _ | | _ | | 3 | _ | | _ | |





Plot 7-203. Mid Channel Edge Plot (60MHz Total Bandwidth 256QAM)

| FCC ID: A3LMT6402-48A | | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Quality Manager |
|--------------------------------------|--------------------|---------------------------------------|---------|---------------------------------|
| Test Report S/N: | Test Dates: | EUT Type: | | Dega 166 of 172 |
| 1M1907220128-01. | 7/1/2019-7/29/2019 | Massive MIMO CBSD | | Page 166 of 172 |
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High Channel 60MHz Total Bandwidth Channel Edge

| RL ASS | R | Analyzer - Spurio F 50 Ω e: LO | us Emissions DC CORREI IFGair | | | | 0000 GHz | ALIGN AUTO | 05:28:20 P Radio Std Radio Dev | | Frequency |
|------------------------------|----------------------------|--|---|---|--|---|---|---|---|----------------------------|------------------------------|
| 0 dB/di og | iv | Ref 30.00 | dBm | | | | | | | | |
| 0.0 0.0 | | | | | | | / | | | | Center Fre 3.690000000 GH |
| | | | | | | | [| | | | |
| 0.0 0.0 | | | | | | | | | | | |
| 0.0 | | | | | | | | | | | |
| | | | | | | | | | | | |
| 0.0 | | | | | | | | | | | |
| tart 3 | 3.59 GH | lz | | | | | | | Stop | 3.74 GHz | CF Ste |
| Spur | Range | Start Freq | Stop Fre | q RB | W | Frequency | Amp | litude | ∆ Limit | | <u>Auto</u> Ma |
| spur | 4 | 3.5900 GHz | 3.6300 GI | | | 8.625600000 | | | -10.81 dE | | |
| 1 | | | _ | | 0 MHz 3 | 3.634450000 | | | | | Ener Offe |
| 2 | 2 | 3.6300 GHz | 3.6350 GI | | | | | | -22.96 dE | | Frequis |
| 2 | <u>2</u> 3 | 3.6300 GHz 3.6350 GHz | 3.6350 GI 3.6400 GI | lz 1.00 | 0 MHz 3 | 3.639983333 | GHz -15.2 | 7 dBm | -2.265 dE | 3 | |
| | 2 3 4 | 3.6300 GHz 3.6350 GHz 3.6400 GHz | 3.6350 GI 3.6400 GI 3.7000 GI | Hz 1.00 Hz 820 | 0 MHz 3 0 kHz 3 | 3.639983333 (3.681900000 (| GHz -15.2 GHz 17.39 | 7 dBm dBm | -2.265 dE | 3 | |
| | 2 3 4 5 | 3.6300 GHz 3.6350 GHz 3.6400 GHz 3.7000 GHz | 3.6350 GI 3.6400 GI 3.7000 GI 3.7010 GI | Hz 1.00 Hz 820 Hz 820 | 0 MHz 3 0 kHz 3 0 kHz 3 | 3.639983333 (3.681900000 (3.700041667 (| GHz -15.2 GHz 17.39 GHz -35.6 | 7 dBm 9 dBm 5 dBm | -2.265 dE -7.609 dE -22.65 dE | 3 3 3 | |
| | 2 3 4 5 6 | 3.6300 GHz 3.6350 GHz 3.6400 GHz 3.7000 GHz 3.7010 GHz | 3.6350 GI 3.6400 GI 3.7000 GI 3.7010 GI 3.7100 GI | Hz 1.00 Hz 820 Hz 820 Hz 1.00 | 0 MHz 3 0 kHz 3 0 kHz 3 0 kHz 3 0 MHz 3 | 3.639983333 (3.681900000 (3.700041667 (3.702650000 (| GHz -15.2 GHz 17.39 GHz -35.6 GHz -36.3 | 7 dBm 9 dBm 5 dBm 6 dBm | -2.265 dE -7.609 dE -22.65 dE -23.36 dE | } } } | |
| | 2 3 4 5 6 7 | 3.6300 GHz 3.6350 GHz 3.6400 GHz 3.7000 GHz 3.7010 GHz 3.7100 GHz | 3.6350 Gl 3.6400 Gl 3.7000 Gl 3.7010 Gl 3.7100 Gl 3.7100 Gl 3.7200 Gl | Hz 1.00 Hz 820 Hz 820 Hz 1.00 Hz 1.00 | 0 MHz 3 0 kHz 3 0 kHz 3 0 MHz 3 0 MHz 3 0 MHz 3 | 8.639983333 (8.681900000 (3.700041667 (8.702650000 (8.710066667 (| GHz -15.2 GHz 17.39 GHz -35.6 GHz -36.3 GHz -39.0 | 7 dBm 9 dBm 5 dBm 6 dBm 9 dBm | -2.265 dE -7.609 dE -22.65 dE -23.36 dE -14.09 dE | 3 3 3 3 3 3 | |
| | 2 3 4 5 6 7 | 3.6300 GHz 3.6350 GHz 3.6400 GHz 3.7000 GHz 3.7010 GHz | 3.6350 GI 3.6400 GI 3.7000 GI 3.7010 GI 3.7100 GI | Hz 1.00 Hz 820 Hz 820 Hz 1.00 Hz 1.00 | 0 MHz 3 0 kHz 3 0 kHz 3 0 MHz 3 0 MHz 3 0 MHz 3 | 3.639983333 (3.681900000 (3.700041667 (3.702650000 (| GHz -15.2 GHz 17.39 GHz -35.6 GHz -36.3 GHz -39.0 | 7 dBm 9 dBm 5 dBm 6 dBm 9 dBm | -2.265 dE -7.609 dE -22.65 dE -23.36 dE | 3 3 3 3 3 3 | Freq Offs 0 F |

Plot 7-204. High Channel Edge Plot (60MHz Total Bandwidth QPSK)



Plot 7-205. High Channel Edge Plot (60MHz Total Bandwidth 16QAM)

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|----------------------------------|--------------------|---------------------------------------|---------|---------------------------------|
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| 🔜 Keysig 🗶 RL | F | | | IS ORREC | | Cente Trig: | r Fre | SE:EXT eq: 3.69000 | 0000 | | ALIG | N AUTO | | | 1 Jul 16, 2019 None | F | requency |
|------------------|-------------------------|------------|---|-------------|------|----------------|---|----------------------------------|------|--------|--------|-----------------------|-------|---------|------------------------|-------------|-------------|
| PASS | Gat | e: LO | IF | Gain:Lo | w + | #Atte | | | | | | | Radio | Devi | ce: BTS | | |
| | | | | | | | | | | | | | | | | | |
| 10 dB/ | ماند | Ref 30.00 | dBm | | | | | | | | | | | | | | |
| | | Rei JU.UU | ubili | | | | | | | | | | | | | | |
| 20.0 | | | | | | | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | herrords, forgation addertifier, | | | ourly. | | | | | | Center Free |
| 10.0 | | | | | | | \square | | 4 | | | | | | | 3.69 | 90000000 GH |
| 0.00 | | | | | | | | | | | | | | | | | |
| -10.0 | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| -20.0 | | | | | | | | | | | | | | _ | | | |
| -30.0 | | | | | | | | | | | | | | | | | |
| -40.0 🂾 | *********************** | | and the second secon | | | | | | | | | and the second second | | | | | |
| -50.0 | | | | | | | | | | | | | | | ***** | | |
| -60.0 | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| Start | 3.59 G | lz | | | | | | | | | | | S | top | 3.74 GHz | | CF Ster |
| | | | | | | | | | | | | | | | | | 5.000000 MH |
| Spur | Range | Start Freq | Stop | Frea | RB\ | N | Fre | equency | | Ampli | itude | e | ΔLi | mit | | <u>Auto</u> | Mar |
| 1 | 1 | 3.5900 GHz | 3.630 | | | | | 25600000 | GHz | | | | -10.9 | | | | |
| 2 | 2 | 3.6300 GHz | 3.6350 | 0 GHz | 1.00 | 0 MHz | 3.6 | 34016667 | GHz | -35.62 | dBn | n | -22.6 | 2 dB | | | |
| 3 | 3 | 3.6350 GHz | 3.640 | 0 GHz | | | | 39925000 (| | | | | -3.04 | 0 dB | | | Freq Offse |
| 4 | 4 | 3.6400 GHz | 3.700 | 0 GHz | 820. | 0 kHz | 3.68 | 86400000 | GHz | 17.72 | dBm | | -7.27 | 6 dB | | | 0 H |
| 5 | 5 | 3.7000 GHz | 3.701 | 0 GHz | 820. | 0 kHz | 3.70 | 00021667 | GHz | -35.73 | dBn | n | -22.7 | 3 dB | | | |
| 6 | 6 | 3.7010 GHz | 3.710 | 0 GHz | 1.00 | 0 MHz | 3.70 | 03895000 | GHz | -36.93 | dBn | n | -23.9 | 3 dB | | | |
| 7 | 7 | 3.7100 GHz | 3.720 | 0 GHz | 1.00 | 0 MHz | 3.7 | 10350000 (| GHz | -39.29 | dBn | n | -14.2 | 9 dB | | | |
| 8 | 8 | 3.7200 GHz | 3.740 | 0 GHz | 1.00 | 0 MHz | 3.73 | 32866667 | GHz | -45.46 | dBn | n | -5.46 | 1 dB | | | |
| | | | | | | | | | | | | | | | | | |
| ISG | | | _ | _ | _ | _ | _ | _ | - | _ | _ | STATUS | 2 | _ | | _ | |
| | | | | | | _ | _ | | _ | | _ | JINIO | | _ | | | |

Plot 7-206. High Channel Edge Plot (60MHz Total Bandwidth 64QAM)



Plot 7-207. High Channel Edge Plot (60MHz Total Bandwidth 256QAM)

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7.9 Frequency Stability / Temperature Variation §2.1055

Test Overview and Limit

Frequency stability testing is performed in accordance with the guidelines of ANSI/TIA-603-E-2016. The frequency stability of the transmitter is measured by:

- a.) **Temperature:** The temperature is varied from -30°C to +60°C in 10°C increments using an environmental chamber.
- b.) **Primary Supply Voltage:** The primary supply voltage is varied from 85% to 115% of the nominal value for non hand-carried battery and AC powered equipment. For hand-carried, battery-powered equipment, primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacturer.

Test Procedure Used

ANSI/TIA-603-E-2016

Test Settings

- 1. The carrier frequency of the transmitter is measured at room temperature (20°C to provide a reference).
- 2. The equipment is turned on in a "standby" condition for fifteen minutes before applying power to the transmitter. Measurement of the carrier frequency of the transmitter is made within one minute after applying power to the transmitter.
- 3. Frequency measurements are made at 10°C intervals ranging from -30°C to +60°C. A period of at least one half-hour is provided to allow stabilization of the equipment at each temperature level.

Test Setup

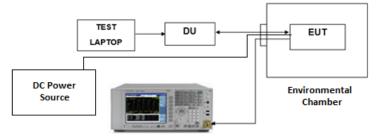
The EUT was connected via an RF cable to a spectrum analyzer with the EUT placed inside an environmental chamber.

Test Notes

A spectrum analyzer was used for this test with settings as follows:

- 1. Trace = Average RMS
- 2. Detector = Peak
- 3. RBW = 100kHz
- 4. VBW = 600 kHz

Corrections for the cable, connectors and attenuators was accounted for as an offset before measurement.





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Band 48 Frequency Stability Measurements

| OPERATING FREQUENCY: | 3,625,000,000 | Hz |
|----------------------|---------------|-----|
| REFERENCE VOLTAGE: | 48.00 | VDC |

| VOLTAGE (%) | POWER (VDC) | TEMP (°C) | FREQUENCY (Hz) | Freq. Dev. (Hz) | Deviation (%) |
|----------------|----------------|--------------|-------------------|--------------------|------------------|
| 100 % | 48.00 | + 20 (Ref) | 3,625,094,697 | 0 | 0.0000000 |
| 100 % | | - 30 | 3,624,684,912 | -315,088 | -0.0086918 |
| 100 % | | - 20 | 3,625,003,129 | 3,129 | 0.0000863 |
| 100 % | | - 10 | 3,624,784,870 | -215,130 | -0.0059345 |
| 100 % | 48.00 | 0 | 3,624,467,777 | -532,223 | -0.0146816 |
| 100 % | | + 10 | 3,625,101,593 | 101,593 | 0.0028025 |
| 100 % | | + 30 | 3,624,921,097 | -78,903 | -0.0021766 |
| 100 % | | + 40 | 3,625,077,677 | 77,677 | 0.0021427 |
| 100 % | | + 50 | 3,624,782,531 | -217,469 | -0.0059990 |
| 85 % | 40.80 | + 20 | 3,625,211,630 | 211,630 | 0.0058379 |
| 115 % | 55.20 | + 20 | 3,625,111,969 | 111,969 | 0.0030887 |

 Table 7-40. Frequency Stability Data (Band 48)

Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

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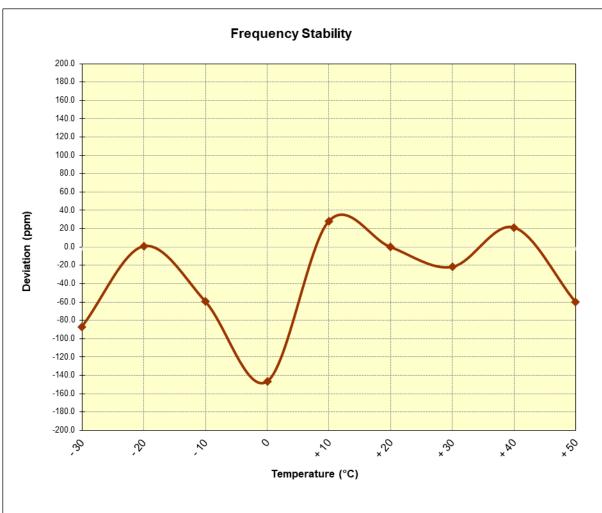


Figure 7-9. Frequency Stability Graph (Band 48)

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|----------------------------------|--------------------|---------------------------------------|---------|---------------------------------|--|
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8.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **Samsung Massive MIMO CBSD FCC ID: A3LMT6402-48A** complies with all of the Category B CBSD requirements of Part 96 of the FCC Rules.

| FCC ID: A3LMT6402-48A | | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Quality Manager |
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