

| Device | Type/Model | Serial Number | Manufacturer | Calibration Certificate |
|-------------------------------------|------------|-------------------------|--------------|----------------------------|
| SAR E-Field Probe | SSE2 | 27/13 EP184 | SATIMO | E |
| SAR E-Field Probe | SSE2 | 17/14 EP224 | SATIMO | K |
| IEEE REF Dipole 750 MHz | SID750 | 14/13 DIP 0G750- 229 | SATIMO | K |
| IEEE REF Dipole 835 MHz | SID835 | 47/12 DIP 0G835- 210 | SATIMO | K |
| IEEE REF Dipole 1800 MHz | SID1800 | 47/12 DIP 1G800- 212 | SATIMO | e |
| IEEE REF Dipole 1900 MHz | SID2450 | 47/12 DIP 1G900- 213 | SATIMO | K |
| Dosimetric E-field Probe | EX3DV4 | 3978 | SPEAG | ¢= |
| 2450MHz System Validation Dipole | D2450V2 | 937 | SPEAG | K |
| 5GHz System Validation Dipole | D5GHzv2 | 1164 | SPEAG | K |





Annex E. LTE CA setup description

As per FCC OET KDB 941225 D05A – Rel. 10 LTE SAR Test Guidance and KDB Inquiries, when carrier aggregation is limited to downlink only; i.e., there is no uplink carrier aggregation, uplink maximum output power (single carrier) is measured for the supported combinations of downlink carrier aggregation according to the frequency bands and channel bandwidths allowed for the uplink and downlink configuration combinations.

Uplink maximum output power is measured with downlink carrier aggregation active, using the channel with highest measured maximum output power when downlink carrier aggregation is inactive, to confirm that when downlink carrier aggregation is active uplink maximum output power remains within the specified tune-up tolerance limits and not more than 1/4 dB higher than the maximum output power measured when downlink carrier aggregation inactive.

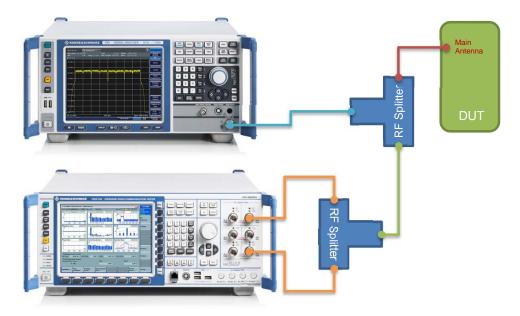
If the DUT meets this 1/4 dB limit, no SAR evaluation is required for Carrier Aggregation modes.

This Annex describes the setup used and provides spectrum screenshot samples for each CA band combination.

Image: Constraint of the second of the se

E.1 LTE CA Conducted Power Measurement Setup

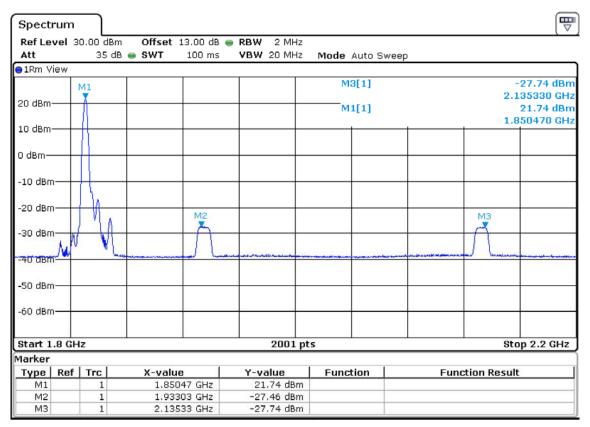
E.2 LTE CA Spectrum Measurement Setup



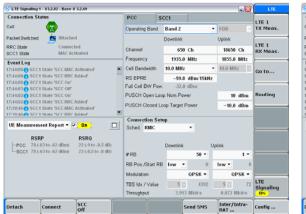


E.3 Sample Spectrums and CMW500 Configuration

E.3.1 CA_2A_4A



Primary Component Carrier Configuration







E.3.2 CA_2A_5A

| Spectru | m | | | | | | | | | | | | | | | | | ₩ |
|--------------|--------------|---------|-----|-----------------------|--------------------|---|-----|----------------|----------------|------|--------|-------|---|-----|---------|-------------------|------------------|----------------|
| Ref Leve | il 30 | 0.00 dB | m | Offset | 13.00 dB | | RBW | 2 MH | z | | | | | | | | | <u> </u> |
| Att | | 35 c | B 😑 | SWT | 100 ms | | VBW | 20 MH: | z NV | lode | Auto S | Sweep | | | | | | |
| ⊖1Rm Viev | N | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | М | 3[1] | | | | | M1 ¥8 8 | ·27.60 33.660 | I dBm) MHz |
| 20 dBm— | \top | | | | | | | | | M | 1[1] | | | | | | 21.39 5047 | dBm |
| 10 dBm— | + | | + | | | | | | | | | | | | | - | 1 | |
| 0 dBm | + | | + | | | | | | | | | | | | | + | | |
| -10 dBm— | - | | + | | | | | | | | | | | | | | | |
| -20 dBm- | + | | + | | | | | | | | | | | _ | | 1 | M | 2 |
| -30 dBm | + | | | | | _ | | | | | | | | _ | | | | |
| -40 dBm- | | | - | والمحد مريز طاعقيتكمه | | | | | , 4-1-4 | | | | | - | | 11 | | |
| | | | | | | | | | | | | | | | | | | |
| -50 dBm— | | | | | | | | | | | | | | | | | | |
| -60 dBm— | + | | + | | | _ | | - | | | | | | _ | | | | |
| | | | | | | | | | | | | | | | 2 | | | |
| Start 800 | 1.0 | MHz | | | | | | 2001 | pts | | | | | | | Sto | op 2.0 | GHz |
| Marker | | - 1 | | | | | | | | | | 1 | | | | | | |
| Type R M1 | ef | Trc 1 | | X-valu | | | Y-V | alue 39 dBr | _ | Func | tion | _ | F | unc | tion Re | esult | | |
| M1 M2 | _ | 1 | | | 047 GHz 303 GHz | | | .39 dBr | | | | - | | | | | | |
| M3 | | 1 | | | .66 MHz | | | .60 dBr | | | | | | | | | | |

Primary Component Carrier Configuration

Secondary Component Carrier Configuration

| S LTE Signaling 1 - V3.2.82 - Base V 3.2.69 | | | | - 🛙 | LTE | Strate Signaling | I - V3.2.82 - Base V | 3.2.60 | | | | |
|--|---------|------------------|-------------------|---------------------|-------------------|------------------|--|--------------------|------------------|----------|------------|-----|
| Connection Status | | PCC | SCC1 | | LTE 1 | Connection St | atus | | PCC | iCC1 | | |
| Cell 🙀 | | Operating Band | Band 2 | FDD 💌 | TX Meas. | Cell | | | Operating Band | Band 5 | | • |
| Packet Switched Attached | | | Downlink | Uplink | <u> </u> | Packet Switched | Attache | đ | | Downlink | | |
| RRC State Connected SCC1 State MAC Activated | | Channel | 650 Ch | 18650 Ch | LTE 1 RX Meas. | RRC State | Connect MAC Act | | Channel | 252 | 5 Ch | |
| SCC1 State MAC Activated Event Log | | Frequency | 1935.0 MHz | 1855.0 MHz | | SCC1 State | MAC AC | Iwared | Frequency | 881.5 | 5 MHz | |
| 17:39:46 SCC1 State 'SCC MAC Activated' | | Cell Bandwidth | 10.0 MHz | • 10.0 MHz | Go to | | I State 'SCC MAC | Activated" | Cell Bandwidth | 10.0 MHz | | • |
| 17:39:46 SCC1 State 'SCC RRC Added' 17:39:45 SCC1 State 'SCC On' | | RS EPRE | -59.8 dBm/15kHz | | | 17:39:46 SCC | State SCC RRC | Added" | RS EPRE | -59.8 | 8 dBm/15kH | 2 |
| 17:39:41 SCC1 State 'SCC Off' | | Full Cell BW Por | w32.0 dBm | | · · · · | 17:39:41 SCC | | | Full Cell BW Pov | r 32.) | 0 dBm | |
| 17:39:40 🕤 SCC1 State 'SCC On' | | PUSCH Open Lo | oop Nom.Power | 10 dBm | Routing | 17:39:40 🕤 SCC | | | SCC1 <-> PCC | Swap | | |
| 17:38:40 SCC1 State 'SCC RRC Added' 17:38:40 SCC1 State 'SCC MAC Activated' | | PUSCH Closed I | Loop Target Power | -10.0 dBm | | | I State "SCC RRC / I State "SCC MAC | | Connection Se | - | | |
| 17-38-40 A SCC1 State 'SCC RRC Added' | | Connection Se | | | | 17:30:40 A SOC | ESTATA SCC RRC | added" | Sched. RMC | oup , | | |
| UE Measurement Report • 🔽 On | | Sched RMC | roup + | | | UE Measurem | ent Report 🔹 🔽 | On 🗆 | Dented. Howe | | | |
| RSRP RSR0 | | | | | | RSF | HP | RSRO | PCC -> SCC1 | Сору | | |
| -PCC 79 (-62 to -61 dBm) 24 (-8 to -5 | | | Downlink I | Uplink | | -PCC 79 (- | 62 to -61 dBm) | 21 (-9.5 to -9 dB) | | Downlink | | |
| LSCC1 85 (-56 to -55 dBm) 26 (-7 to -1 | 6.5 dB) | #RB | 50 - | 1 - | <u> </u> | -SCC1 85 (- | 56 to -55 dBm) | 23 (-8.5 to -8 dB) | # RB | | 50 - | |
| | | RB Pos./Start R | B low • 0 | low • 0 | | | | | RB Pos./Start R | B low 💌 | 0 | |
| | | Modulation | OPSK • | OPSK - | | | | | Modulation | | OPSK 🕶 | |
| | | TBS Idx / Value | 5 4392 | 5 72 | LTE Signaling | | | | TBS Idx / Value | 5 | 4392 | |
| | | Throughput | 3.953 Mbit/s | 0.072 Mbit's | 0N | | | | Throughput | 3.953 B | dbit/s | |
| Detach Connect SCC Off | | | Send SMS | Inter/Intra- RAT | Config | Detach | Connect | SCC | | Se | nd SMS | Int |

LTE 1 TX Meas. Co to... Routing

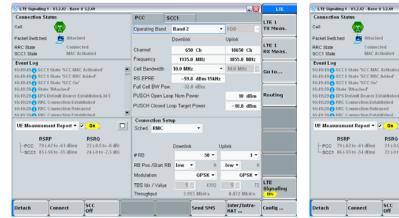
LTE

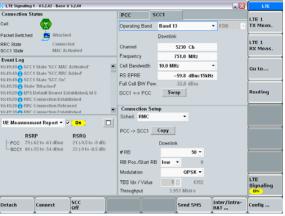


E.3.3 CA_2A_13A

| Spectru | n | | | | | | | | | | | ₩ |
|-----------|---------|------|--|--------------------|-------|----------------------|------|--------|------|------|------------|--------------------------|
| Ref Leve | 30.00 d | lBm | Offset | 13.00 dB | e RBW | / 2 MHz | | | | | | |
| Att | | dB 😑 | SWT | 100 ms | VBW | / 20 MHz | Mode | Auto S | weep | | | |
| ⊖1Rm View | | | | | | | | | | | | |
| | | | | | | | М | 3[1] | | | Mi | -27.18 dBm 52.950 MHz |
| 20 dBm— | | | | | | | м | 1[1] | | | | 20.65 dBm |
| 10 dBm | | | | | | | | | | | 1.0 | 350900 GHz |
| 0 dBm | | | | | _ | | | | | | | |
| -10 dBm— | | | | | _ | | | | | | | |
| -20 dBm— | | | | | _ | | | | | | | M2 |
| -30 dBm— | | | | | | | | | | | | |
| -40 dBm | | | and and a second se | | | | | | | | | |
| | | | | | | | | | | | | |
| -50 dBm— | | | | | | | | | | | | |
| -60 dBm— | | | | | | | í | | | 2 | | |
| | | | | | | | | | | | | |
| Start 700 | .0 MHz | | | | | 2001 p | ts | | | | St | op 2.0 GHz |
| Marker | | | | | | | | | | | | |
| | ef Trc | | X-valu | | | value | Func | tion | | Func | tion Resul | t |
| M1 M2 | 1 | | | 509 GHz 341 GHz | | 0.65 dBm 7.42 dBm | | | | | | |
| M2 M3 | 1 | | | 95 MHz | | 7.18 dBm | | | | | | |

Primary Component Carrier Configuration







E.3.4 CA_2A_17A

| Spectru | m | | | | | | | | | | | | | | | | ₩ |
|----------|-------------|----------|----------|--------|----------|------|----------|-----|------|--------|-------|------|-------|------|----------------|-------|----------|
| Ref Leve | i 30 |).00 dBm | | Offset | 13.00 dB | RBW | 2 MH | z | | | | | | | | | <u> </u> |
| Att | | 35 dB | • | SWT | 100 ms | VBW | 20 MH | z | Mode | Auto s | Sweep | | | | | | |
| ●1Rm Vie | N | | | | | | | | | | | | | | | | |
| | Τ | | | | | | | | M | 3[1] | | | | М | ī ² | 7.45 | dBm |
| 20 dBm— | + | | \vdash | | | | | | M | 1[1] | | | | | | | dBm |
| 10 dBm— | | | | | | | | | | -1-1 | | | | 1 | | |) GHz |
| | | | | | | | | | | | | | | | | | |
| 0 dBm— | + | | \vdash | | | | | | | | | | | | \parallel | | |
| -10 dBm- | \perp | | | | | | | | | | | | | | Ц | | |
| | | | | | | | | | | | | | | | | | |
| -20 dBm- | | | | | | | | | | | | | | | l | М | 2 |
| -30 dBm- | + | | + | | | | | | | | | | - | | + | | 1 |
| | _ | | | | | | | | | | | | | M | | | |
| -40 dBm- | | | | | | | | | | | | | | | | | |
| -50 dBm- | + | | - | | 6 | | | | 8 | | | | - | | + | | - |
| 60 dBm | | | | | | | | | | | | | | | | | |
| -60 dBm- | | | | | | | | | | | | | | | | | |
| Start 70 |).O N | /IHz | | | | 1 | 2001 | pts | | | | | - | St | top | 0 2.0 | GHz |
| Marker | | | | | | | | | | | | | | | | | |
| Type F | ef | Trc | | X-valu | | | alue | | Func | tion | | Fun | ction | Resu | lt | | |
| M1 | | 1 | | | 509 GHz | | L.54 dBi | | | | | | | | | | |
| M2 | _ | 1 | | | 341 GHz | | 7.45 dBi | | | | | | | | | | |
| M3 | | 1 | | 742 | .55 MHz | -27 | 7.45 dBi | m | | | | | | | | | |

Primary Component Carrier Configuration

Secondary Component Carrier Configuration

| S LTE Signaling 1 - V3.2.82 - Base V 3.2.60 | | | - 🔀 | LTE | 😽 LTE Signaling 1 - V3.2.82 - B | ase V 3.2.60 | | |
|--|------------------|------------------|---------------------|-------------------|--|-------------------------|------------------|----------------|
| Connection Status | PCC S | CC1 | | LTE 1 | Connection Status | | PCC | iCC1 |
| Cell 🙀 | Operating Band | Band 2 🔹 | FDD 💌 | TX Meas. | Cell 🙀 | | Operating Band | Band 17 |
| Packet Switched Attached | | Downlink | Uplink | | Packet Switched 📩 All | ached | | Downlink |
| RRC State Connected SCC1 State MAC Activated | Channel | 650 Ch | 18650 Ch | LTE 1 RX Meas. | | nnected IC Activated | Channel | 5790 Ch |
| Event Log | Frequency | 1935.0 MHz | 1855.0 MHz | | Event Log | C MCMMared | Frequency | 740.0 MHz |
| 16:53:39 3 SCC1 State 'SCC MAC Activated' | Cell Bandwidth | 10.0 MHz - | 10.0 MHz | Go to | 16:53:39 3 SCC1 State 'SCC | | Cell Bandwidth | 10.0 MHz |
| 16:53:39 SCC1 State 'SCC RRC Added' 16:53:39 SCC1 State 'SCC On' | RS EPRE | -59.8 dBm/15kHz | | | 16:53:39 SCC1 State 'SCC 16:53:39 SCC1 State 'SCC | | RS EPRE | -59.8 dBm/15kb |
| 16:53:04 0 SCC1 State 'SCC Off' | Full Cell BW Pow | | | | 16:53:04 👩 SCC1 State 'SCC | Off. | Full Cell BW Pow | |
| 16:53:04 SCC1 State 'SCC On' 16:53:04 SCC1 State 'SCC RRC Added' | PUSCH Open Loc | | 10 dBm | Routing | 16:53:04 SCC1 State 'SCC 16:53:04 SCC1 State 'SCC | | SCC1 <-> PCC | Swap |
| 16:49:49 1 SCC1 State "SCC MAC Activated" | PUSCH Closed Li | oop Target Power | -10.0 dBm | | 16:49:49 🕤 SCC1 State 'SCC | MAC Activated | Connection Set | hun |
| 18-19-19 SCC1 State 'SCC RRC Added' | Connection Set | up. | | | 18-19-19 A SCC1 State 'SCC | RRC Added" | Sched. RMC | - - |
| UE Measurement Report • 🔽 On | Sched. RMC | * | | <u> </u> | UE Measurement Report | • • On 🗌 | | |
| RSRP RSRQ | | | | | RSRP | RSRQ | PCC -> SCC1 | Copy |
| PCC 79 (-62 to -61 dBm) 22 (-9 to -8.5 dB) -8001 86 (-55 to -54 dBm) 24 (-8 to -7.5 dB) | | Downlink Ug | plink | | PCC 79 (-62 to -61 dB) SCC1 86 (-55 to -54 dB) | | | Downlink |
| SCC1 86 (-55 to -54 dBm) 24 (-8 to -7.5 dB) | # RB | 50 - | 1 - | | -SCC1 80 (-55 t0 -54 dB | III) 21 (-3.5 to -9 dB) | #R8 | 50 - |
| | RB Pos./Start RE | B low • 0 | low 💌 0 | | | | RB Pos./Start RB | B low 💌 0 |
| | Modulation | OPSK • | OPSK • | | | | Modulation | OPSK - |
| | TBS Idx / Value | 5 4392 | 5 72 | Signaling | | | TBS Idx / Value | 5 4392 |
| | Throughput | 3.953 Mbit/s | 0.072 Mbit/s | 0N | | | Throughput | 3.953 Mbit/s |
| Detach Connect SCC Off | Ì | Send SMS | Inter/Intra- RAT | Config | Detach Connect | SCC | | Send SMS |

LTE 1 TX Meas.

> LTE 1 RX Meas. Go to... Routing

> > LTE

Inter/Intra RAT ...

FDD



E.3.5 CA_2A_29A

| Spect | rum | | | | | | |
|---------|-------|----------|------------------|----------------------|--------------|------|--|
| Ref Le | vel 3 | 0.00 dBm | n Offset 13.00 d | 3 👄 RBW 2 MHz | | | · · · · · · · · · · · · · · · · · · · |
| Att | | 35 dE | 3 👄 SWT 👘 100 m | s VBW 20 MHz | Mode Auto St | weep | |
| ∣o1Rm V | /iew | | | | | | |
| | | | | | M3[1] | | MI ⁻ 26.61 dBm ▼21.760 MHz |
| 20 dBm | | | | | M1[1] | | 21.26 dBm |
| | | | | | | | 11850900 GHz |
| 10 dBm | | | | | | | |
| | | | | | | | |
| 0 dBm- | | | | | | | |
| | | | | | | | |
| -10 dBn | n—— | | | | | | |
| | | | | | | | |
| _20 dBn | n—+ | | | | | | M2 |
| -O dBn | | | | | | | X |
| -90 dBn | n | | | | | | |
| | | | | | | | M Kennel Lamon |
| -40 dBn | n | | | | | | |
| | | | | | | | |
| -50 dBn | n | | | | | | |
| | | | | | | | |
| -60 dBn | n | | | | | | |
| | | | | | | | |
| Start 7 | 00.0 | MHz | | 2001 pt | ts | | Stop 2.0 GHz |
| Marker | | | | | | | |
| Type | Ref | Trc | X-value | Y-value | Function | Fu | inction Result |
| M1 | | 1 | 1.8509 GHz | 21.26 dBm | | | |
| M2 | | 1 | 1.93341 GHz | -27.70 dBm | | | |
| MЗ | | 1 | 721.76 MHz | -26.61 dBm | | | |

Primary Component Carrier Configuration





E.3.6 CA_4A_4A

| Spectrur | n | | | | | | | | |
|-------------|----------|--------------|----------|------------|--------|------------------------|------|-------------|------------------------|
| Ref Level | 30.00 de | m Offset | 13.00 dB | RBW 2 MHz | | | | | ` |
| Att | 35 (| dB 👄 SWT | 100 ms | VBW 20 MHz | Mode 4 | Auto Sweep | | | |
| ●1Rm View | | | | | | | | | |
| | 1 | M1 | | | МЗ | [1] | | | 27.30 dBm 47680 GHz |
| 20 dBm | | | | | M1 | [1] | | | 22.25 dBm |
| 10 dBm | | \mathbb{H} | | | | | | 1.7 | 10490 GHz |
| 0 dBm | | | | | | | | | |
| -10 dBm— | | 11 | | | | | | | |
| -20 dBm— | | | | | | | | M2 | мэ |
| -30 dBm— | | - M | | | | | | Â | ń – |
| 40 dBm | N | 1 | | | | //. 8/.11 | | لسبا استن | Los martines |
| -50 dBm— | | | - | | | | | | |
| -60 dBm— | | | - | | | | | | |
| Start 1.6 (| GHz | | | 2001 p | ts | | | Sto | p 2.2 GHz |
| Marker | | | | | | 1.217 | | | |
| Type Re | f Trc | X-valı | | Y-value | Funct | ion | Func | tion Result | |
| M1 | 1 | | 049 GHz | 22.25 dBm | | | | | |
| M2 | 1 | | 529 GHz | -26.94 dBm | | | | | |
| M3 | 1 | 2.14 | 768 GHz | -27.30 dBm | | | | | |

Primary Component Carrier Configuration

| 😽 LTE Signal | ing 1 - V3.2.82 - Base V 3.2.69 | | | - 🛛 | LTE | Sy LTE Signaling 1 | - V3.2.82 - Base V | 7 3.2.69 | | | - 🔀 | |
|-------------------------|--|------------------|-------------------|-------------------------|-------------------|--------------------------------|--------------------|----------------------|------------------------------------|---------------|---------------------|-------------|
| Connection | Status | PCC | SCC1 | | LTE 1 | Connection Sta | atus | | PCC S | CC1 | | LTE |
| Cell | | Operating Band | Band 4 | 💌 FDD 📃 | TX Meas. | Cell | | | Operating Band | Band 4 | • FDD 🗸 | TX M |
| Packet Switc | hed 🔁 Attached | | Downlink | Uplink | | Packet Switched | 📩 Attache | d | | Downlink | | |
| RRC State SCC1 State | Connected MAC Activated | Channel | 2000 Ch | 20000 Ch | LTE 1 RX Meas. | RRC State SCC1 State | Connect MAC Act | | Channel | 2300 Ch | | LTE RX N |
| Event Log | mile Activity | Frequency | 2115.0 MHz | 1715.0 MHz | | Event Log | max av | uruicu | Frequency | 2145.0 MHz | | |
| 17:31:27 6 9 | CC1 State 'SCC MAC Activated' | Cell Bandwidth | 10.0 MHz | ▼ 10.0 MHz 🔄 | Go to | 17:31:27 6 SCC1 | | | Cell Bandwidth | 10.0 MHz | - | Got |
| | CC1 State 'SCC RRC Added' CC1 State 'SCC On' | RS EPRE | -59.8 dBm | | | 17:31:27 SCC1 17:31:27 SCC1 | | Added" | RS EPRE | -59.8 dBm/151 | Hz | |
| | ledirection Successful | Full Cell BW Pov | | | | 17:31:22 () Redir | ection Successfu | | Full Cell BW Pow | | | |
| | racking Area Update Received IRC Connection Established | PUSCH Open Lo | oop Nom.Power | 10 dBm | Routing | 17:31:21 Track | | | SCC1 <-> PCC | Swap | | Rout |
| 17:31:21 1 | IRC Connection Released | PUSCH Closed L | Loop Target Power | -10.0 dBm | <u> </u> | 17:31:21 (RRC (| Connection Relea | | Connection Set | | | |
| 17:31:20 61 | tedirection Start | Connection Se | stuo | | | 17:31:20 Redir | ection Start | | Sched. RMC | • | | |
| UE Measu | rement Report 👻 🔽 🔲 | Sched. RMC | | | L | UE Measureme | ent Report 🝷 🔽 | On 🗌 | | | | |
| | RSRP RSRQ | | | | | RSR | P | RSRO | PCC -> SCC1 | Сору | | |
| | 83 (-58 to -57 dBm) 20 (-10 to -9.5 dB) | | Downlink | Uplink | | | 58 to -57 dBm) | 19 (-10.5 to -10 dB) | | Downlink | | |
| -SCC1 | 37 (-104 to -103 dBm) 0 (< -19.5 dB) | # R8 | : | 50 - 1 - | | -SCC1 37 (-1 | 104 to -103 dBm) | 0 (< -19.5 dB) | # R8 | 50 - | | |
| | | RB Pos./Start R | B low • | 0 low = 0 | | | | | RB Pos./Start RB | low • 0 | | |
| | | Modulation | OPS | SK • OPSK • | | | | | Modulation | QPSK - | | |
| | | TBS Idx / Value | 5 | 4392 5 72 | LTE Signaling | | | | TBS Idx / Value | 5 4392 | | LTE Sign |
| | | Throughput | 3.953 Mbit | tis 0.072 Mbitis | ON | | | | Throughput | 3.953 Mbit/s | | 0N |
| Detach | Connect SCC Off | | Send 1 | SMS Inter/Intra- RAT | Config | Detach | Connect | scc off | | Send SMS | Inter/Intra- RAT | Confi |
| Decuca | off | | Selle | RAT | coming | Detter | connect | Off | | Sene Sins | RAT | |



E.3.7 CA_4A_5A

| Spectrun | n | | | | | | | | | | ₩ |
|---------------|-----------|----------------|------------|---------------------------|--------|------|-------------------|----------|----------------|-------------|------------------------|
| Ref Level | 30.00 dBi | m Offset | 13.00 dB (| RBW 21 | ИHz | | | | | | , |
| Att | 35 d | B 👄 SWT | 100 ms | VBW 20 M | ИHz | Mode | Auto S | Gweep | | | |
| ●1Rm View | | | | | | | | | | | |
| | | | | | | M | 3[1] _M | 1 | | | 27.65 dBm 9.410 MHz |
| 20 dBm | | | | | + | M | 1[1] | | | | 21.13 dBm |
| 10 dBm | | | | | | | | | | | 10490 GHz |
| 10 ubiii | | | | | | | | | | | |
| 0 dBm | | | | | + | | | | | | |
| -10 dBm— | | | | | + | | | | | | |
| -20 dBm— | | | | | + | | | | | | |
| M3 | | | | | | | | | | | M2 X |
| -30 dBm | | | | | | , | | | | | |
| -40 dBm | | | | | | | للمعيد | <u> </u> | | | |
| -50 dBm— | | | | | + | 2 | | | | | |
| -60 dBm | | | | _ | + | 2 | | | | | |
| | | | | | | | | | | | |
| Start 800. | 0 MHz | | | 200 | 01 pts | 5 | | | | Sto | p 2.2 GHz |
| Marker | f Tun I | V | - 1 | V | - 1 | E.u. | | 1 | F -1000 | tion Result | |
| Type Re M1 | 1 | X-valu 1 71 | 049 GHz | <u>Y-value</u> 21.13 (| IBm | Func | tion | | Func | cion Result | |
| M2 | 1 | | 529 GHz | -27.39 (| | | | | | | |
| M3 | 1 | 879 | .41 MHz | -27.65 (| dBm | | | | | | |

Primary Component Carrier Configuration

| S LTE Signaling 1 - V3.2.82 - Base V 3.2.69 | | - 🔀 | LTE | S LTE Signaling 1 - V3.2.82 - Base V 3.2.69 | | LTC |
|---|-------------------------------|-------------------|-------------------|---|--------------------------------|------------------|
| Connection Status | PCC SCC1 | | LTE 1 | Connection Status | PCC SCC1 | LTE 1 |
| Cell ญ | Operating Band Band 4 | 💌 FDD 🖂 | TX Meas. | Cell 🙀 | Operating Band Band 5 FDD | TX Meas |
| Packet Switched 🔁 Attached | Downlink | Uplink | | Packet Switched Attached | Downlink | |
| RRC State Connected SCC1 State MAC Activated | Channel 2000 Ch | 20000 Ch | LTE 1 RX Meas. | RRC State Connected SCC1 State MAC Activated | Channel 2525 Ch | LTE 1 RX Meas |
| Event Log | Frequency 2115.0 MH | z 1715.0 MHz | | | Frequency 881.5 MHz | |
| 17:08:46 SCC1 State 'SCC MAC Activated' | Cell Bandwidth 10.0 MHz | • 10.0 MHz 2 | Go to | | Cell Bandwidth 10.0 MHz - | Go to |
| 17:00:46 0 SCC1 State 'SCC RRC Added' 17:00:46 0 SCC1 State 'SCC On' | RS EPRE -59.8 dBr | n/15kHz | 001011 | 17:00:46 SCC1 State 'SCC RRC Added' 17:00:46 SCC1 State 'SCC On' | RS EPRE -59.8 dBm/15kHz | |
| 17:00:09 1 SCC1 State 'SCC Off' | Full Cell BW Pow32.0 dBm | n | | 17:00:09 1 SCC1 State 'SCC Off' | Full Cell BW Pow32.0 dBm | |
| 17:08:09 CC1 State 'SCC On' 17:08:09 SCC1 State 'SCC RRC Added' | PUSCH Open Loop Nom. Power | 10 dBm | Routing | 17:08:09 CC1 State 'SCC On' 17:08:09 SCC1 State 'SCC RRC Added' | SCC1 <> PCC Swap | Routing |
| 17:04:50 SCC1 State SCC MAC Activated | PUSCH Closed Loop Target Powe | r -10.0 dBm | | 17:04:50 SCC1 State 'SCC MAC Activated' | Annual and a start | |
| 17:04:50 A SCC1 State SCC RRC Added | Connection Setup | | | 17-04-50 A SEC 1 State "SEC RRC Added" | Connection Setup Sched, RMC | |
| UE Measurement Report 👻 On 📃 | Sched. RMC * | | | UE Measurement Report 👻 🔽 🔲 | Sched. Nunc | |
| RSRP RSR0 | ounea. Parts | | | RSRP RSR0 | PCC -> SCC1 Copy | |
| PCC 78 (-63 to -62 dBm) 23 (-8.5 to -8 dB) | Downlink | Uplink | | PCC 78 (-63 to -62 dBm) 22 (-9 to -8.5 dB) | Dawnlink | |
| SCC1 85 (-56 to -55 dBm) 23 (-8.5 to -8 dB) | # R8 | 50 - 1 - | | SCC1 85 (-56 to -55 dBm) 23 (-8.5 to -8 dB) | #RB 50 - | |
| | RB Pos./Start RB low • | 0 low = 0 | | | RB Pos./Start RB low • 0 | |
| | Modulation OP | SK • OPSK • | | | Modulation QPSK - | |
| | TBS ldx / Value 5 | 4392 5 72 | LTE Signaling | | TBS ldx / Value 5 4392 | LTE Signaline |
| | Throughput 3.953 Mb | itis 0.072 Mbitis | | | Throughput 3.953 Mbit's | |
| Detach Connect SCC Off | Send | SMS | Config | Detach Connect Off | Send SMS Inter/Intra- RAT | Config |
| | | | | | | |



E.3.8 CA_4A_13A

| Spectrun | n | | | | | | | | | | ₽ |
|------------|-----------|----------|------------|---------------|---|------|--------|--------|--------|------------|------------------------|
| Ref Level | 30.00 dBr | n Offset | 13.00 dB (| RBW 2 | MHz | | | | | | |
| Att | 35 di | B 👄 SWT | 100 ms | VBW 20 | MHz | Mode | Auto S | weep | | | |
| ●1Rm View | | | | | | | | | | | |
| 20 dBm | | | | | | | | M1 | | 75 | 27.40 dBm 2.100 MHz |
| 20 ubiii | | | | | | M | 1[1] | | | | 21.96 dBm |
| 10 dBm | | | | | + | | | | | 1.7 | 10500 GHz |
| 0 dBm | | | | | + | | | | | | |
| -10 dBm— | | | | | + | | | | | | |
| -20 dBm | | | | _ | + | | | | | | M2 |
| -30 dBm | | | - | | + | | | | | | -1 |
| | a | | | | | | | d'Upon | | | الم |
| -50 dBm— | | | - | _ | _ | | | | | | |
| -60 dBm— | | | _ | _ | _ | | | | | | |
| | | | | | | | | | | | |
| Start 700. | UMHZ | | | 20 | 01 pts | 5 | | | | Sto | p 2.2 GHz |
| Marker | f Trc | X-valu | - I | Y-value | | Func | tion | r | Euro-t | ion Result | 1 |
| Type Re | 1 | | 105 GHz | 21.96 | | Func | cion | | Funct | ion Result | |
| M2 | 1 | | 153 GHz | -27.30 | | | | | | | |
| МЗ | 1 | | 2.1 MHz | -27.40 | and the second se | | | | | | |

Primary Component Carrier Configuration

| S LTE Signaling 1 - V3.2.82 - Base V 3.2.69 | | | - 🛛 | LTE | LTE Signaling 1 - V3.2.82 - Base V 3.2.69 | | | | | | | | | |
|--|-----------------------------|-----------------|---------------------|-------------------|---|-----------------|-----------------|-------------|-----------------|--|--|--|--|--|
| Connection Status | PCC | SCC1 | | LTE 1 | Connection Status | PCC | SCC1 | | LTE 1 | | | | | |
| Cell 🙀 | Operating Band | Band 4 | • FDD 🖂 | TX Meas. | Cell 🙀 | Operating Band | Band 13 • | FDD 🗵 | TX Mea | | | | | |
| PacketSwitched Attached | | Downlink | Uplink | | Packet Switched 🔁 Attached | | Downlink | | | | | | | |
| RRC State Connected SCC1 State MAC Activated | Channel | 2000 Ch | 20000 Ch | LTE 1 RX Meas. | RRC State Connected SCC1 State MAC Activated | Channel | 5230 Ch | | LTE 1 RX Mea | | | | | |
| Event Log | Frequency | 2115.0 MHz | 1715.0 MHz | | EventLog | Frequency | 751.0 MHz | | <u> </u> | | | | | |
| 17:13:03 SCC1 State 'SCC MAC Activated' | Cell Bandwidth | 10.0 MHz | • 10.0 MHz | Go to | | Cell Bandwidth | 10.0 MHz - | | Go to | | | | | |
| 17:13:03 CC1 State 'SCC RRC Added' 17:13:03 SCC1 State 'SCC On' | RS EPRE | -59.8 dBm/15kHz | | | 17:13:03 () SCC1 State 'SCC RRC Added' 17:13:03 () SCC1 State 'SCC On' | RS EPRE | -59.8 dBm/15kHz | | | | | | | |
| 17:12:43 SCC1 State 'SCC Off' | Full Cell BW Po | w32.0 dBm | | | 17:12:43 SCC1 State SCC Off | Full Cell BW Po | w32.0 dBm | | | | | | | |
| 17:12:43 () SCC1 State 'SCC On' | PUSCH Open Li | oop Nom.Power | 10 dBm | Routing | 17:12:43 🔿 SCC1 State 'SCC On' | SCC1 <-> PCC | Swap | | Routing | | | | | |
| 17:12:43 SCC1 State 'SCC RRC Added' 17:02:46 SCC1 State 'SCC MAC Activated' PUSCH Closed Loop Target Power -10.0 | | | | | 17:12:43 CC T State 'SCC RRC Added' 17:01:46 SCC 1 State 'SCC MC Activated' | | | | | | | | | |
| 17:02:46 SCC1 State SCC RRC Added | | | | | 1748-46 SCC1 State SCC RRC Added Connection Setup | | | | | | | | | |
| UE Measurement Report 👻 🖸 🗖 🗖 | Connection Se Sched. RMC | etup - | | | UE Measurement Report - 🔽 On | Sched. RMC | • | | | | | | | |
| | Sched. PORC | <u>.</u> | | | | PCC -> SCC1 | Сору | | | | | | | |
| RSRP RSR0 PCC 78 (-63 to -62 dBm) 22 (-9 to -8.5 dB) | | Downlink U | Jolink | | RSRP RSRQ PCC 78 (-63 to -62 dBm) 22 (-9 to -8.5 dB) | | Downlink | | | | | | | |
| SCC1 86 (-55 to -54 dBm) 25 (-7.5 to -7 dB) | #88 | 50 - | 1 - | <u> </u> | SCC1 86 (-55 to -54 dBm) 23 (-8.5 to -8 dB) | # R8 | 50 - | | | | | | | |
| | RB Pos./Start R | B low • 0 | low • 0 | | | RB Pos./Start R | B low • 0 | | | | | | | |
| | Modulation | OPSK • | OPSK • | | | Modulation | OPSK - | | | | | | | |
| | TBS Idx / Value | | 5 72 | LTE | | TBS Idx / Value | 5 4392 | | LTE | | | | | |
| | Throughput | 3.953 Mbit/s | 0.072 Mbit's | Signaling | | Throughput | 3.953 Mbit/s | | Signalin | | | | | |
| The Terry T | | Y | Y | | Y You Y | | X | | <u> </u> | | | | | |
| Detach Connect Off | | Send SMS | Inter/Intra- RAT | Config | Detach Connect SCC Off | | | nter/Intra- | Config | | | | | |
| | | A | * | * · · · · · | | | A A | | | | | | | |



E.3.9 CA_4A_17A

| Spectrur | n | | | | | | | | | | | | | |
|------------|---------|------|--------|----------|-----|----------|----------|---------------------|---------|------------------------------|-------------|------------------------|--|--|
| Ref Level | 30.00 d | lBm | Offset | 13.00 dB | RBW | 2 MHz | | | | | | | | |
| Att | 35 | dB 😑 | SWT | 100 ms | VBW | 20 MHz | Mode | Auto S ¹ | weep | | | | | |
| ●1Rm View | | | | | | | | | | | | | | |
| 20 dBm | | | | | | | | | м1 Т | | 74 | 27.34 dBm 1.600 MHz | | |
| | | | | | | | IVI | 1[1] | | 20.98 dBr 1.710500 GH | | | | |
| 10 dBm | | | | | | | | | | | 1.7 | 10300 GHz | | |
| 0 dBm | | | | | | | | | | | | | | |
| -10 dBm— | | | | | | | | | | | | | | |
| -20 dBm | | | | | | | | | | | | M2 | | |
| -30 dBm— | | | | | | | þ | | | | | | | |
| -40 aBm- | , | | ***** | | | | | | d'ila | and the last second spectrum | | line | | |
| -50 dBm— | | | | | | | | | | | | 5 | | |
| -60 dBm | | - | | | _ | | - | | | | | 6 | | |
| | | | | | | | | | | | | | | |
| Start 700. | 0 MHz | | | | | 2001 pt | ts | | | | Sto | p 2.2 GHz | | |
| Marker | | | | 22 | | | | | | | | | | |
| Type Re | | | X-valu | | | alue | Function | | | Fund | tion Result | | | |
| M1 | 1 | | | 105 GHz | |).98 dBm | | | | | | | | |
| M2 | 1 | | | 153 GHz | | 7.30 dBm | | | | | | | | |
| МЗ | 1 | | 74 | 1.6 MHz | -27 | 7.34 dBm | 1 | | | | | | | |

Primary Component Carrier Configuration

| S LTE Signaling 1 | LTE Signaling 1 - V3.2.82 - Base V 3.2.69 | | | | | | | | LTE Signaling 1 - V3.2.82 - Base V 3.2.69 | | | | | | | | |
|---|---|--------------------|------------------|----------|-----------|---|-------------------|---|---|------------------|--------------------|-----------------|----------|--------------------------|---------------------|---------------|--|
| Connection St | atus | | PCC 5 | SCC1 | | | LTE 1 | 1 1 | Connection St | atus | | PCC | SCC1 | | | LTE 1 | |
| Cell | | | Operating Band | Band 4 | - | FDD 💌 | TX Meas. | | Cell | | | Operating Band | Band 17 | | FDD 💌 | TX Me | |
| Packet Switched | Attached | 1 | | Downlink | | Uplink | | | Packet Switched | 📩 Attach | bd | | Downlink | | | | |
| RRC State SCC1 State | Connects MAC Act | | Channel | 2000 0 | h | 20000 Ch | LTE 1 RX Meas. | | RRC State SCC1 State | Connec MAC Ar | | Channel | 57 | '90 Ch | | LTE 1 RX M | |
| Event Log | mas act | THE CO | Frequency | 2115.0 M | AHz | 1715.0 MHz | ļ | | Event Log | mass an | | Frequency | 74 | 0.0 MHz | | | |
| 17:15:20 SCC1 | 1 State 'SCC MAC J | | Cell Bandwidth | 10.0 MHz | - | 10.0 MHz / | Go to | | 17:15:20 SCC1 | | | Cell Bandwidth | 10.0 MHz | | • | Go to | |
| 17:15:20 SCC1 | 1 State 'SCC RRC J 1 State 'SCC Ox' | \dded' | RS EPRE | | lBm/15kHz | | | | 17:15:20 3 SCC1 | | Added | RS EPRE | | 9.8 dBm/15kHz 2.0 dBm | | 00.00 | |
| 17:15:12 SCC1 | | | Full Cell BW Pov | | | | | 17:15:12 SCC1 State SCC Off | | | | Full Cell BW Po | | | | | |
| 17:15:12() SCC1 State 'SCC On' PUSCH Open Loop Nom.Power 17:15:11() SCC1 State 'SCC RRC Added' | | | | 10 dBm | Routing | | | 17:15:12 1 SCC1 State 'SCC On' 17:15:11 SCC1 State 'SCC RRC Added' | | | Swap | | | Routin | | | |
| 17:13:03 SCC1 State SCC MAC Activated PUSCH Closed Loop Target Power -10.0 dBm | | | | | | 17:13:03 0 SCC1 State 'SCC MAC Activated' | | | | | | | | | | | |
| 17-13-03-6 SCC1 | 1 State 'SCC RRC # | lded" | Connection Se | | | | | 17-1903 SCC1 State SCC BRC &dater Sched RMC | | | | | | | | | |
| UE Measurem | ient Report 🔹 🖙 | On 🗆 | Sched. RMC | | | | | | UE Measurem | ent Report 🔹 🕅 | on 🗆 | | | | | | |
| RSR | op. | RSRO | | | | | | 1 | RSR | D | RSRO | PCC -> SCC1 | Сору | | | | |
| -PCC 78 (- | 63 to -62 dBm) | 21 (-9.5 to -9 dB) | | Downlink | Up | plink | | | -PCC 78 (- | 53 to -62 dBm) | 22 (-9 to -8.5 dB) | | Downlink | | | | |
| -SCC1 86 (- | 55 to -54 dBm) | 22 (-9 to -8.5 dB) | # R8 | | 50 - | 1 - | | | -SCC1 86 (- | 55 to -54 dBm) | 24 (-8 to -7.5 dB) | # R8 | | 50 - | | | |
| | | | RB Pos./Start R | B low • | 0 | low • 0 | | | | | | RB Pos./Start P | RB low • | 0 | | | |
| | | | Modulation | (| OPSK • | OPSK • | | | | | | Modulation | | QPSK • | | | |
| | | | TBS Idx / Value | 5 | 4392 | 5 72 | LTE Signaling | | | | | TBS Idx / Value | 5 | 4392 | | LTE Signa | |
| | | | Throughput | 3.953 1 | Mbit/s | 0.072 Mbit/s | | | | | | Throughput | 3.953 | Mbit's | | ON | |
| Detach | Connect | scc off | | Se | nd SMS | Inter/Intra- RAT | Config | | Detach | Connect | scc off | | s | | Inter/Intra- RAT | Config | |
| | | | | | | | | | | | | | | | | | |



E.3.10 CA_4A_29A

| Spectrum | | | | | | | | | | | |
|-------------------------------|-------|-----------------------------------|-------------------------|--------------|--|--------------------------------------|--|--|--|--|--|
| Ref Level 🗄 | | Offset 13.00 dB | | | | | | | | | |
| Att | 35 dB | 😑 SWT 100 ms | 5 VBW 20 MHz | Mode Auto Sv | veep | | | | | | |
| ●1Rm View | | | | | | | | | | | |
| | | | | M3[1] | M1 | -26.60 dBm | | | | | |
| 20 dBm | | | | M1[1] | Ţ | 721.360 MHz 21.25 dBm | | | | | |
| | | | | M1[1] | | 21.25 dBm 1.710500 GHz | | | | | |
| 10 dBm | | | | | <u> </u> | | | | | | |
| | | | | | | | | | | | |
| 0 dBm | | | | | | | | | | | |
| -10 dBm | | | | | | | | | | | |
| -10 aBm | | | | | | | | | | | |
| -20 dBm | | | | | | | | | | | |
| -20 dBm -30 dBm -40 dBm | | | | | | M2 | | | | | |
| -30 dBm | | | | | | | | | | | |
| | | | | 1 | 11 | | | | | | |
| -40 dBm | | Construction of the second second | | | her ward and the second | the second second second between the | | | | | |
| | | | | | | | | | | | |
| -50 dBm | | | | | | | | | | | |
| CO dDas | | | | | | | | | | | |
| -60 dBm | | | | | | | | | | | |
| | | | | | | | | | | | |
| Start 700.0 | MHz | | 2001 pt | s | | Stop 2.2 GHz | | | | | |
| Marker | | | | | | | | | | | |
| Type Ref | | X-value | Y-value | Function | Fur | nction Result | | | | | |
| M1 M2 | 1 | 1.7105 GHz 2.1153 GHz | 21.25 dBm -27.30 dBm | | 1 | | | | | | |
| M2 M3 | 1 | 721.36 MHz | -27.30 dBm | | | | | | | | |

Primary Component Carrier Configuration

| LTE Signaling 1 - V3.2.82 - Base V 3.2.69 | | | | | | LTE | LTE Signaling 1 - V3.2.82 - Base V 3.2.69 | | | | | | | | |
|--|---------------|-----------------|-----------|--------------|---------------------|-------------------|---|--|------------------------|----------------------------|----------|----------|---------------------|-------------------|--|
| Connection Status | | PCC | SCC1 | | | LTE 1 | Connection St | atus | | PCC | SCC1 | | | LTE 1 | |
| Cell 🙀 | | Operating Band | Band 4 | | • FDD 🛛 | TX Meas. | Cell | | | Operating Band | Band 29 | | FDD 🖂 | TX Meas. | |
| Packet Switched Attached | | | Downlink | | Uplink | | Packet Switched | Attache | 1 | | Downlink | | | | |
| RRC State Connected SCC1 State MAC Activated | | Channel | 200 | 0 Ch | 20000 Ch | LTE 1 RX Meas. | RRC State SCC1 State | Connect MAC Act | | Channel | 9 | 715 Ch | | LTE 1 RX Meas. | |
| Event Log | | Frequency | 2115. | 0 MHz | 1715.0 MHz | | Event Log | marce pres | THE CO | Frequency | 72 | 2.5 MHz | | <u> </u> | |
| 17:17:29 SCC1 State 'SCC MAC Activated' | | Cell Bandwidth | 10.0 MH | lz - | • 10.0 MHz < | Go to | | 1 State 'SCC MAC | Activated" | Cell Bandwidth | 10.0 MHz | | • | Go to | |
| 17:17:29 SCC1 State 'SCC RRC Added' 17:17:29 SCC1 State 'SCC On' | Ided" RS EPRE | | -59. | .8 dBm/15kHz | | | 17:17:29 SCC1 State 'SCC RRC Added' 17:17:29 SCC1 State 'SCC On' | RS EPRE | S EPRE -59.8 dBm/15kHz | 1 | | | | | |
| 17:17:29 SCC1 state SCC Off 17:17:20 SCC1 State 'SCC Off' | | Full Cell BW Po | w32 | .0 dBm | | | 17:17:20 SCC | | | Full Cell BW Po | w3 | 2.0 dBm | | | |
| 17:17:20 SCC1 State 'SCC On' | | PUSCH Open Lo | op Nom.Pr | ower | 10 dBm | Routing | 17:17:20 SCC | | | SCC1 <-> PCC | Swaj | p | | Routing | |
| 17:17:20 SCC1 State 'SCC RRC Added' 17:15:20 SCC1 State 'SCC MAC Activated' | | PUSCH Closed | oop Targe | t Power | -10.0 dBm | <u> </u> | | 1 State "SCC RRC / 1 State "SCC MAC | | | | | | <u> </u> | |
| 17-15-20 A SCC1 State 'SCC RRC &dded' | | Connection Se | | | | | 17-15-20 6 SCC | 1 State 'SCC RRC I | ldded" | Connection S Sched. RMC | etup | | | | |
| UE Measurement Report = 🔽 🛛 On | | Sched. RMC | oup | * | | | UE Measurem | ient Report 👻 🔽 | On 🗆 | Denea. Poinc | | | | | |
| RSRP RSR0 | | | | | | | RSF | D | RSRO | PCC -> SCC1 | Сору | | | | |
| -PCC 78 (-63 to -62 dBm) 21 (-9.5 to - | | | Downlink | k l | Jplink | | -PCC 786 | 63 to -62 dBm) | 22 (-9 to -8.5 dB) | | Downlink | | | | |
| SCC1 86 (-55 to -54 dBm) 22 (-9 to -8. | 5 dB) | # R8 | | 50 - | 1 - | | -SCC1 86 (| 55 to -54 dBm) | 23 (-8.5 to -8 dB) | # R8 | | 50 - | | | |
| | | RB Pos./Start R | B low | • 0 | low • 0 | | | | | RB Pos./Start P | RB low • | 0 | | | |
| | | Modulation | | OPSK • | OPSK • | | | | | Modulation | | OPSK - | | | |
| | | TBS Idx / Value | 5 | 4392 | 5 72 | LTE Signaling | | | | TBS Idx / Value | 5 | 4392 | | LTE Signaling | |
| | | Throughput | 3.9 | 53 Mbit/s | 0.072 Mbit's | | | | | Throughput | 3.95 | 3 Mbit/s | | Signaling ON | |
| Detach Connect SCC Off | | | | Send SMS | Inter/Intra- RAT | Config | Detach | Connect | scc off | | | | Inter/Intra- RAT | Config | |