ROHDE&SCHWARZ

Release Note 3.2.80 for LTE Signaling

New Features compared to version 3.2.70:

- Support of RLC Throughput Measurement
- Support of Internal Fading with MIMO 4x2 (single cell), requires R&S CMW base software version ≥ 3.2.70 (KS510, KS521 and KE500, KE501)
- Support of External Fading with MIMO 4x2 (single cell), requires R&S CMW base software version ≥ 3.2.70 (KS510 and KS521)
- Support of new scheduling types and reporting for Single Carrier/Dual Carrier Aggregation:
    - Follow WB CQI extended to support Transmission Mode 7 (KS510/KS512)
    - Follow WB PMI (KS510/KS512)
    - Follow WB CQI RI (KS510/KS512)
    - Follow WB CQI PMI RI (KS510/KS512)
- Support of configurable Default Bearer settings for data application tests (KS510)
- Support of configurable multiple Dedicated Bearers for data application tests (KS510)
- Support of UL TTI Bundling (KS510)
- Support of Semi-Persistent Scheduling (SPS) (KS510)
- Support of Robust Header Compression (RoHC) (KS510)
- Support of Service Center Time Stamp (KS510)
- Support of PMI/RI reporting in TM8 (KS510/KS512)
- Support of Confidence BLER measurements in Carrier Aggregation (KS512)
- Support of External Data Application Unit (DAU) on a second CMW500 (KA120)

Changes compared to version 3.2.70:

- Renamed scheduling type “CQI TTI-Base” to “Fixed CQI” in manual operation
- Improved timer settings for AM/UM Throughput for Dedicated Bearer:

	Voice	**Video**	**Data AM**	**Data UM**
PDCP settings				
• PDCP discard timer	50ms	50ms	infinity	infinity
• PDCP SN Size (RLC UM)	len7bits	len7bits	-	len12bits
RLC settings				
• RLC mode (RLC AM/UM)	UM	UM	AM	UM
• RLC sn-FieldLength (RLC UM)	size5	size5	-	size10
• T-Reordering (RLC UM , AM)	10ms	10ms	20ms	20ms
• T-StatusProhibit (RLC AM)	-	-	5ms	-
• T-PollRetransmit (RLC AM)	-	-	60ms	-

- Additional remote command for combined setting of channel for PCC/SCC
- Enhancements of UE information and UE Capability report

Bugfixes compared to version 3.2.70:

- General stability and usability improvements
- Missing graphics for TM7 and TM8 in GUI
- Correction of downlink scheduling for TM7 / TM8

Known Issues:

- Frequency offset in Carrier aggregation uses same value on both carriers
- No support for SPS in TDD UL/DL Config 0
- No support for Blind Handover in SPS
- With Follow CQI-PMI-RI and CQI-RI filled up DTXs leading 100%BLER on stream2 can occur when RI=1 is reported
- Recall of Transmission Mode always sets TM3.
- cDRX UL dynamic scheduling should be enabled after attach state and should only be used with enabled keep RRC Connection
- No support for UL/DL Config 5 in CA TDD Mode.
- For e2e testing an update to B300B is highly recommended.
- TDD UL/DL config 0 restriction: UL MCS and RIV must be constant for all UL subframes (values from Subframe #2 are used)
- No C2K Neighbour cell Sync with LTE Cell. Neighbour cell measurements are possible using a workaround.
- No Spectrum measurement support for 15MHz and 20 MHz in Data Application Mode and during Extended BLER measurement.
- DL RMCs with full Bandwidth allocation starts from RB2, instead of RB0 for RLC AM/HARQ

Release Note 3.2.70 for LTE Signaling

New Features compared to version 3.2.60:

- Requires R&S CMW base software version ≥ 3.2.40.
- Support of Carrier Aggregation enhancements:
  - Internal Fading (SISO and MIMO 2x2) (KS512 and KE500)
  - External Fading (SISO and MIMO 2x2) (KS512)
  - CQI, PMI, RI reporting (KS512)
  - Follow CQI (KS512)
  - HARQ (KS512)

    - SCell measurement enhancements (KS512)
- Support of RMC enhancements
- Support of additional Transmission Modes (KS520):
    - TM6 Single Layer Closed loop spatial multiplexing
    - TM7 Single Layer Beamforming
    - TM8 Dual Layer Beamforming
- Support of Audio Board (KS510)
- Display of Rel10 UE Capabilities
- Support of Binary SMS
- Additional scenario for MIMO4x2 to support external RF Fading (KS521)
- Additional Cell Reselection settings
- Additional Reject cause (KS510)
- Additional SRS settings
- Additional NS Values

Changes compared to version 3.2.60:

- Change of Scenario names in Manual Mode
- Improved AM Throughput settings

Bugfixes compared to version 3.2.60:

- General stability and usability improvements
- To reach the DRX-SLEEP no PDCCH must be sent to UE while the inactivity timer is running (UL #RBs = 0 and Mac Padding = OFF).
- Signaling failure due to configuration of Cell Parameter Out of Range
- Sporadic attach problems with TDD UL/DL config1
- RRC Idle timer failures in e2e

Known Issues:

- Recall of Transmission Mode always sets TM3.
- cDRX UL dynamic scheduling should be enabled after attach state and should only be used with enabled keep RRC Connection
- No support for UL/DL Config 5 in CA TDD Mode.
- For e2e testing an update to B300B is highly recommended.
- TDD UL/DL config 0 restriction: UL MCS must be constant for all UL subframes
- No C2K Neighbour cell Sync with LTE Cell. Neighbour cell measurements are possible using a workaround.
- No Spectrum measurement support for 15MHz and 20 MHz in Data Application Mode and during Extended BLER measurement.
- DL RMCs with full Bandwidth allocation starts from RB2, instead of RB0 for RLC AM/HARQ

Release Note 3.2.60 for LTE Signaling

New Features compared to version 3.2.50:

- Support of Data end to end with multiple signaling instances in parallel
- Carrier Aggregation PCC-SCC Swap
- Support of High Power UE
- Support of SRS Subframe Configuration (KS510)

Changes compared to version 3.2.50:

- Parameter “Enable Data end to end” has no effect any more. Data end to end is now effectively always enabled in each signaling instance due to support of Data end to end with multiple signaling instances in parallel.
- New Remote Command for identical configuration of all MIMO DL streams

Bugfixes compared to version 3.2.50:

- General stability and usability improvements

Known Issues:

- No support for UL/DL Config 5 in CA TDD Mode.
- For e2e testing an update to B300B is highly recommended.
- To reach the DRX-SLEEP no PDCCH must be sent to UE while the inactivity timer is running (UL #RBs = 0 and Mac Padding = OFF).
- No support for Fading in combination with MIMO 4x2
- TDD UL/DL config 0 restriction: UL MCS must be constant for all UL subframes
- No C2K Neighbour cell Sync with LTE Cell. Neighbour cell measurements are possible using a workaround.
- No Spectrum measurement support for 15MHz and 20 MHz in Data Application Mode and during Extended BLER measurement.
- DL RMCs with full Bandwidth allocation starts from RB2, instead of RB0 for RLC AM/HARQ

Release Note 3.2.50 for LTE Signaling

New Features compared to version 3.2.20:

- Support of DL Carrier Aggregation for FDD (KS502)
- Support of DL Carrier Aggregation for TDD (KS552)
- Support for PCell/Scell Timing Offset (KS512)
- Support of CSFallback (MT redirection in active mode) to 2G/3G (KS510)
- Support of RRC Inactivity Timer for RRC Connection Release in e2e
- Support of Relative Power Control One Shot measurement
- Configurable external delay compensation
- Synchronization possibilities of Cell System Time
- Support of Synchronization Offset for Cell System Time (KS510)
- Support of FDD operating bands 29, 30, 31

Changes compared to version 3.2.20:

- Default value of Accept Multiple Default Bearer changed to enabled.
- Default value of Integrity changed to Snow3G.
- HARQ can be enabled for scheduling type "CQI Follow WB"

Bugfixes compared to version 3.2.20:

- General stability and usability improvements
- Corrected Correlation Matrix in Fading Profile ETU30
- Slow Down of BLER Measurement in combination with UE Reporting
- Closed Loop Power misbehaviour in specific test cases
- Total sum of C2K and EvDO Neighbourcells is <= 6
- Theoretical max Throughput Calculation for User defined CQI always refers to MCS entry in CQI 15

Known Issues:

- No support for UL/DL Config 5 in CA TDD Mode.
- For e2e testing an update to B300B is highly recommended.
- To reach the DRX-SLEEP no PDCCH must be sent to UE while the inactivity timer is running (UL #RBs = 0 and Mac Padding = OFF).
- No support for Fading in combination with MIMO 4x2
- TDD UL/DL config 0 restriction: UL MCS must be constant for all UL subframes
- Parameter Enable Data e2e needed for e2e testing
- No C2K Neighbour cell Sync with LTE Cell. Neighbour cell measurements are possible using a workaround.

- No Spectrum measurement support for 15MHz and 20 MHz in Data Application Mode and during Extended BLER measurement.
- DL RMCs with full Bandwidth allocation starts from RB2, instead of RB0 for RLC AM/HARQ
- No support for Dual “Data Application Test”
- No support for Redirection in “Data Application Test”

Release Note 3.2.20 for LTE Signaling

New Features compared to version 3.2.10:

- Support of Connected DRX (KS510)
- Support of CSFallback (MO redirection in active mode) to 2G/3G (KS510)
- Support of TD-SCDMA Neighbourcells and Neighbourcell Measurements (KS510)
- Support of Periodic Wideband PMI and RI reporting (KS510)
- Configurable number of ignored PRACHs
- P0-UE-PUSCH toggling
- Configurable information element "EPS Network Feature Support" (KS510)
- Internal fading enhancements:
    - New ETU fading profiles (30 Hz max Doppler frequency)
    - User defined Maximum Doppler frequency

Changes compared to version 3.2.10:

- Increased Internal Fading AWGN Signal/Noise Ratio Maxvalue to 40

Bugfixes compared to version 3.2.10:

- General stability and usability improvements
- Fading Profile HST for MIMO TX Diversity requires R&S CMW base software version ≥ 3.2.13
- No support for CQI reporting and Follow CQI in TDD MIMO Closed Loop Spatial Multiplexing.
- Wrong scheduling Configuration after RRC Connection Setup/Release
- CMW stops sending TPC commands in special test case
- WCDMA -> LTE Redirection Failure

Known Issues:

- To reach the DRX-SLEEP no PDCCH must be sent to UE while the inactivity timer is running (UL #RBs = 0 and Mac Padding = OFF).
- No support for Fading in combination with MIMO 4x2
- TDD UL/DL config 0 restriction: UL MCS must be constant for all UL subframes
- No C2K Neighbour cell Sync with LTE Cell. Neighbour cell measurements are possible using a workaround.
- Theoretical max Throughput Calculation for User defined CQI always refers to MCS entry in CQI 15
- Parameter Enable Data e2e needed for e2e testing
- Total sum of C2K and EvDO Neighbourcells is <= 6
- No Spectrum measurement support for 15MHz and 20 MHz in Data Application Mode and during Extended BLER measurement.
- DL RMCs with full Bandwidth allocation starts from RB2, instead of RB0 for RLC AM/HARQ
- No support for Dual “Data Application Test”
- No support for Redirection in “Data Application Test”

Release Note 3.2.10 for LTE Signaling

New Features compared to version 3.0.50:

- Support of R&S CMW-B300B Hardware Module.
- Support of RRC Connection Release in e2e
- Support of Frequency Offset in UL and DL
- Detailed HARQ view in BLER Measurement (KS510)
- Enhancements of Internal Fader:
  - Support of High Speed Train (HST) Fading profile
  - The percentage of clipped samples is displayed

Changes compared to version 3.0.50:

- Extended BLER Support in Data application mode.
- The channel commands allow to query the center frequency of the channel:
  CONFigure: LTE: SIGN<i>: RFSettings: CHANnel: DL
  CONFigure: LTE: SIGN<i>: RFSettings: CHANnel: UL
- Command for Mixer Level Offset added:
  CONFigure: LTE: SIGN<i>: RFSettings: MLOFfset
- Additional remote commands for Relative and Absolute HARQ values
  FETCh:LTE:SIGNaling:EBLer:HARQ:STReam<n>:TRANsmission:ABSolute?
  FETCh:LTE:SIGNaling:EBLer:HARQ:STReam<n>:TRANsmission:RELative?
  FETCh:LTE:SIGNaling:EBLer:HARQ:STReam<n>:SUBFrame:ABSolute?
  FETCh:LTE:SIGNaling:EBLer:HARQ:STReam<n>:SUBFrame:RELative?

Bugfixes compared to version 3.0.50:

- General stability and usability improvements
- “Keep RRC Connection” enabled is no longer required for Multiple PDN, IPv6 Attach
- “Keep RRC Connection” enabled is no longer required for Data application testing
- Support for Dual “Internal Fading”
- In combination with R&S CMW-B300B no more performance restrictions for simultaneously UL/DL Data application testing (UE Category 4)
- Corrected missing DL Power adjustments after attachment in case of Fading.
- DTX Support for HARQ
- TDD UL/DL config 0 attach problems

Known Issues:

- No support for Fading in combination with MIMO 4x2
- TDD UL/DL config 0 restriction: UL MCS must be constant for all UL subframes
- No support for CQI reporting and Follow CQI in TDD MIMO Closed Loop Spatial Multiplexing.
- No C2K Neighbour cell Sync with LTE Cell. Neighbour cell measurements are possible using a workaround.
- Theoretical max Throughput Calculation for User defined CQI always refers to MCS entry in CQI 15
- Parameter Enable Data e2e needed for e2e testing
- Total sum of C2K and EvDO Neighbourcells is <= 6
- No Spectrum measurement support for 15MHz and 20 MHz in Data Application Mode and during Extended BLER measurement.
- DL RMCs with full Bandwidth allocation starts from RB2, instead of RB0 for RLC AM/HARQ
- No support for Dual “Data Application Test”
- No support for Redirection in “Data Application Test”

Release Note 3.0.50 for LTE Signaling

New Features compared to version 3.0.30:

- Requires R&S CMW base software version ≥ 3.0.15.
- Support of MIMO 4x2 with BLER extensions (KS521)
- Support of Downlink HARQ (KS510)

- Support of Follow CQI Mode, new scheduling type for CQI tests with downlink MCS following the wideband CQI (KS510)
- Support of Extended Cyclic Prefix (KS510)
- Support of Uplink CRC check for BLER measurement (KS510)
- Support of Neighbour cell Measurement Reports (KS510)
- TDD enhancements
    - All TTD UL/DL configurations (KS510)
    - User defined Bands allows different UL and DL frequencies for TDD (KS525)
- Advanced Uplink power settings for PRACH and Open Loop Power

Changes compared to version 3.0.30:

- The CQI-pmi-Config Index can be configured separately for FDD and TDD
- The Closed loop target power can no longer be configured separately for PUSCH and PUCCH.
- The open loop nominal power command has been changed to CONFigure:LTE:SIGN:UL:OLNPower
- Display of PDCCH configuration, possible PDCCH resource reduction

Bugfixes compared to version 3.0.30:

- General stability and usability improvements
- Support for CQI reporting in TDD
- Support for Error insertion in TDD
- Prach Trigger Bugfix

Known Issues:

- No support for Fading in combination with MIMO 4x2
- TDD UL/DL config 0 attach problems
- No support for CQI reporting and Follow CQI in TDD MIMO Closed Loop Spatial Multiplexing.
- No DTX results available for HARQ
- No C2K Neighbour cell Sync with LTE Cell
- Theoretical max Throughput Calculation for User defined CQI always refers to MCS entry in CQI 15
- No support for Dual “Internal Fading”
- Parameter Enable Data e2e needed for e2e testing
- Total sum of C2K and EvDO Neighbourcells is <= 6
- No Extended BLER Support in Data application mode.
- No Spectrum measurement support for 15MHz and 20 MHz in Data Application Mode and during Extended BLER measurement.
- Performance restrictions for simultaneously UL/DL Data application testing
- “Keep RRC Connection” enabled is required for Multiple PDN, IPv6 Attach

- “Keep RRC Connection” enabled is required for Data application testing
- DL RMCs with full Bandwidth allocation starts from RB2, instead of RB0 for RLC AM/HARQ
- No support for Dual “Data Application Test”
- No support for Redirection in “Data Application Test”

Release Note 3.0.30 for LTE Signaling

New Features compared to version 3.0.20:

- Support of FDD operating bands 27, 28
- Support of TDD operating band 44
- Additional parameter Group Hopping (KS510)
- Support of NITZ, sending date and time information to the UE (KS510)
- Support of Confidence BLER Measurement (early Pass/Fail criteria) (KS510)

Changes compared to version 3.0.20:

- Enhancements of extended BLER measurement:
  - Continuous measurement mode in addition to existing single shot mode
  - Enhanced range for number of subframes (minimum = 100)
  - Selectable error ratio type for BLER calculation
- All Fading Tests require R&S CMW-KS510
- Event Log info about Data end to end availability

Bugfixes compared to version 3.0.20:

- General stability and usability improvements
- AWGN power level after reconfiguration of Downlink Reference Signal power
- CQI result display for CQI reconfiguration during running Extended BLER measurement
- SRS reconfiguration in RRC idle

Known Issues:

- Automatic UE Category selection is fixed to Cat3, to ensure to have the optimized settings for throughput testing of Cat4 UEs, please use Manual mode and select Category 4
- No Support for CQI reporting in TDD
- No support for Dual “Internal Fading”
- No support for Scenario IQ Out – RF In

- Sporadically “Resource conflict” warnings when switching Fading Scenario in Cell ON state
- Switching between Internal and External Fading Scenario in Cell ON State has sporadically issues, it is recommended to switch the Scenario in Cell OFF State
- New Parameter Enable Data e2e needed
- Total sum of C2K and EvDO Neighbourcells is <= 6
- No Extended BLER Support in Data application mode.
- No Spectrum measurement support for 15MHz and 20 MHz in Data Application Mode and during Extended BLER measurement.
- Performance restrictions for simultaneously UL/DL Data application testing
- “Keep RRC Connection” enabled is required for Multiple PDN, IPv6 Attach
- “Keep RRC Connection” enabled is required for Data application testing
- No CRC Error insertion in BLER possible in TDD
- DL RMCs with full Bandwidth allocation starts from RB2, instead of RB0 for RLC AM/HARQ
- No support for Dual “Data Application Test”
- No support for Redirection in “Data Application Test”

Release Note 3.0.20 for LTE Signaling

New Features compared to version 3.0.10:

- Support of internal fading simulator for standard cell and "Two RF Out Ports" scenarios, requires R&S CMW-KE100 and R&S CMW-KE500 requires R&S CMW base software version ≥ 3.0.11.
- IRAT Redirection: LTE -> LTE
- IRAT Redirection Support to LTE/3G/2G/EvDO/C2K/TD-SCDMA signal from an external device
- Configurable rejection of Attach and TAU requests, such as “PLMN not allowed”, ….
- Additional RMC configurations due to changes in 3GPP specification (according to TS 36.521 V10.1.0 (2012-03))
- Display of RRC connection
- Code rate displayed for User Defined Channels and User defined TTI Based channels
- IRAT Redirection: 3G -> LTE, requires R&S WCDMA SW >= 3.0.20
- Additional reconfiguration of SIB parameters: PRACH config index PUSCH Open Loop Nominal Power, SRS enable / disable, Default Paging Cycle

Changes compared to version 3.0.10:

- Fading Tests requires R&S CMW base software version ≥ 3.0.11.
- Support of SIB reconfigurations selectable, via SIB Paging or RRC Reconfiguration
- The IP address information has been moved to the UE information section

- Number of LTE neighbour cells increased to 16

Bugfixes compared to version 3.0.10:

- General stability and usability improvements
- Paging Timeout detection
- Corrected Static Channel Matrix configuration
- Corrected uncertainty of 1db for TDD Closed Loop Power Control
- Re-attach issue after Detach solved

Known Issues:

- Automatic UE Category selection is fixed to Cat3, to ensure to have the optimized settings for throughput testing of Cat4 UEs, please use Manual mode and select Category 4
- No Support for CQI reporting in TDD
- No support for Dual “Internal Fading”
- No support for Scenario IQ Out – RF In
- Sporadically “Resource conflict” warnings when switching Fading Scenario in Cell ON state
- Switching between Internal and External Fading Scenario in Cell ON State has sporadically issues, it is recommended to switch the Scenario in Cell OFF State
- New Parameter Enable Data e2e needed
- Total sum of C2K and EvDO Neighbourcells is <= 6
- No Extended BLER Support in Data application mode.
- No Spectrum measurement support for 15MHz and 20 MHz in Data Application Mode and during Extended BLER measurement.
- Performance restrictions for simultaneously UL/DL Data application testing
- “Keep RRC Connection” enabled is required for Multiple PDN, IPv6 Attach
- “Keep RRC Connection” enabled is required for Data application testing
- No CRC Error insertion in BLER possible in TDD
- DL RMCs with full Bandwidth allocation starts from RB2, instead of RB0 for RLC AM/HARQ
- No support for Dual “Data Application Test”
- No support for Redirection in “Data Application Test”

Release Note 3.0.10 for LTE Signaling

New Features compared to version 2.1.30:

- Support of external fading for standard cell and "Two RF Out Ports" scenarios
- New scenario "IQ out - RF in"
- IRAT Redirection Support to 3G/2G/EvDO/C2K application supported
- Blind inter-band and inter-frequency handover now also supported for TDD
- Support of TDD UL/DL Configuration 5
- Added FDD operating band 23
- Added FDD operating band 26
- New scheduling type "CQI"
- Support of periodic CQI reporting and Median CQI in FDD
- Configurable cell reselection parameters Sintrasearch and Qrxlevmin
- MO/MT Detach
- New timer T3412 for periodic tracking area update
- Manual/Automatic UE category selection
- Additional spectrum emission: new values NS_11 to NS_15
- Selectable Precoding matrix for transmission mode 4
- Configurable mixer level offset

Changes compared to version 2.1.30:

- For IP-based data tests, a connection to the DAU must be enabled via “Enable Data end to end”- Parameter first
- A single pattern may now contain up to 35 TPC commands
- BLER measurement enhancements/improvements
- Signaling of the maximum allowed UE output power P-Max can be disabled
- Sending a DNS IP address to the UE can be disabled
- Enhanced range for uplink user defined channels, 16-QAM: TBS index maximum 26
- Query of full cell bandwidth power via remote command
- Message monitoring: external PC address pool configured globally
- If the UE indicates IPv6 support, an IPv6 prefix is assigned to the UE
- Display actual Code Rate for CQI scheduling

Bugfixes compared to version 2.1.30:

- General stability and usability improvements
- pSRSOffset corrected to 3

Known Issues:

- New Parameter Enable Data e2e needed
- No Support for CQI reporting in TDD
- Total sum of C2K and EvDO Neighbourcells is <= 6
- No Extended BLER Support in Data application mode.

- No Spectrum measurement support for 15MHz and 20 MHz in Data Application Mode and during Extended BLER measurement.
- Performance restrictions for simultaneously UL/DL Data application testing
- “Keep RRC Connection” enabled is required for Multiple PDN, IPv6 Attach
- “Keep RRC Connection” enabled is required for Data application testing
- No CRC Error insertion in BLER possible in TDD
- DL RMCs with full Bandwidth allocation starts from RB2, instead of RB0 for RLC AM/HARQ
- No support for Dual “Signaling Data Application Test”

Release Note 2.1.30 for LTE Signaling

New Features compared to version 2.1.20:

- Added new options R&S CMW-KS525, Support of User Defined Frequency Bands for FDD and TDD depending on frequency also R&S CMW-KB036 required; R&S CMW base software version ≥ 2.1.27 required)
- Added FDD operating bands 15 and 16
- Added FDD operating band 22 (option R&S CMW-KB036 required)
- Added TDD operating bands 42 and 43 (option R&S CMW-KB036 required)
- UE capability reports
- Configurable neighbour cell list for broadcast in system information
- Support for Neighbour cell Threshold
- Blind Inter Band Handover FDD
- Configurable Paging Cycle (Idle DRX)
- Support of message monitoring via an external PC (option R&S CMW-KT011 required)

Changes compared to version 2.1.20:

- “Multiple PDN“ needs to be enabled to accept Multiple Default Bearer from the UE
- Two additional GOTO Buttons available
- Comfortable Copy function for User defined TTI
- Additional commands for TTI based user defined channels - configuring all subframes via a single command:
  CONFigure: LTE: SIGN<i>: CONNection: UDTTibased: DL<Stream>: ALL
  CONFigure: LTE: SIGN<i>: CONNection: UDTTibased: UL: ALL
- Remote commands for retrieval of event log entries
- Filter coefficient reconfigurable during connection
- Added Reliability for BLER Measurement

Bugfixes compared to version 2.1.20:

- General stability improvements
- UL out of Sync Timer adjustable, no longer fixed to 5s

Known Issues:

- Total sum of C2K and EvDO Neighbourcells is <= 6
- Disconnect after redirection handover is not supported
- No Extended BLER Support in Data application mode.
- No Spectrum measurement support for 15MHz and 20 MHz in Data Application Mode and during Extended BLER measurement.
- Performance restrictions for simultaneously UL/DL Data application testing
- “Keep RRC Connection” enabled is required for Multiple PDN, IPv6 Attach
- “Keep RRC Connection” enabled is required for Data application testing
- TDD supports Redirection Handover only
- No CRC Error insertion in BLER possible in TDD
- DL RMCs with full Bandwidth allocation starts from RB2, instead of RB0 for RLC AM/HARQ
- No support for Dual “Signaling Data Application Test”

Release Note 2.1.20 for LTE Signaling

New Features compared to version 2.1.10:

- Added new options KS550, Support of TD-LTE SISO
- Support of LTE MIMO 2x2 (KS520) for TDD (TX-Diversity, RX Diversity, Closed Loop Spatial Multiplexing, Openloop Spatial Multiplexing)
- Scheduling type “User defined TTI Based” for TDD (KS510)
- User defined Channels for TDD (KS510)
- IP-based data transfer tests using Data Application Unit (DAU) IPv4for TDD (KA100)
- IPv6 support for TDD (KA150)
- Dual LTE Signaling (requires 2x B300A with MPC06)
- Keep RRC Connection
- Tracking Area Update
- Multiple PDN
- SMS over SG
- Event Log
- Inter Band Handover (Redirection)

- Inter Frequency handover (Redirection)
- Dynamical Bandwidth change (Redirection)
- FDD Operating Bands 24, 25
- RLC AM Mode in Data Application Mode
- HARQ in Data Application Mode

Changes compared to version 2.1.10:

- For Spectrum Measurements in 15/20MHz the following preconditions are needed:
    - Testmode connection
    - TPC Power Control -> Constant Power/ Max/Min Power
    - BLER Measurement -> OFF
- Operating Band 22 renamed to Operating Band 24 acc. to 3GPP
- Changed Minimum Frequency for Operating Band 12 acc. to 3GPP
- Parameter “Use Activate Testmode Message” enabled by default.
- Increased maximum Number of Subframes for Extended BLER Measurement.
- Configurable Measurement Interval for RSSI
- Selectable RAND value (even/odd)
- pSRSOffset fixed to 3
- Support of PDCCH OCNG
- Paging delay timer available in remote
- Filter coefficient reconfigurable during connection

Bugfixes compared to version 2.1.10:

- General stability improvements
- Blocking of BLER measurement when changing number of subframes in state ready
- Coding of APN Name corrected
- Sporadic UE attach problem
- Sporadically missing BLER results
- UE measurement reports on/off
- PRACH trigger

Known Issues:

- UL out of Sync Timer fixed to 5s
- No Extended BLER Support in Data application mode.
- No Spectrum measurement support for 15MHz and 20 MHz in Data Application Mode and during Extended BLER measurement.
- Performance restrictions for simultaneously UL/DL Data application testing
- Restart LTE Spectrum measurement after bandwidth change necessary

- “Keep RRC Connection” enabled is required for Multiple PDN, IPv6 Attach
- “Keep RRC Connection” enabled is required for Data application testing
- Paging delay timer
- TDD supports Redirection Handover only
- No CRC Error insertion in BLER possible in TDD
- DL RMCs with full Bandwidth allocation starts from RB2, instead of RB0 for RLC AM/HARQ
- No support for Dual “Signaling Data Application Test”

Release Note 2.1.10 for LTE Signaling

New Features compared to version 2.0.10:

Changes compared to version 2.0.10:

Bugfixes compared to version 2.0.10:

- General stability improvements

Known Issues:

- UL out of Sync Timer fixed to 5s
- No Extended BLER Support in Data application mode.
- No Spectrum measurement support for 15MHz and 20 MHz in Data Application Mode and during Extended BLER measurement.
- Disable Spectrum measurement for 15MHz and 20 MHz during TPC Trigger
- Performance restrictions for simultaneously UL/DL Data application testing

Release Note 2.0.20 for LTE Signaling

New Features compared to version 2.0.10:

- IP-based data transfer tests using Data Application Unit (DAU) IPv4 (KA100)
- IPv6 support (KA150)
- New scheduling type “User defined TTI Based” (KS510)
- MIMO 2x2 Closed loop Spatial Multiplexing (KS520)
- TX Diversity (KS520)
- RX Diversity (KS520)
- Extension of UL power control
- TPC Trigger
- PUCCH support
- SRS support
- Extended PRACH configuration
- DTX Support in BLER Measurement

- IMEI Request
- Support of DL RB = 0
- Extended RMCs acc. to 3GPP TS36.521 v9.3.0

Changes compared to version 2.0.10:

- PHICH Power offset is fix set to 0dB. The following command can no longer be used to set the parameter value: CONFigure:LTE:SIGN<i>:DL:PHICh:POFFset
- Remote command changes
    - CONFigure:LTE:SIGN<i>:UL:PUSCh:LEVel renamed to CONFigure:LTE:SIGN<i>:UL:PUSCh:OLNPower
    - CONFigure:LTE:SIGN<i>:UL:TPC:SET renamed to CONFigure:LTE:SIGN<i>:UL:PUSCh:TPC:SET
    - CONFigure:LTE:SIGN<i>:UL:TPC:PEXecute renamed to CONFigure:LTE:SIGN<i>:UL:PUSCh:TPC:PEXecute
    - CONFigure:LTE:SIGN<i>:UL:TPC:SINGle renamed to CONFigure:LTE:SIGN<i>:UL:PUSCh:TPC:SINGle
    - CONFigure:LTE:SIGN<i>:UPLink:TPC:CLTPower renamed to CONFigure:LTE:SIGN<i>:UL:PUSCh:TPC:CLTPower
    - ROUTe:LTE:SIGN<i>:SCENario:MIMO<Mimo> renamed to ROUTe:LTE:SIGN<i>:SCENario:TRO
    - ROUTe:LTE:SIGN<i>:SCENario?
    - ROUTe:LTE:SIGN<i>?

Bugfixes compared to version 2.0.10:

- General stability improvements
- RB allocation for DL RMCs starts from RB3, instead of RB0.
- PRACH Measurement@20MHz
- Spectrum Measurement for 15MHz and 20 MHz
- CS/PS combined attach

Known Issues:

- UL out of Sync Timer fixed to 5s
- No Extended BLER Support in Data application mode.
- No Spectrum measurement support for 15MHz and 20 MHz in Data Application Mode and during Extended BLER measurement.
- Disable Spectrum measurement for 15MHz and 20 MHz during TPC Trigger
- Performance restrictions for simultaneously UL/DL Data application testing

Release Note 2.0.10 for LTE Signaling

New Features compared to version 1.0.15.24:

- MIMO 2x2 Openloop Spatial Multiplexing (KS520)
- Static channel Model (KS520)
- UE Measurement Reports
- Enhanced PRACH Parameters
- Out of Sync Timer
- Theoretical Throughput results in remote
- BLER Measurement enhancements
- Configurable Measurement Timeout for Remote Control
- Connector change in established Call

Changes compared to version 1.0.15.24:

- NAS Security and Authentication enabled by default
- PHICH Resource Ng no longer available
- User Margin and Network margin merged into one Margin Parameter

Bugfixes compared to version 1.0.15.24:

- General stability improvements

Known Issues:

- RB allocation for DL RMCs starts from RB3, instead of RB0.
- PRACH Measurement@20MHz use “Measure on exception”

Release Note 1.0.15.24 for LTE Signaling

New Features compared to version 1.0.15.23:

Bug Fixes compared to version 1.0.15.23:

- General stability improvement

Known Issues:

- RB allocation for DL RMCs starts from RB3, instead of RB0.

Release Note 1.0.15.23 for LTE Signaling

New Features compared to version 1.0.15.22:

- Closed Loop Uplink Target Power Control
- Disconnect

Bug Fixes compared to version 1.0.15.22:

- General stability improvement
- Fixed AS security command for 'Null Integrity'
- Corrected T310 timer from 0 to 1000ms
- Fixed PRACH parameter for Cell Bandwidth 1.4 MHz

Known Issues:

- RB allocation for DL RMCs starts from RB3, instead of RB0.

Release Note 1.0.15.22 for LTE Signaling

New Features compared to version 1.0.15.21:

- Added relative Throughput value in % for Extended BLER measurement.
- Included new remote commands for Extended BLER measurement:

  FETCh:LTE:SIGNaling<instance>:EBLer:ABSolute?

  Return value
  <ACK abs>
  <NACK abs>
  <Expired Subframes>
  <Throughput Avg abs>
  <Throughput Min abs>
  <Throughput Max abs>

  FETCh:LTE:SIGNaling<instance>:EBLer:RELative?

  Return value
  <ACK rel>
  <NACK rel>
  <BLER rel>
  <Throughput Avg rel>

  CONFigure:LTE:SIGNaling<Instance>:CONNection:THRoughput:UL?

  Return value
  <UL Max possible Throughput>

  CONFigure:LTE:SIGNaling<Instance>:CONNection:THRoughput:DL?

  Return value
  < DL Max possible Throughput >

Bug Fixes compared to version 1.0.15.21:

- General stability improvements.

Known Issues:

- DL RMCs with full Bandwidth allocation starts from RB3, instead of RB0

Release Note 1.0.15.21 for LTE Signaling

New Features compared to version 1.0.15.20:

- RMC extensions according to 3GPP TS36.521
- User defined Channels (KS510)
- AWGN (KS510)
- Basic TPC settings
- Manual Expected Power setting
- P-Max Parameter setting
- Filter coefficient Parameter setting

Bug Fixes compared to version 1.0.15.20:

- Bugfixes for 1.4MHz Bandwidth test setup
- Bugfixes for DL 64QAM Modulation test setup
- Support for Cell ID > 0

Known Issues:

- DL RMCs with full Bandwidth allocation starts from RB3, instead of RB0

Release Note 1.0.15.20 for LTE Signaling

New Features compared to version 1.0.15.0:

- First Release

Bug Fixes compared to version 1.0.15.0:

- First Release

Known Issues:

- DL RMCs with full Bandwidth allocation starts from RB2, instead of RB0