R&S®WinIQSIM2
Simulation Software
Release Notes
Firmware Version 5.00.232.66

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The firmware of the instrument makes use of several valuable open source software packages.
The following abbreviations are used throughout this document: R&S® WinIQSIM2 is abbreviated as R&S WinIQSIM2

Test and Measurement
Release Notes
PAD-T-M: 3574.3288.02/02.00/CI/1/EN/

ROHDE&SCHWARZ

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1 Information on the Current Version and History

1.1 Version 5.00.232.66

Released: October 2022

New Functionality / Changed Behavior

Topic
Support for CMP180 and CMP200
Support for PVT360A
K423 Modernized Glonass (Experimental CDMA L1, Experimental CDMA L2, CDMA L3)
K469 DVB-RCS2
K470 5G NR Sidelink
K471 5G NR Release 17
K476 DVB-S2X Annex E
K555 Bandwidth Extension
K298 Modernized GPS with GPS L1C
5G NR: Downlink: Addition of new parameter for selecting the table used for time domain resource allocation being applied for creation of PDSCH
5G NR: Downlink: Rel-17 feature, add new SCS and cases for SS/PBCH for FR2-2
5G NR: General: Add new allocation type Puncturing, which punctures zero energy holes into the signal.
5G NR: General: Update specification version to 16.8.0
5G NR: Settings Transfer: Add basic support for PUCCH format 3&4.
5G NR: Uplink: Rel-17 feature, more prbs supported for PUCCH for FR2-2
5G NR: Uplink: Rel-17 feature, new scs for PRACH
5G NR: Uplink:/User/BWP: Some new FRCs for Rel.16
5GNR General: Up to 256 subframes are now configurable.
5GNR: Add support for new TCs for Release 16: 8.2.10, 8.2.11, 8.3.7 - 8.3.10
5GNR: Dowlink: IAB-MT reference measurement channels
5GNR: Dowlink: IAB-MT reference measurement channels for PDCCH
5GNR: Downlink: Add support for DCI 3_0 and 3_1.
5GNR: Downlink: Closed-loop HARQ K145 now also for PDSCH
5GNR: Downlink: Configurable PDSCH power for allocations generated through DCI
5GNR: Downlink: Extend PBCH scrambling and payload generation for access to unlicensed spectrum.
5GNR: Downlink: Implement transport block scaling factor S.
5GNR: Downlink: K148: Increase number of configurable DCIs to 32.
5GNR: Downlink: Make Coreset DMRS reference point configuration explicit. Warning, this can break configurations with CoresetID == 0. Please use the new reference point configuration.
5GNR: Downlink: Rel-17 feature, enable coding for 1024 QAM
5GNR: Downlink: Rel-17 feature, new Test Models for 35&45 MHz
5GNR: Downlink: Support of Test Model 2b and 3.1b defined in 17.5.0 spec.

5GNR: Downlink: Type 1 Single Panel Codebook Precoding
5GNR: From Rel.17 the frequency range FR2 are divided into FR2-1 and FR2-2
5GNR: General: Align with spec.-version 16.7.0
5GNR: General: Change naming within the timeplan of conflict to overlap and change colour scheme (indicating warning not danger)
5GNR: General: Clarify Point A definition by renaming Point A to Carrier Center to Point A to Baseband Center.
5GNR: General: CSI-RS and SRS can be configured via scheduling table.
5GNR: General: Implement all FR2-2 Bandwidths as suggested by R4-2202364.
5GNR: General: Support new R17 Carrier Bandwidths 35 MHz and 45 MHz
5GNR: General: Time Plan: X- and Y-axis description cannot show slots/symbol and subcarrier/RB in axes
5GNR: General: Update 3GPP Spec to 17.0.0
5GNR: K145: Allow custom line rates to be set for serial feedback line
5GNR: O-RAN: Add TMs 3.2.6.1.1-3.2.6.1.5 for 100 MHz
5GNR: O-RAN: Support compression test-cases 3.2.3.1.2-3.2.3.1.11 and 3.2.5.1.2-3.2.5.1.12 for 100MHz 30kHz
5GNR: O-RAN: Support for 3.2.3.1.X and 3.2.5.1.X TMs for SCS=15kHz and BW >= 20MHz
5GNR: O-RAN: Support for 3.2.6.1.1-3.2.6.1.5 for 100MHz 30kHz
5GNR: Possibility to copy other carriers or to load single carrier out of a nr5g file.
5GNR: Settings Transfer: Support allocation type 0.
5GNR: Settings Transfer: Support coreset Allow PDSCH mode.
5GNR: Sidelink: Support message type PSSCH/PSCCH with DMRS
5GNR: Sidelink: Support S-SSPSBCH generation.
5GNR: Support desired and blocking channel only mode in the TCW for some chapter 7 cases.
5GNR: Test case wizard support bandwidth 35MHz and 45MHz for release 17.
5GNR: Test Case Wizard: Support for release 16 up to v16.7.0.
5GNR: Time Plan: Add mouse drag functionality once we zoom in the Time Plan
5GNR: Uplink: Add R16 OCC length and index configuration for PUCCH format 2 and 3.
5GNR: Uplink: Draw the PUCCH payload bits from a single data source (e.g. a PN sequence).
5GNR: Uplink: Draw the PUSCH UCI payload bits from a single data source (e.g. a PN sequence).
5GNR: Uplink: IAB-DU reference measurement channels
5GNR: Uplink: Support for additional FRCs according to recent versions of 3GPP TS 38.141.
5GNR: Uplink: Support Multiplexing of R16 Configured Grand - Uplink Control Information to PUSCH.
5GNR: xOverhead for transport block size determination
802.11: New parameter Frame Delay supporting waveform time shift.
802.11be: add support for punctured RUs in OFDMA mode.
802.11be: signalling resource units differently for each 80MHz segment in EHT-SIG.
Cellular beta is now based on SMW April 2022
DVB-RCS2: BPSK,QPSK,8PSK and 16QAM modulations are supported.
DVB-RCS2: First version to support options K169/K469.
DVB-RCS2: Support for BTU Configuration.
DVB-RCS2: Support for Grid Configuration.
DVB-RCS2: Support for Multicarrier.
DVB-RCS2: Support for Slot / Section Configuration.
DVB-RCS2: Support for Spread Spectrum Linear Modulation Burst.
DVB-RCS2: Support for Super Frame Configuration.
DVB-RCS2: Support for User defined mode of Linear Modulation burst.
DVB-S2X-E: First version to support options K176/K476.
DVB-S2X-E: SOSF Marker Support for Superframes.

DVB-S2X-E: Support for Beam Hopping Configuration.
DVB-S2X-E: Support for Beam Hopping Time Plan.
DVB-S2X-E: Support for new Roll off values.
DVB-S2X-E: Support for PN-Sequence with known Initialization Value.
DVB-S2X-E: Support for Super Frame Formats 4,5,6 and 7.
DVB-S2X-E: Support ModCod Adjustment.
DVB-S2X-E: TSN is able to be set flexible for PL Frame of DVB-S2 / S2X.
General: Add possibility to sum up multiple multi layer carriers.
HRP-UWB: Default Filter is 15.4z.
HRP-UWB: Extra SFD Lengths are added
HRP-UWB: FCS support for 2 and 4 Octets.
HRP-UWB: Filter for 15.4z supported.
HRP-UWB: Fixed 2ms Frame Length is added.
HRP-UWB: Frame Length is added in Frame Configuration.
HRP-UWB: Maximum Idle Interval is one second.
HRP-UWB: Payload Lengths 1023,2047 and 4095 are available in HPRF Mode.
HRP-UWB: Text LSB is Transmitted First is added for Data Sources.
HRP-UWB:Channel Number and Code Index are taken as 9.
LTE Downlink: New 1024QAM test models (E-TMs 2b and 3.1b) of 3GPP TS 36.141.
LTE Sidelink: 64QAM support added.
LTE: O-RAN: Support for 3.2.3.7.X and 3.2.5.7.X TMs for BW < 20MHz
LTE: O-RAN: Support K175 U-Plane generation for NB-IoT
LTE: O-RAN: Uplink: Support U-Plane generation for Uplink (excluding PRACH)
HRP-UWB:STS Data can be configured Bitwise.
NR5G: General: Add new R17 bandwidths and numerologies (K171 needed).
NR5G: O-RAN: Support for 3.2.3.1.X and 3.2.5.1.X TMs for BW < 20MHz
OFDM: Support CAZAK Preamble with a Zadoff Chu Sequence
O-RAN LTE: Support for 3.2.3.7.X and 3.2.5.7.X TMs for 10MHz/20MHz
O-RAN: General: Provide O-RAN.CONF0 3.2.3.1.X and 3.2.5.1.X support for BW >= 20MHz
O-RAN: General: Provide O-RAN.CONF0 3.2.3.7.X

Fixed Issues

Topic	Ref. No.
5G NR: Two Coresets with different CCEs are displayed as conflicting in the timeplan.	928603
5G NR General: some parameters are not included in the generators' SCPI export.	886923
5G NR: Downlink: Auto Dci: Rel-15 PDSCH DMRS is generated even though dmrsDownLink-R16 is ON.	939932
5G NR: Downlink: NR PDSCH coding uses wrong RNTI when configured by a CORESET	936382
5G NR: Downlink: PDSCH Type configuration restrictions are too restrictive.	902268
5G NR: General: Progress bar does not show up for long signal calculations.	891801
5G NR: new timeplan axis was not correctly scaled in some conditions, i.e. subcarrier spacing was not considered correctly	888409
5G NR: Slot Format Index 1 or 2 in quick settings causes a firmware crash.	888575
5G NR: TCW: Interfering RB Center Frequency of TC 742B is not updated when SCS of WS changed.	895624
5G NR: Testcase Wizard: TC 8.2.5 is not available on wideband devices with scenario X.	891680
5GNR Uplink: Oran testmodels are not written into settings transfer file.	861104

5GNR WinIQSim2: Incorrect power scaling for 5GNR Constant PSD Power Mode plus AWGN.	918899
5GNR: Allocation type 0 is allowed although transform precoding is enabled.	879309
5GNR: Downlink: AutoDCI: Incorrect number CDM groups without data for antenna port index 23.	945505
5GNR: Downlink: Configuring SS/PBCH for FR2-2 gets wrong SCS/CP.	966835
5GNR: Downlink: Copy Carrier with selected Test Model in the Quick Settings does not copy the cell id correctly.	973765
5GNR: Downlink: Coreset: Firmware can create an internal error for specific interleaved settings.	937435
5GNR: Downlink: Coreset: Restrict to search space mode calculates incorrect CCE indexes for frame index bigger than 1.	912160
5GNR: Downlink: Creating a transfer file with number of layers set to 7 or 8 causes an error.	950569
5GNR: Downlink: CSI-RS configuration out of BWP range results in internal std::bad_alloc error message.	952566
5GNR: Downlink: GUI display error in NZP CSI-RS Antenna Port Table.	945334
5GNR: Downlink: When generating PDSCH through DCI 1_0 using P-RNTI, MsgB-RNTI, RA-RNTI, the redundancy version used might be wrong.	937429
5GNR: for some channel bandwidths, a PRACH allocation could require more RBs than what is available in the BWP	855328
5GNR: General: Copy To and repetition-mode issues if only showing a certain user in the Scheduling table.	959766
5GNR: General: Empty scheduling table for subframe number 160 and bigger.	957289
5GNR: General: Error if no carrier is mapped on a block output.	951935
5GNR: General: Errors while activating feedback mode for coupled per entity system configurations.	554021
5GNR: General: FR2-2 default waveform results in a bad EVM as SSB overlaps with PDSCH DMRS.	967851
5GNR: General: Issue while loading savefiles with different older versions.	947852
5GNR: General: Missing adjustments for blocks >2 when loading a global safe-file.	952638
5GNR: General: PxSCH DMRS without data == 2 not correctly visualized in time plan.	839260
5GNR: General: Unexpected restart due to inconsistent CSI-RS data.	901318
5GNR: Generate waveform with active closed loop feedback produces an error message.	550015
5GNR: In Advanced System Configurations, if the number of entities is higher than 2 and the BB Source Config is set to Separate Sources, setting the baseband trigger source to External Global Trigger 2 might fail with the device showing a corresponding error message.	953321
5GNR: In higher order MIMO configurations, retriggering the baseband while a 5G signal is generated with real time mode ON results in a signal distortion for some seconds.	929549
5GNR: K145 + K81: Firmware crashes on system configuration change with both K145 and K81 logging activated	917109
5GNR: K148: Using real-time filter off in coupled system configuration crashes the firmware	963669
5GNR: O-RAN TMs 3.2.3.7.4 & 3.2.5.7.4 10MHz not configured correctly	901181
5GNR: O-RAN: K175 Output may create double signed values (1+-0j)	971307
5GNR: O-RAN: TC 3.2.3.1.3 for 20MHz 30kHz does not occupy entire bandwidth	944151
5GNR: O-RAN: TMs 3.2.5.1.6 and 3.2.3.1.10 erroneously reset to invalid version for <= 10MHz	975363
5GNR: Power Leveling for Count Full System Frame Number SSPBCH mode does not work with advanced power modes	906070
5GNR: Save Recall: Old Save Recall Files cause problems in Scheduling Symbol Offset created with versions up to C45.4.70.128.50.20 beta / Nov. 2020 beta.	947736
5GNR: Settings Transfer: Creating a transfer file with two active PDSCH codewords is	926151

broken and creates an error message.	
5GNR: Settings Transfer: MCS Table 4 is not forwarded.	952609
5GNR: TCW: RB offset is not correct for both MUE and SUE for TC 8.2.5.	965974
5GNR: Test Case Wizard - SNR is not correct for 38.141-1:TC73 Dynamic Range and 38.141-2:TC74 OTA Dynamic Range.	846999
5GNR: Time Plan: x-axis does not zoom correctly in grid fine and coarse mode.	877783
5GNR: Uplink: 1024QAM not selectable without channel coding	951948
5GNR: Uplink: Copy Carrier with selected Test Model in the Quick Settings does not work for O-RAN Test Models.	966512
5GNR: Uplink: FRC: Some values on the FRC tab are not stored and might be wrong after save/recall	947865
5GNR: Uplink: GUI does not update the IMCS correctly by switching USCH Channel Coding ON	963038
5GNR: Uplink: K145 SRS: SRS in Feedback Mode does not work.	867674
5GNR: Uplink: PUCCH Format3 and Format4 polar coding might be wrong for some configurations (e.g. some payload sizes)	940867
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5GNR: Uplink: the number of RBs shown in the scheduling table for PRACH allocations with certain configurations could be wrong	857381
5GNR: Using K175 with bwp-offset settings creates invalid u-plane data	934488
802.11: Waveform file output of 2nd and additional antennas not working in 20MHz with IFFT upsampling enabled.	930956
802.11ac: Frame type Trigger not working correctly.	945603
802.11ax: Frame active part and frame inactive part markers incorrect in 20MHz bandwidth.	935066
802.11ax: Possible firmware crash when activating time domain windowing	911014
802.11be: added max PE duration of 20us	911570
802.11be: added non-OFDMA DL MU-MIMO	911554
802.11be: encoding issues with MCS14 and MCS15, incorrect scrambling of payload data	965587
802.11be: Filter settings cannot be changed in 20MHz.	896821
802.11be: incorrect constellation mapping to second 996 RU for EHT-160	966620
802.11be: incorrect processing of null carriers for small MRUs.	965596
802.11be: partly incorrect duplication of EHT-SIG content channels to 20MHz subblocks	946735
DVB-S2X: Fix for High Roll off values.	927405
HRP-UWB: Display of Mean PRF value is fixed in HPRF mode.	958974
HRP-UWB: Fix for Data Length.	952104
HRP-UWB: Fixes for different Chips per burst and hop burst combinations.	898437
HRP-UWB: MAC FCS 4 fixed for different hop burst and chip burst configuration.	898039
HRP-UWB: STS fixes without payload.	914827
DVB-RCS2: The default filter is not correct for DVB-RCS2.	970409
DVB-S2X-E:Different SF lengths are fixed.	972444
HRP-UWB: Frequency offset in Impairments works for different Oversampling factors.	909774
HRP-UWB: Channel Number is added instead of Channel Num.	912942
HRP-UWB: Fixes for Pattern in Datasources.	887252
HRP-UWB: Hop Bursts 8 and 32 are added in BPRF mode.	848583
LTE: O-RAN: Activating U-Plane generation does not re-trigger signal calculation and accordingly creates no files	849186
HRP-UWB: Power is fixed for different oversampling values.	1002624

1.2 Version 4.90.108.25

Released: August 2021

Same SW as 4.90.108.24 but with improved signing.

1.3 Version 4.90.108.24

Released: August 2021

New Functionality / Changed Behavior

Topic
K447 802.11be
K448 5G NR Release 16
K449 HRP UWB
SMBVB K525 (RF BW 1 GHz)
HiSLIP
5GNR: General: Quick Settings: Copy Carrier usable for Settings Transfer
5GNR: General: 5G NR application version is displayed in the user interface.
5GNR: General: In the scheduling dialog, the slot number in the frame is shown in addition to the slot number in the subframe.
5GNR: Downlink: Some cleanup in the user interface of the SS/PBCH settings.
5GNR: Uplink: Support release 16 SRS
5GNR: General: PDSCH, PUSCH, PUCCH: Support release 16 DMRS.
5GNR: Downlink: Support for release 16 "Minimum applicable scheduling offset indicator".
5GNR: Downlink: Support for DCI 2_6 and PS-RNTI.
5GNR: General: Changes to "Restart Data" in User/BWP dialog, needed for NR-TM according to recent versions of 3GPP TS 38.141.
5GNR: Downlink: Support for RRC / DCI time domain allocation list also for uplink DCI 0_1.
5GNR: Downlink: DCI2_4 and CI-RNTI (K148/K448 needed).
5GNR: Downlink: Support for release 16 PRS.
5GNR: Downlink: Possibility to apply a test model to multiple carriers (by means of Quick Settings).
5GNR: Downlink: Support for TS 38.521 RMC assistance functionality.
5GNR: General: Dummy Data serves OCNG definition of 3GPP TS 38.521.
5GNR: General: Dummy Data supports precoding matrix
5GNR: Uplink: Support for time shift according to N_TA_offset.
5GNR: Uplink: Power mode "burst" also for PUCCH channels.
HRP-UWB: First version to support options K149/K449 (UWB-HRP).
HRP-UWB: Support of 802.15.4, 802.15.4-BPRF and 802.15.4-HPRF Modes.
5GNR: Downlink: NR-TM update to 38.141-1 V15.5.0 and 38.141-2 V15.5.0.
5GNR: General: Possibility to store the 5GNR configuration in a file which can be imported by the 5G NR functionality of Rohde&Schwarz signal or spectrum analyzers.
5GNR: General: Discontinued support for "exemplary" (i.e. non-standard) test models.
EUTRA/LTE: General: Renamed DRS to DMRS where demodulation reference symbols are meant.
5GNR: Quick Settings: Synchronize Quick Settings to Marker's TDD Mode.
EUTRA/LTE: General: Starting seed of PN sequences is configurable.
5GNR: Download: Some release 16 updates to DCI type 2_0.

5GNR: General: Quick Settings: More flexibility for special slot in TDD mode
5GNR: General: Further speedup of the signal calculation.
5GNR: Downlink: DCI formats 0_0, 0_1, 0_2, 1_0, 1_1, 1_2, 2_0 (partly), 2_1, 2_2, 2_3, 2_4, 2_5, 2_6 are updated / created according to release 16. DCI 3_x and some minor DCI 2_0 work is pending.
5GNR: General: Update to 3GPP specifications 38.211 V16.4.0, 38.212 V16.4.0, 38.213 V16.4.0, 38.214 V16.4.0. Test models according to 38.141 V16.6.0.
5GNR: General: Possible 200 configurable users.
5GNR: Downlink: New SSB periodicities for IAB
5GNR: Downlink: Type 1 frequency allocation with granularity larger than 1 for DCI format 1_2
5GNR: Downlink: Display DMRS symbols in CORESET for DCI1_x after "Create PDSCH"
5GNR: General: Support of the release 16 UL full power transmission modes (SRS and DCI).
5GNR: Downlink: Default SRS Request field width in DCI 1_2 changed according to the related higher layer parameter
5GNR: Downlink: Auto-DCI: Release 16 PDSCH Type B symbol lengths and DMRS positions
HRP-UWB: Support of up to 4096 octets for HPRF payload.
5GNR: Downlink: RNTI type "custom".
5GNR: General: Carrier signals can be cyclically shifted by subframes.
HRP-UWB: Support for Flexible STS Active Segment Lengths.
5GNR: Downlink: Settings transfer: Add DCI usage and format to transferred settings
5GNR: General: Add toggle for disabling scrambling in PDSCH and PUSCH.
5GNR: General: Quick Settings and Marker: Support IAB slot formats according to release 16.
5GNR: Downlink: Support for new antenna port tables in auto DCI mode with format 1_1
5GNR: General: Add per carrier phase-shift for multi carrier setups
HRP-UWB: Support for flexible STS active segment lengths and number of active segments
5GNR: General: Increased number of independently configurable subframes.
HRP-UWB: Flexible configuration of sync lengths.
5GNR: Downlink: Additional SSPBCH Occasions.
5GNR: Downlink: Additional PDSCH Type B symbol lengths with option K148
5GNR: Downlink: Additional PDSCH DMRS durations with option K148
5GNR: Uplink: Support for PUCCH interlace
5GNR: Uplink: PRACH sequence lengths 571 and 1151 for unlicensed spectrum
5GNR: Uplink: Optional Cyclic Prefix Extension for PUSCH and PUCCH.
5GNR: Uplink: Support for PUSCH interlace with allocation type 2
5GNR: General: Add per carrier time-shift (< 1ms) for multi carrier setups
5GNR: General: Markers: Add "active high" / "active low" selection to invert marker signal.
EUTRA/LTE: General: Marker delay is additionally displayed in time units.
5GNR: General: For marker type TDD UL/DL, the rise and fall offsets can be configured.
5GNR: General: Marker delay is additionally displayed in time units.
EUTRA/LTE: General: Some LTE / IoT options have been renamed for simplification.
5GNR: Downlink: Support for DCI format 1_2.
5GNR: General: Optionally, the PDSCH/PUSCH target code rate can be configured manually.
5GNR: Uplink: New PUSCH type "DCI Format 0_2"
5GNR: Downlink: Support for DCI format 0_2.
5GNR: Downlink: Create PDSCH for DCI 1_2
5GNR: Downlink: Support for 38.141-2 FR2 NR-TM 2a and 3.1a.
5GNR: Uplink: Support for additional FRCs except new FRCs defined in A.4 according to recent versions of 3GPP TS 38.141.
5GNR: Downlink: Support multiple lte-crs rate match patterns, according to release 16.
5GNR: Downlink: Support for AI-RNTI and DCI 2_5.
5GNR: Uplink: PUSCH allocation can be shifted in time (needed for 2-step-RACH BS conformance tests).

5GNR: General: When changing to mapping type B, the number of symbols is always set to 7 first. Note that this can be a small compatibility break if you configured the number of symbols before changing the type, but it is needed as a preparation for a future Release 16 change, which would cause even a bigger compatibility break.
OneWeb User-Defined Signal Generation: Uplink: PUSCH UCI updates according to specification revision D.
5GNR: General: Support of up to 50 users with options K148/K448.
5GNR: General: Additional information is shown regarding powers of several signal parts and in reference to several bandwidths.
5GNR: Downlink: New PDSCH type "DCI Format 1_2"
EUTRA/LTE: Uplink: FRCs A.21, A.22.
5GNR: General: First version to support features according to the options SMx-K448 (5G NR Release 16 (WinIQSIM2)).
802.11be: additional features including the OFDMA mode
HRP-UWB: Frame Length is added in Frame Configuration.
HRP-UWB: Payload Lengths 1023,2047 and 4095 are available in HPRF Mode.
HRP-UWB:Default parameter values are changed.
HRP-UWB: FCS support for 2 and 4 Octets.
5GNR: General: First version to support features according to the options SMx-K448 (5G NR Release 16 (WinIQSIM2)).
802.11be: additional features including the OFDMA mode
HRP-UWB: Maximum Idle Interval is one second.
HRP-UWB:Support Configurable MAC Header
HRP-UWB: "Symbol timing Error" is replaced with "Chip Clock Error" in Impairments.
HRP-UWB: Gap Configuration is supported between Payload and STS

Fixed Issues

Topic	Ref. No.
5GNR: Settings File Transfer: Incorrect default value for Scaling factor S	855945
5GNR: General: Fix settings transfer for FR2+	853541
EUTRA/LTE: General: "Error in TxDiversity" is shown under certain conditions.	852923
HRP-UWB: Issue fix for BPRF- DRBM_HP PHR Data rate Mode.	847495
5GNR: Downlink: Time Plan shows conflict while both PRS and OCNG are ON	844366
5GNR: General: Possible issues with old savefiles when loading more carriers with deployment FR2.	843953
HRP-UWB: Issue for SFD = 0 in BPRF mode.	833183
5GNR: General: Min mode sample rate does not result in full sample cyclic prefix.	832872
OneWeb User-Defined Signal Generation: Uplink: Issues on 8PSK PUSCH.	832153
5GNR: Downlink: DCI field "Precoding Information and Number of Layers" in DCI 0_1 and 0_2 could have an erroneous width in the case of SRS resources configured with different number of antenna ports	828830
5GNR: Downlink: SRI field width in DCI 0_1 and 0_2 could be erroneous	828819
5GNR: Uplink: Several PTRS configurations cannot be mapped with only one SRS-PTRS Port Idx configuration.	828315
5GNR: Uplink: PUCCH: Format 0 does not support 0 ACK bits in case of active scheduling request.	825783
5GNR: General: Quick Settings: No SCPI for modulation type pi/2 available.	825524
5GNR: General: Unexpected data source behavior if there are allocations with state off.	823914
5GNR: Uplink: SRS: internal error in case of BWP RB offset != 0	820323
5GNR: Downlink: Creating a PDSCH through Auto DCI with format 1_0 in a cell with present CIF could fail	814070

5GNR: Downlink: The default number of bits for the PUCCH resource indicator field in DCI 1_2 changed	810875
3GPP: Downlink: Crash with certain channel coding configurations.	809765
5GNR: General: Clipping does not work for Carrier Aggregation	808704
5GNR: General: Allocations within a subframe might not be filled up with user payload data ordered according to playback order.	805145
HRP-UWB: Issue for bandwidths more than 1GHz.	805073
5GNR: Downlink: No PDSCH allocation was created through Auto DCI for Format 1_0 and 1_1 in case of MCS-C-RNTI	803533
5GNR: Downlink: Pattern initialization of coreset datasource does not work.	803522
EUTRA/LTE: Uplink: Parameter update issue for NB-IoT FRCs.	801138
OneWeb User-Defined Signal Generation: HARQ issue for 8PSK according to Rev D spec.	800759
HRP-UWB: Data Part should not be available in STS format 3 for both BPRF and HPRF modes.	797439
5GNR: Downlink: Enabling "Restrict to Search Space" with a present CIF could lead to an NR5G internal error	794189
5GNR: Downlink: Coreset interleaving by default has an invalid parameter value combination.	792335
HRP-UWB: Confusing GUI label for Viterbi constraint length.	791243
HRP-UWB: Issue for code indices in case of HPRF mode.	791194
EUTRA/LTE: Downlink: Issue for test model N-TM_Standalone.	790511
HRP-UWB: Signal issue in case of more than one STS segment.	789272
HRP-UWB: Issue for specific Viterbi constraint lengths in case of HPRF mode.	789265
5GNR: General: Markers: Raise offset, Fall offset not applied in TDD UL/DL mode	789034
5GNR: Downlink: PDSCH target code rate is not shown correctly.	788936
5GNR: Uplink: Settings transfer: PUSCH Frequency Hopping Offset not transferred.	788770
5GNR: General: Configuration issue for data list files in case of more than one user.	787883
5GNR: Downlink: Configuration issue for rate match pattern resource block data list files in case of more than one user.	787877
EUTRA/LTE: Uplink: Crash when configuring PRACH for eMTC in some cases.	785922
EUTRA/LTE: Uplink: NB-IoT delta offset display is not working properly in some cases.	780129
5GNR: General: The displayed marker delay in time units has a too low resolution.	778905
5GNR: General: recall issues with PDSCH/PXSCH antenna ports	772638
EUTRA/LTE: General: For some rarely used parameters, a value change could possibly not trigger a signal recalculation.	769627
EUTRA/LTE: Uplink: When reconfiguring PUSCH frequency hopping or NPUSCH frequency hopping, it could happen that the signal is not recalculated instantly.	769428
5GNR: General: possible inconsistencies when first increasing number of carriers then number of users	768682
5GNR: General: PDSCH/PUSCH settings transfer: dmrs nid_rs and dmrs antenna ports not exported. CSI-RS bitmap flipped, RB offsets not exported.	768574
5GNR: Downlink: Test models: Incorrect RNTI used in TM3_2 and TM3_3	767567
5GNR: General: Using 5G NR in automated context can be slower than usual.	765471
EUTRA/LTE: Downlink: User interface issue for PDSCH scheduling mode "Auto Sequence".	762783
5GNR: Uplink: PT-RS with Transform Precoding: Error in sequence generation	760515
5GNR: Downlink: Quick Settings: Number of Carriers >= 2 don't use the Coreset State in the Scheduling Table	760460
5GNR: General: In marker mode "TDD UL/DL", sometimes invalid parameter combinations are accessible in the user interface.	757092
5GNR: General: Drifting TDD DL/UL Marker Signal for 120 kHz Subcarrier Spacing	757082
5GNR: Downlink: Configured CORESET bundle size might not be used correctly in	755155

the signal generarion.	
5GNR: Downlink: PT-RS: Issue in sequence generation with Mapping TypeB	754769
5GNR: Downlink: DCI bits not filled up with zeros to 12 Bits	754153
5GNR: General: Error message for some quick settings configurations.	752892
5GNR: General: If several users are configured, the firmware can crash when using the time plan.	752445
5GNR: General: Marker delay can be configured with higher resolution than supported.	745782
5GNR: General: Clipping for non-average power modes does not produce expected leveling	743394
5GNR: General: Direct input of "PointA to Carrier Center" is not adjusted properly to 15kHz resolution.	741966
5GNR: Downlink: CI-RNTI is only configurable per user, but has to be configurable per BWP.	741843
5GNR: Downlink: Crashes or error messages in case of specific CORESET settings.	741348
5GNR: General: Crash when showing time-plan with much content.	741014
5GNR: Downlink: Firmware crashes in case of invalid auto DCI settings.	740921
5GNR: General: GUI crash in BWP-Config PUSCH Tab for higher carrier indices.	740455
5GNR: Downlink: New SS/PBCH 64-bit patterns are not initialized properly.	740449
5GNR: Uplink: For some scheduling configurations, turning OFF some allocations may lead to a firmware crash	739884
EUTRA/LTE: Uplink: Occasionally the spectrum of an NB-IoT signal in standalone mode is distorted.	739369
5GNR: General: Use of incorrect sub carrier spacing to generate TDD UL/DL marker.	739196
EUTRA/LTE: Uplink: For some cases, the FRC usability function allows invalid values of the NB-IoT subcarrier indication.	735861
5GNR: Downlink: Showing one SS/PBCH power in the scheduling table is confusing.	735386
5GNR: Uplink: SCPI issue for PUSCH frequency hopping configuration.	734019
5GNR: Downlink: Test Models TM2 and TM2a use PDSCHs with 14 instead of 12 symbols	733185
EUTRA/LTE: Uplink: Possible crash for certain PUSCH frequency hopping settings.	732896
EUTRA/LTE: Downlink: Problems with Release DCI while configuring and recalling SPS settings.	732688
5GNR: Uplink: When Transform Precoding is enabled the PT-RS scaling factor can not be determined by the scheduled modulation.	732668
5GNR: Downlink: Erroneous c_init calculation for PDSCH scrambling with multiple codewords	732459
EUTRA/LTE: General: Wrong delta-f limits for some system configurations.	730341
OFDM signal generation: Issue when exporting the configuration for R&S signal analyzers.	729109
5GNR: Downlink: Possible error while setting carrier deployment	728692
5GNR: Uplink: For transform precoding, it is possible to configure invalid resource block allocations.	728187
5GNR: Uplink: Error in signal generation if the value NRB0 for PTRS with Transform Precoding is higher than PUSCH RB	728146
5GNR: General: Save/recall issue for the new PN initialization value.	725419
5GNR: Downlink: Save/recall issue for the phase compensation mode.	724974
5GNR: Downlink: Missing SSPBCH antenna port mapping data of SCells after recall.	724933
EUTRA/LTE: Uplink: For some cases, the FRC usability function unnecessarily restricts the NB-IoT subcarrier offset.	724556
5GNR: General: Possible issues when double-applying the same system config.	723767
EUTRA/LTE: Downlink: Issue for Auto-DCI in case of special RNTIs.	723451
5GNR: General: Configuration issue in case of more than one "custom" DCI.	723273
5GNR: Downlink: Erroneous SCPI command for DCI datasource initialization pattern.	723092

OneWeb User-Defined Signal Generation: Uplink: Issues for CQI on PUSCH.	715315
EUTRA/LTE: Uplink: for carrier aggregation involving PUSCH signals, relative leveling of carriers can be wrong	709427
OneWeb User-Defined Signal Generation: Uplink: Issues on 8PSK PUSCH with CQI signal.	701614
5GNR: General: Signal calculation can run out of memory for multi carrier scenarios.	681599
EUTRA/LTE: Uplink: For sidelink SCI format 1 the retransmission index field is always shown as 0 but is actually automatically determined to be 0 or 1.	675221
EUTRA/LTE: Downlink: DCI 1A mode "PRACH" does not work.	674649
EUTRA/LTE: General: In case of carrier aggregation, an invalid sample rate can be configured, which causes a crash.	624353
EUTRA/LTE: General: Crash in case of specific user filters.	622579
5GNR: General: For WinIQSIM2 the playback rate is unnecessarily restricted.	606645
EUTRA/LTE: General: Some unlogical GUI behavior around the special subframe configs of newer specification releases.	540121
HRP-UWB: Oversampling factors 3 to 8 are supported.	790062
802.11ax: some HE-160 trigger based PPDU configurations crash	845722
802.11ax: incorrect LDPC tone mapping with DCM=on	782439
802.11ax: Packet Extension missing	819462
802.11ax: post-FEC padding bits are not mapped correctly to the last 2 OFDM symbols with STBC=on	803469
802.11b: Incorrect filter settings when setting CCK or PBCC modulation through SCPI	820433
Custom Digital Modulation: fixed crash with 2048QAM and 4096QAM	796263
DVB: CRC32 is enabled by default in case of DVB-S2 & S2X.	851639
HRP-UWB: Hop Bursts 8 and 32 are added in BPRF mode.	848583
Instrument scan does not recognize device option K525	767651
Max. sample rate for SMW- K525 corrected to 1200MHz (was 1000MHz)	771160
HRP-UWB: Idle Interval is fixed for HPRF mode.	808782
HRP-UWB: The levelling is fixed for all the STS Packet modes.	811191

1.4 Version 4.70.191.25

Released: August 2020

New Functionality / Changed Behavior

Topic
Support for SMCV 100B
Support for SMM 100A
802.11: Data tab displays frame active duration and duty cycle (active_time / total_time)
802.11ax: added support for 4xLTF + GI 0.8us
802.11ax: Added support for proprietary 4096 QAM modulation
802.11be: Add preliminary EHT-320 mode based on 11ax.
Bluetooth: Added AOD antenna gain feature.
Custom Digital Modulation: Increase maximum available oversampling value to 128 for FSK modulation with Gauss filters.

New option SMx K297 IRNSS/NavIC
WinIQSIM2 supports Galileo E6 signal with pseudo-random data
WinIQSIM2 supports Modernized Beidou Option K432 (B1C, B2a, B3I)
5GNR: General: Additional power modes.
5GNR: General: Allow phase compensation frequencies beyond the frequencies of available signal generators.
5GNR: General: Avoid non-functional (extreme) settings for constant PSD power mode by means of GUI restriction.
5GNR: General: Calculation speed improvement.
5GNR: General: Configurable initialization value of PN sequences.
5GNR: General: Configured PDSCH, PUSCH, CORESET allocations can be copied to another slot.
5GNR: General: Configured PUCCH, PRACH allocations can be copied to another slot.
5GNR: General: Filter mode "fast".
5GNR: General: GUI cleanup regarding DMRS antenna port configuration.
5GNR: General: Marker mode "TDD UL/DL".
5GNR: General: More information is shown in the info sections, especially for PDSCH/PUSCH channel coding.
5GNR: General: Not switching automatically to "Minimum" sample rate mode anymore when using carrier aggregation (performance improvement).
5GNR: General: Overlapping allocations are indicated in the scheduling table.
5GNR: General: Performance improvement for signal generation (faster signal calculation).
5GNR: General: Possibility to configure an offset to the system frame number, with impact to e.g. hopping patterns.
5GNR: General: Possibility to restart data and control payload in each allocation.
5GNR: General: Possibility to zoom into time plan.
5GNR: General: Power mode "Burst".
5GNR: General: Quick Settings feature for fast and convenient setup of the 5G NR signal configuration.
5GNR: General: Relative powers for carrier aggregation.
5GNR: General: Resource allocation type 0 also for PUSCH and for manually configured PDSCH (i.e. without DCI).
5GNR: General: Several improvements for the time plan.
5GNR: General: Showing slot borders in the time plan.
5GNR: General: Simplified configuration of PDSCH/PUSCH type A / B RRC parameters (backwards compatible for SCPI and setup file recall).
5GNR: General: Support for extended cyclic prefix.
5GNR: General: Support for user defined filters.
5GNR: General: Test model selection can be filtered for easier access.
5GNR: General: The allocation used as reference for power mode "Burst" is indicated in the scheduling table.
5GNR: General: The BWP size is set to maximum now also on deployment and SCS change.
5GNR: General: Update to 3GPP specifications 38.211 V15.8.0, 38.212 V15.8.0, 38.213 V15.8.0, 38.214 V15.8.0.
5GNR: General: Usability functionality which eases the configuration for carrier aggregation.
5GNR: General: When changing the content type (channel type) of an allocation, the remaining allocation parameters are now set to default.
5GNR: Downlink: Add SSPBCH starting half frame index field
5GNR: Downlink: CBG based transmission.
5GNR: Downlink: Define the CORESET RBs by means of a frequency domain bitmap.

5GNR: Downlink: Enable different DMRS position for LTE-CRS Coexistence cases as default (Two fringe cases of LTECRS).
5GNR: Downlink: More flexibility for configuring time domain resource assignment and bandwidth part indicator in DCI 0_1.
5GNR: Downlink: More flexibility for mapping the SSPBCH antenna port to output.
5GNR: Downlink: PDSCH mapping for LTE CRS coexistence.
5GNR: Downlink: Support CSIRS smaller than BWP.
5GNR: Downlink: Support for additional common search space types.
5GNR: Downlink: Support for cross-carrier scheduling.
5GNR: Downlink: Support for DCI format 2_0, 2_1, 2_2.
5GNR: Downlink: Support for DCI format 2_3.
5GNR: Downlink: Support for dynamic HARQ-ACK codebook mode selection and DAI bits in DCI.
5GNR: Downlink: Support for further RNTI types.
5GNR: Downlink: Support for PDSCH PRB bundling.
5GNR: Downlink: Support for PDSCH rate matching patterns.
5GNR: Downlink: Support for quasi co-location TCI field in DCI1_1.
5GNR: Downlink: Support for selection of active UL BWP for CORESETs (needed for DCI).
5GNR: Downlink: Support for SFI-RNTI, INT-RNTI, TPC-PUSCH-RNTI, TPC-PUCCH-RNTI, TPC-SRS-RNTI.
5GNR: Downlink: Support of PDSCH resource allocation type 0.
5GNR: Uplink: Power mode "Burst" now also supports PRACH.
5GNR: Uplink: PTRS for PUSCH (with transform precoding).
5GNR: Uplink: PUSCH frequency hopping.
5GNR: Uplink: Repetitions now also for PRACH.
5GNR: Uplink: Support for group and sequence hopping.
5GNR: Uplink: Support for special MCS values 29 to 31.
5GNR: Uplink: Support for SRS frequency hopping.
5GNR: Uplink: Support larger payload for UCI.
5GNR: Uplink: Update of FRC assistance function to version 15.5.0 of 38.141-1 and 38.141-2. Support for FRCs which have been removed by 3GPP after early versions of 38.141-1/-2 is discontinued.
EUTRA/LTE: General: All supported features are in line with 3GPP release 15, i.e. the following official 3GPP specifications are implemented: TS36.211 v. 15.6.0, TS36.212 v. 15.6.0, TS36.213 v. 15.6.0.
EUTRA/LTE: General: First version to support features according to options SMx-K446 (Cellular IoT R15).
EUTRA/LTE: Downlink: NB-IoT wakeup signals (NWUS).
EUTRA/LTE: Downlink: Support for 1024QAM.
EUTRA/LTE: Downlink: TDD for NB-IoT downlink.
EUTRA/LTE: Uplink: Cell ID can be overridden also for eMTC/NB-IoT UEs.
EUTRA/LTE: Uplink: NPRACH for FDD - release 15 extensions.
EUTRA/LTE: Uplink: Support for NB-IoT early data transmission.
EUTRA/LTE: Uplink: Support for V2X RMCs of 3GPP TS 36.521.
EUTRA/LTE: Uplink: Support NB-IoT scheduling request by means of release 15 NPUSCH format 2.
EUTRA/LTE: Uplink: Support of NB-IoT TDD for uplink.
OFDM signal generation: Exported xml settings are less redundant.
OFDM signal generation: Generating signals with a bandwidth slightly higher than connected instruments' specified bandwidth is possible for special applications. If this is done, a warning is

indicated.
OFDM signal generation: XML export functionality is now accessible via the user interface.

Fixed Issues

Topic	Ref. No.
802.11: added new IFFT Upsampling mode for improved EVM with lower bandwidths.	587631
802.11: Incorrect marker duration for pulse/pattern/on-off ratio markers in 20MHz bandwidth with enabled IFFT upsampling	697095
802.11: Inverted transmission order of HT Control/VHT Control field of MAC header	686282
802.11ac: Encoding of long VHT frames incorrect.	704066
802.11ad: Sequence length cannot be set to more than one frame.	695167
802.11ax: Incorrect channel coding for MCS0 and MCS4 with STBC when DCM is active	654510
802.11ax: incorrect channel encoding with MCS = 4 and STBC on	654713
802.11ax: Incorrect tone rotation for second segment in HE80+80 mode with both segments active at the same time.	606751
802.11ax: post-FEC padding bits can cause high signal peaks in some specific configurations	619872
802.11b: Improved chip clock error in 20MHz bandwidth.	718149
802.11n: incorrect channel encoding for MCS > 9 in MIMO modes.	704059
802.11n: Incorrect LDPC encoding with some specific data lengths.	716913
ARB Multicarrier: Incorrect error message concerning exceeded clock rate	653120
Bluetooth LE 1M: CP flag not set and CTEInfo byte missing despite being activated	702243
Bluetooth: automatically adjust sequence length according to configured parameter sets with active dirty transmitter test	684304
Bluetooth: Changed max limit of Advertising Packet Interval to 28ms	719815
Bluetooth: inverted transmission order for patterns of BT Low Energy test packets	613652
No response, when minimized.	662729
SCPI Recording for instrument selection in Vector Sig Gen Block	647687
802.11: Setting the scrambler to On (Random Init) initialized the scrambler with the same value and not random values	734027
3GPP FDD: Sporadic crash in case of R99 channel coding with user settings (i.e. not predefined RMCs).	657747
5GNR: General: After restarting the software, not all 5GNR parameters are restored reliably.	650625
5GNR: General: Bad ACLR when clipping mode is active.	576437
5GNR: General: BWP size is not always correctly adapted after channel BW change.	644197
5GNR: General: Cell Mapped button has no effect.	673302
5GNR: General: Configuration issue for data list files in case of more than one user.	648678
5GNR: General: Configuration issue in case of more than one "custom" DCI.	723273
5GNR: General: Configuration resolution of phase compensation frequency is not sufficient.	629202
5GNR: General: Error message on signal calculation abort by user.	612072
5GNR: General: Error messages when using carrier aggregation and specific carrier spacings.	663774
5GNR: General: Error while setting mapping mode for PDSCH/PUSCH antenna port mapping over SCPI.	715252
5GNR: General: EVM degradation for specific carrier aggregation settings.	648464
5GNR: General: Fast filter does not work for all channel bandwidths.	686569

5GNR: General: For a certain sequence of configuration, an allocation's antenna port table can end up in a faulty state.	634293
5GNR: General: For some data source parameters, the signal is not reliably recalculated on value change.	662475
5GNR: General: The playback rate is unnecessarily restricted.	606645
5GNR: General: GUI reacts slowly in cases with several configured allocations.	624670
5GNR: General: If allocations are configured with state OFF, various read-only information shown for this and subsequent allocations can be corrupt.	602107
5GNR: General: In case of PUSCH transmission in mode "Codebook" the precoding matrix is not correctly applied to DMRS and data REs. Also some cleanup is needed in the UE for the antenna port configuration in this case.	666492
5GNR: General: In some cases, the PDSCH/PUSCH mapping type B cannot be configured although it should be configurable.	653819
5GNR: General: Issue for marker configuration rise & fall offsets.	697037
5GNR: General: Issue for PTRS in case of Auto-DCI.	649925
5GNR: General: Issue for TBS calculation in case of activated PTRS or number of CDM groups other than 2.	596905
5GNR: General: Issue in case of certain PTRS settings.	661368
5GNR: General: Issue in case of more than eight component carriers.	647150
5GNR: General: Issue in case of PTRS and PDSCH/PUSCH for several antenna ports.	684963
5GNR: General: Phase compensation state is not recalled from saved settings reliably.	601765
5GNR: General: Possible crash after recalling settings from file.	718366
5GNR: General: PTRS issue for BWPs with RB offset.	642657
5GNR: General: SCPI issue for PDSCH/PUSCH antenna port selection.	634842
5GNR: General: SCPI issues for PTRS configuration.	629055
5GNR: General: Signal calculation error for very small BWPs.	693600
5GNR: General: UI configuration and range issue around carrier aggregation delta f parameter.	686932
5GNR: General: When using the "copy to" usability functionality, sometimes error messages are shown.	710607
5GNR: General: When working with RBGs, some GUI parameters could not be updated when changing others.	645250
5GNR: Downlink: Automatic creation of PDSCH by DCI does not work in case of more than one BWP.	602915
5GNR: Downlink: Coreset Aggregation Level issue when increasing Number of Allocations.	696277
5GNR: Downlink: Coreset issue in case of TDD if "quick settings" is used.	659697
5GNR: Downlink: CSI-RS issue for RB offset != 0.	612362
5GNR: Downlink: CS-RNTI DCI could use the wrong RNTI value.	714617
5GNR: Downlink: DCI bit pattern is not reliably updated if other parameters change.	614630
5GNR: Downlink: DCI issue for time domain allocation list.	647978
5GNR: Downlink: DCI issue for VRB-to-PRB mapping in case of "dynamic switch".	720336
5GNR: Downlink: dmrs-AdditionalPosition is not calculated reliably in case of Auto-DCI.	657786
5GNR: Downlink: Error message can show up when configuring cross-carrier scheduling.	716834
5GNR: Downlink: In case of Auto/DCI, allocations cannot be removed from a slot.	603465
5GNR: Downlink: In some cases, a DMRS additional position index different than configured is used in the signal generation.	621896
5GNR: Downlink: Issue for automatically created PDSCH in case of used time domain allocation list.	647369
5GNR: Downlink: Issue for CSI-RS in case of certain relative powers.	610327

5GNR: Downlink: Issue for HPN field in DCI 1_1.	625472
5GNR: Downlink: Issue for querying some of the DCI parameters by SCPI.	679709
5GNR: Downlink: Issue for some short DCI.	687824
5GNR: Downlink: Issue for time domain allocation list for certain values of K0.	639532
5GNR: Downlink: Issue for time domain resource allocation list in case of SI-RNTI.	642174
5GNR: Downlink: Issue for VRB-to-PRB mapping in specific cases.	650337
5GNR: Downlink: Issue in case of DMRS add. pos. index in case of DCI 1_1 scheduled PDSCH.	633863
5GNR: Downlink: Issue in case of more than one CSIRS resource.	622556
5GNR: Downlink: Issue when recalling DCI parameters from old files.	696146
5GNR: Downlink: Issue when scheduling PDSCH by means of DCI into other slots than the one the DCI is sent in (cross slot scheduling).	589499
5GNR: Downlink: Issue when using time domain allocation list in combination with PDSCH mapping type B.	639541
5GNR: Downlink: Issues for "restrict to search space".	592016
5GNR: Downlink: Issues for time domain allocation list.	605792
5GNR: Downlink: Issues for time domain allocation list.	614104
5GNR: Downlink: MCS index range issue in case of MCS table 2.	590286
5GNR: Downlink: MIB configuration issue in case of more than one cell.	647938
5GNR: Downlink: Minor issue for the time domain allocation list.	625094
5GNR: Downlink: Missing SSPBCH antenna port mapping data of SCells after recall.	724933
5GNR: Downlink: Number of bits for time domain resource assignment in DCI 1_1 can be wrong.	632574
5GNR: Downlink: PDSCH TxScheme configuration is not visible for certain settings.	660373
5GNR: Downlink: Possible error while setting carrier deployment	728692
5GNR: Downlink: Rate matching around LTE-CRS (LTE / 5GNR coexistence): Issue in case of some LTE channel bandwidths.	624999
5GNR: Downlink: Scrambling and channel coding is incorrect in NR_TMs 1_2, 3_2, 3_3.	626915
5GNR: Downlink: Scrambling issue for PDSCH in case of AutoDci and specific RNTI types.	668913
5GNR: Downlink: Software instability when configuring the number of SSPBCH patterns.	617333
5GNR: Downlink: TBS is not correctly displayed in case of two code words.	613595
5GNR: Downlink: The time domain allocation list's symbol offset cannot be configured properly in case of more than one user.	620042
5GNR: Downlink: Unwanted preset of the position pattern when increasing the number of SSPBCHs.	706827
5GNR: Downlink: VRB-to-PRB DCI bit is present in non-interleaved mode.	649839
5GNR: Downlink: Wrong transport block size in case of PDSCH overlap with SSPBCH or in case of activated rate matching around LTE-CRS.	625074
5GNR: Uplink: Channel coding issue for specific PUSCH UCI cases.	695120
5GNR: Uplink: Configurable range of SRS resource sets is wrong.	628825
5GNR: Uplink: Configuration issue for PTRS Auto mode in case of more than one BWP and transform precoding.	716696
5GNR: Uplink: Configuration issue for SRS number of antenna ports in case of several SRS resources.	678007
5GNR: Uplink: Configuration issue of PRACH custom repetition.	646112
5GNR: Uplink: Cyclic Shift Issue for PRACH Restricted Type B in very limited configurations.	663971
5GNR: Uplink: Data send between dmrs in uci-only mode and configured uci.	709390
5GNR: Uplink: Displayed number of symbols for SRS are confusing.	599968
5GNR: Uplink: Error in calculating ARB file for some PT-RS settings.	712716

5GNR: Uplink: Error in signal generation if the value NRB0 for PTRS with Transform Precoding is higher than PUSCH RB	728146
5GNR: Uplink: Fix for PUSCH UCI in case of mapping type B.	635768
5GNR: Uplink: For four PUSCH Mapping type B configurations the number of DMRS symbols is not correct.	691066
5GNR: Uplink: For specific PRACH cases and filter mode "per BWP" the signal calculation fails.	628999
5GNR: Uplink: In case of activated FRC, not all depending settings are updated reliably.	625464
5GNR: Uplink: In case of enabled transform precoding with PTRS, the DMRS ID is used for PTRS instead of N_ID^PUSCH.	716205
5GNR: Uplink: Incorrect maximum for PUSCH DMRS length for config type 2.	672758
5GNR: Uplink: Invalid number of RBs could be configured for PUCCH format 3.	523022
5GNR: Uplink: Issue for AP selection of PUSCH in case of "codebook".	658616
5GNR: Uplink: Issue for certain PTRS configurations.	651219
5GNR: Uplink: Issue for certain PTRS configurations.	662858
5GNR: Uplink: Issue for FRC with mapping type B in some beta versions.	684758
5GNR: Uplink: Issue for PRACH in case of filter mode "Channel BW".	645165
5GNR: Uplink: Issue for precoding of PTRS in codebook mode without transform precoding.	666807
5GNR: Uplink: Issue for PUCCH n_D and scramblingID0 calculation in some cases. Previously always defaulting to Cell-Id now aligned with specification (dmrs-UplinkForPUSCH-MappingTypeB/scramblingID0, dataScramlbingIdentityPUSCH)	642447
5GNR: Uplink: Issue for PUSCH in case of transform precoding and BPSK.	691889
5GNR: Uplink: Issue for specific PRACH cases.	680813
5GNR: Uplink: Issue for uci on pusch in case of small block lengths and pusch rb offset != 0.	699486
5GNR: Uplink: Issue of power mode "constant PSD" in case of PRACH.	632567
5GNR: Uplink: Issue with specific PUSCH UCI configurations in case of PTRS.	667385
5GNR: Uplink: Issue with specific PUSCH UCI configurations in case of PTRS.	683455
5GNR: Uplink: Minor issue of PTRS in case of PUSCH transform precoding.	673529
5GNR: Uplink: PUCCH generation fails with an error message for specific scheduling configurations.	634177
5GNR: Uplink: PUSCH TPMI is not selectable in all cases.	685145
5GNR: Uplink: Save/Recall of the filter mode in uplink is not reliable.	630693
5GNR: Uplink: SCPI issue for PRACH power reference mode "burst".	702754
5GNR: Uplink: SCPI issue for PUSCH frequency hopping configuration.	734019
5GNR: Uplink: Signal generation issue in case of PTRS for transform precoding in mode "Auto".	719358
5GNR: Uplink: SRS can be erroneously configured outside the BWP.	667791
5GNR: Uplink: SRS hopping can be configured although not supported or functional yet.	602556
5GNR: Uplink: Switching off the state of a PRACH allocation does not work.	618653
5GNR: Uplink: UCI is locked for FRC although needed for some tests.	611091
5GNR: Uplink: UCI on PUSCH broken for a resource block offset != 0.	688130
5GNR: Uplink: UCI on PUSCH: Incorrect number of coded CSI1 and CSI2 bits for < 2 HARQ-ACK bits calculated.	717724
5GNR: Uplink: UCI on Pusch: Special cases for intra slot hopping not handled.	707068
5GNR: Uplink: With activated FRC usability functionality not all settings are recalled correctly from setup files.	678333
EUTRA/LTE: General: After NB-IoT channel bandwidth change, the signal might not be updated immediately.	628614
EUTRA/LTE: General: For NB-IoT, RB frequency positions are not reliably updated if	647713

other parameters are changed in the UI.	
EUTRA/LTE: Downlink: DCI issue for NB-IoT.	604942
EUTRA/LTE: Downlink: NB-IoT carrier RB index is not reliably updated after channel BW change.	635586
EUTRA/LTE: Uplink: Configured NPRACH resource block index is sometimes not used correctly for signal generation.	642721
EUTRA/LTE: Uplink: Depending on the order of configuration, the NB-IoT NPUSCH frequency position can be wrong after changing the channel bandwidth.	630090
EUTRA/LTE: Uplink: For some configurations the NB-IoT NPRACH is incorrect.	652958
EUTRA/LTE: Uplink: If PRACH and PUSCH users (or NPRACH and NPUSCH users) are mixed, the relative leveling can be wrong.	633630
EUTRA/LTE: Uplink: Issue for V2X MIB coding in PSBCH.	642810
EUTRA/LTE: Uplink: NPRACH delta f is not working correctly for some UEs.	642748
EUTRA/LTE: Uplink: Possible crash for certain PUSCH frequency hopping settings.	732896
EUTRA/LTE: Uplink: Save/recall issue if working with several component carriers in uplink.	709428
EUTRA/LTE: Uplink: SCPI issue for NPRACH start time.	645175
OneWeb User-Defined Signal Generation: General: State of notched signals cannot be changed by remote control command.	699453
OneWeb User-Defined Signal Generation: Uplink: Issue for 8PSK modulation.	643779
OneWeb User-Defined Signal Generation: Uplink: Issue for PUSCH delta sequence shift.	643683
OneWeb User-Defined Signal Generation: Uplink: Issue for PUSCH interleaver in case of 8PSK.	669925
OneWeb User-Defined Signal Generation: Uplink: Issue when recalling settings (subframe configurations missing).	711971
OneWeb User-Defined Signal Generation: Uplink: Issues for CQI on PUSCH.	715315
OneWeb User-Defined Signal Generation: Uplink: Issues on 8PSK PUSCH with CQI signal.	701614

1.5 Version 4.60.162.45 x64

Released: September 2019

New Functionality / Changed Behavior

Topic
64 Bit software
K431 LoRa
K443 Cellular IoT Enhancements
K298 Modernized GPS. New signals GPS L2C and GPS L5, GALILEO E5a and E5b
Support for CMW100
Support for options SMW-K525 and SMW-K527
Support for SMBV100B
Bluetooth: added support for Bluetooth Core Specification Madrid (BT Version 5.1).
Bluetooth: enable all advertising packet types for dirty transmitter test
GNSS GUI renewed

GNSS: restricted backward compatibility.GNSS is a summary entry point for all satellite configurations.Galileo BOC(1,1) is no longer supported..datasource, spreading, code phase and doppler settings are moved to satellite configuration.
IEEE 802.11: Option to disable built-in additional lowpass filter.
5GNR: General: "Exemplary" test models now use phase precompensation.
5GNR: General: Allowing very narrow BWPs (1 RB).
5GNR: General: By default, now a BWP is set to the maximum allowed size after a change of the channel bandwidth.
5GNR: General: CDM Groups w/o data for PDSCH and PUSCH.
5GNR: General: Display BWP overview in the time plan dialog.
5GNR: General: Displaying the BWP offset also relative to PointA, not only to the first usable RB of a TxBW.
5GNR: General: DMRS power is configurable in PDSCH/PUSCH settings.
5GNR: General: Dummy REs are now switched off by default.
5GNR: General: Filter mode replaces filter per BWP switch.
5GNR: General: If an SMBV100A is connected to WinIQSIM2, 5GNR uses a higher oversampling rate, in order to achieve a higher signal quality on this playback device.
5GNR: General: Increased maximum number of independently configurable subframes.
5GNR: General: More flexibility for repeating allocations.
5GNR: General: Moved PDSCH-DMRS / PUSCH-DMRS Settings from PDSCH / PUSCH Settings to BWP Config Settings dialogs. (SCPI commands have been changed).
5GNR: General: Multiple layers/antenna ports are configurable for PDSCH/PUSCH.
5GNR: General: Multiple PDSCH/PUSCH antenna ports can be mapped to a baseband output.
5GNR: General: New sample rate mode "minimum".
5GNR: General: Optionally suppress subcarrier on output center.
5GNR: General: Possibility to override DMRS scrambling ID for PDSCH and PUSCH.
5GNR: General: Removed the current implementation of the slot format feature as it does not have any impact on the signal. You can set up any slot format by using Sym. Offset and No. Sym. of the allocations. An auto-setup for specific TDD configurations is planned for the future.
5GNR: General: Showing additional information for allocations.
5GNR: General: Some PDSCH/PUSCH RRC parameters have been moved from the allocations to a more central place. Note that this causes a SCPI/Recall incompatibility for these parameters compared to previous versions.
5GNR: General: Support for carrier aggregation.
5GNR: General: Support for crest factor reduction by means of clipping.
5GNR: General: Support for more allocations per user, BWP and subframe.
5GNR: General: Support for time-domain-windowing (WOLA)
5GNR: General: The RF upconverter phase rotation can optionally be included in the baseband signal calculation.
5GNR: General: Update to 3GPP specifications 38.211 V15.4.0, 38.212 V15.4.0, 38.213 V15.4.0, 38.214 V15.4.0.
5GNR: Downlink: A carrier can be marked for usage as SUL (impacts DCI contents).
5GNR: Downlink: Additional RRC parameters which are needed for DCI1_1 PDSCHs.
5GNR: Downlink: CSI-RS.
5GNR: Downlink: LDPC channel coding for PDSCH.
5GNR: Downlink: MIB content in PBCH.
5GNR: Downlink: NR-TM according to 38.141-1 V15.2.0 and 38.141-2 V15.2.0.
5GNR: Downlink: Optionally configure SSPBCH frequency domain position relatively to point A.
5GNR: Downlink: Optionally restrict CCE indices according to search space.

5GNR: Downlink: PDSCH auto generation from DCIs.
5GNR: Downlink: Possibility to override PDCCH and PDSCH scrambling reference point in order to behave as if sent in initial BWP / Coreset 0.
5GNR: Downlink: SFN offset for SSPBCH.
5GNR: Downlink: SSPBCH can be switched off.
5GNR: Downlink: Support for downlink and uplink DCI content inside CORESET.
5GNR: Downlink: Support for PDSCH PTRS.
5GNR: Downlink: Support for PDSCH time domain scheduling by means of PDSCH Time Domain Allocation List.
5GNR: Downlink: Support for VRB different from PRB.
5GNR: Downlink: Support of both PDCCH precoder granularity modes.
5GNR: Downlink: Support of PDSCH-to-HARQ feedback timing indicator in DCI 1_1.
5GNR: Downlink: Support of SI-RNTI.
5GNR: Downlink: Support of special behavior for Coreset 0.
5GNR: Downlink: Support SSPBCH L=8 for unpaired spectrum below 3 GHz.
5GNR: Downlink: Two codewords can be configured for PDSCH.
5GNR: Downlink: UI cleanup for CORESET settings.
5GNR: Downlink: Unused coreset CCEs can be used for PDSCH.
5GNR: Uplink: LDPC channel coding for PUSCH.
5GNR: Uplink: New parameter for number of SRS antenna ports (needed for PUSCH generation even if SRS itself is not used).
5GNR: Uplink: Preconfiguration feature for FRCs of TS38.141.
5GNR: Uplink: PTRS for PUSCH (without transform precoding).
5GNR: Uplink: Support for periodic SRS.
5GNR: Uplink: Support for PRACH channel.
5GNR: Uplink: Support for PUCCH.
5GNR: Uplink: Support for PUSCH UCI.
5GNR: Uplink: Support for SRS codebook.
5GNR: Uplink: Support of PRACH timing offset for 3GPP TS 38.141 tests.
5GNR: Uplink: Support overlapping SRS and PUSCH allocations.
5GNR: Uplink: Updated DMRS for transform precoding to recent 3GPP specification.
EUTRA/LTE: General: All supported features are in line with 3GPP release 14, i.e. the following official 3GPP specifications are implemented: TS36.211 v. 14.7.0, TS36.212 v. 14.6.0, TS36.213 v. 14.7.0.
EUTRA/LTE: General: First version to support options K143/K443 (Cellular IoT Enhancements).
EUTRA/LTE: Downlink: Alternative table for DMRS (Rel. 13) and semi open loop (Rel. 14)
EUTRA/LTE: Downlink: ARB sequence length wrap-around for eMTC/NB-IoT PDSCH generated by PDCCH cross-subframe scheduling.
EUTRA/LTE: Downlink: Changed BCCH-NPDSCH scrambling according to recent NB-IoT specifications. The previous scrambling is still supported in a legacy mode.
EUTRA/LTE: Downlink: DCI support for NB-IoT with two HARQ processes.
EUTRA/LTE: Downlink: 'LTE Cell' is added to switch the LTE carriers on and off, in NB-IoT Inband Mode.
EUTRA/LTE: Downlink: Manual Scheduling is supported for NPDSCH in NB-IoT DL.
EUTRA/LTE: Downlink: Narrowband Positioning Reference Signal (NPRS) is supported.
EUTRA/LTE: Downlink: New UE categories according to recent versions of the specification (UE categories 15 to 20).
EUTRA/LTE: Downlink: NPBCH scrambling symbol rotation supported according to recent 3GPP

specifications.
EUTRA/LTE: Downlink: PDSCH-SIB1-BR channel is supported for eMTC Downlink.
EUTRA/LTE: Downlink: Support of Gap configuration for NB-IoT (DL-GapConfig-NB-r13 in TS 36.331).
EUTRA/LTE: Downlink: The maximum number of DCI allocations for eMTC is increased to 400
EUTRA/LTE: Downlink: Time Plan is added for PDSCH-SIB1-BR in eMTC DL.
EUTRA/LTE: Downlink: Transport Block Size Indexes are increased from 10 to 13 for Standalone and Guardband modes for NB-IoT.
EUTRA/LTE: Downlink: UE Categories M2 and NB2 are added for eMTC and NB-IoT Respectively.
EUTRA/LTE: Downlink: Usability improvement for auto sequence mode "vary UL Tx Power and RBA"
EUTRA/LTE: Downlink: Widebands support for eMTC with 5MHz and 20MHz. DCI support for eMTC Resource Block Assignment Flag.
EUTRA/LTE: Uplink: Enhanced DMRS for PUSCH
EUTRA/LTE: Uplink: NPUSCH Repetitions 2,16,64 are supported for FRCs in NB-IoT Uplink.
EUTRA/LTE: Uplink: Possibility to override the cell ID for individual users.
EUTRA/LTE: Uplink: PUSCH Repetitions 12, 24 and PUCCH Repetitions 64,128 are supported for eMTC.
EUTRA/LTE: Uplink: Repetitions 4,8,32 are supported for PUCCH Format2 in eMTC CEMode B.
EUTRA/LTE: Uplink: Retuning symbols 0,1 and 2 are supported for eMTC.
EUTRA/LTE: Uplink: Sidelink/D2D.
EUTRA/LTE: Uplink: SRS enhancements for Rel. 13
EUTRA/LTE: Uplink: SRS is supported for eMTC Uplink.
EUTRA/LTE: Uplink: SRS transmission in UpPTS for special subframe configuration 10 (fallback to special subframe configuration 5).
EUTRA/LTE: Uplink: Support for FRCs 18 and 19 of 3GPP TS 36.141.
EUTRA/LTE: Uplink: Support of PRACH Restricted Set B.
EUTRA/LTE: Uplink: V2X support.
EUTRA/LTE: Uplink: Widebands of 5MHz and 20MHz are supported for eMTC.

Fixed Issues

Topic	Ref. No.
802.11ax: Filter parameters cannot be changed when using HE-20 frames in 20MHz transmission bandwidth.	583128
IEEE 802.11: Filter oversampling values are fixed and cannot be changed.	586477
IEEE 802.11: Sample rate not indicated correctly for 20MHz bandwith and oversampling ratios other than 2	586476
IEEE 802.11: Used filter oversampling and impulse length values are not displayed correctly in auto mode.	586478
5GNR: General: AWGN did not work in combination with 5GNR.	590452
5GNR: General: Displayed playback rate is not always correct.	446997
5GNR: General: Filtering "per BWP" can cause an unnecessarily high sample rate.	501799
5GNR: General: Issue for channel bandwidth SCPI command.	510987
5GNR: General: Issue for multi numerology scenarios.	451083
5GNR: General: Issue for recalling setup files by SCPI.	586025
5GNR: General: Issue in polar channel coding. For certain parameters of polar coding, the coding can be wrong.	554545
5GNR: General: Issue when using long ARB sequences.	467956

5GNR: General: Issues with overlapping allocations and different numerologies.	442044
5GNR: General: k0u value is sometimes not updated properly on PointA reconfiguration.	470614
5GNR: General: On Save/Recall the software could have crashed.	553370
5GNR: General: PDSCH/PUSCH bit mapping issue.	462615
5GNR: General: PDSCH/PUSCH-DMRS is not set correctly for cases, where AddPosIdx != 0 and MappingTypeA is selected.	508847
5GNR: General: Possible crash when loading Save/Recall file.	550832
5GNR: General: Saving setup files from older software versions sometimes does not work. Note that although saving settings is fixed with this software, recalling files from earlier versions still can cause error messages as the files itself are corrupted.	474969
5GNR: General: SCPI bug for PDSCH/PUSCH DMRS config type.	455112
5GNR: General: Sporadic save/recall issues.	546084
5GNR: General: Stability issue when increasing the number of users.	525301
5GNR: General: Test model name is shown even after changing parameters.	445219
5GNR: General: The maximum configurable playback rate is incorrect in some cases.	450130
5GNR: General: UI inconvenience issue when configuring PDSCH / PUSCH allocations.	456883
5GNR: Downlink: Content type inconsistency when increasing the number of allocations.	476470
5GNR: Downlink: Coreset scrambling ID is shown as 0 even if Cell ID is used (only in GUI, signal uses Cell ID)	504701
5GNR: Downlink: Issue for PBCH DMRS in case of BPCH relative power different from 0 dB.	550510
5GNR: Downlink: Issue for PDCCH DMRS in case of interleaved CCE-to-REG mapping.	453393
5GNR: Downlink: Issue for PDCCH DMRS in case of symbol offset different from 0.	592219
5GNR: Downlink: Issue for SSB scrambling for index > 7.	516374
5GNR: Downlink: PBCH payload size is wrong.	451005
5GNR: Downlink: Signal quality issue in case of SSPBCH with different subcarrier spacing than surrounding channels.	485157
5GNR: Downlink: Some SSPBCH periodicities missing.	501942
5GNR: Downlink: Sometimes the SSPBCH is removed from the configuration unnecessarily if other parameters are changed.	512885
5GNR: Downlink: Wrong range of CORESET DMRS scrambling ID.	497956
5GNR: Uplink: Calculation aborts with error in case of transform precoding and more than one configured allocation per subframe.	501223
5GNR: Uplink: Incorrect DMRS power boosting for PUSCH transform precoding.	472637
5GNR: Uplink: Issue for BPSK.	462301
5GNR: Uplink: Issue for PUSCH RB number, if transform precoding is enabled.	455965
5GNR: Uplink: Issue with exemplary test model for transmit precoding.	466469
EUTRA/LTE: General: An error can show up when recalling specific eMTC/Cat-M settings from file.	569977
EUTRA/LTE: General: Incorrect waveform when time domain windowing with certain types of baseband filters are enabled.	426381
EUTRA/LTE: General: Option K112/K412 is additionally needed erroneously for K119 feature special subframe configuration 10.	578154
EUTRA/LTE: Downlink: After NB-IoT channel bandwidth change, the signal could be corrupt.	589200
EUTRA/LTE: Downlink: eMTC PBCH is not correctly drawn in the time plan (not a signal issue).	425872
EUTRA/LTE: Downlink: EPDCCH issue in special subframe.	482602

EUTRA/LTE: Downlink: In case of NB-IoT the wrong RNTI was used in some cases.	590644
EUTRA/LTE: Downlink: Instability when configuring NB-IoT DCIs.	471735
EUTRA/LTE: Downlink: Issue for Non-User-PDSCHs with precoding scheme "Beamforming".	522020
EUTRA/LTE: Downlink: Issue for specific Auto Sequence configurations in case of TDD.	594533
EUTRA/LTE: Downlink: Issue that unused resource elements are not filled with Dummy Data in NB-IoT Standalone Mode.	428920
EUTRA/LTE: Downlink: Issue with PBCH state when switching between LTE and IoT modes.	470189
EUTRA/LTE: Downlink: Issue with SIB1-NB data sources of NB-IoT.	443020
EUTRA/LTE: Downlink: Issue with SIB1-NB scheduling repetitions.	428630
EUTRA/LTE: Downlink: Minor fix for the time plan	486897
EUTRA/LTE: Downlink: Minor issue for the timeplan in case of LAA	426402
EUTRA/LTE: Downlink: PDCCH issue on SCells in case of mixed TDD/FDD carrier aggregation.	465540
EUTRA/LTE: Downlink: Remote control issue for high numbers of NB-IoT DCIs.	469427
EUTRA/LTE: Downlink: Save/recall of NB-IoT channel coding state is unreliable.	588583
EUTRA/LTE: Downlink: Scrambling issue for NB-IoT SIB1.	479447
EUTRA/LTE: Downlink: The mapping of CRS is not correct in case of PBCH repetitions (eMTC).	433700
EUTRA/LTE: Downlink: The OCC sequence is wrong if the case of single AP transmission.	453460
EUTRA/LTE: Downlink: The precoding of the PDCCH region in case of a partial starting subframe (LAA) is wrong	436081
EUTRA/LTE: Downlink: The range of the field "HARQ Process number" in DCI Format 6-1A is wrong (eMTC).	434051
EUTRA/LTE: Downlink: The subframes outside a LAA burst are filled with Dummy Data in case OCNG is enabled.	426410
EUTRA/LTE: Downlink: Unexpected PDCCH error-message when configuring eMTC DCI.	426365
EUTRA/LTE: Downlink: When Puncturing is switched on, LTE CRS signals are erroneously punctured in the NB-IoT Inband Mode.	431074
EUTRA/LTE: Downlink: Wrong RNTI for NB-IoT NB-SIB1.	477179
EUTRA/LTE: Uplink: Changes in eMTC PRACH Restricted Set parameter sometimes do not change the signal immediately, but after changing another LTE parameter.	473873
EUTRA/LTE: Uplink: GUI issue for eMTC start subframe.	457280
EUTRA/LTE: Uplink: Inconsistent default values of eMTC transport block size.	482647
EUTRA/LTE: Uplink: Issue for inband NB-IoT PRACH preambles.	580885
EUTRA/LTE: Uplink: Issue for slot numbers for FRCs for NB-IoT.	450040
EUTRA/LTE: Uplink: Leveling in power reference mode "UE Burst RMS Power" is not reliable in case of filter optimization mode different from "Best EVM".	494484
EUTRA/LTE: Uplink: Minor issue in GUI	444568
EUTRA/LTE: Uplink: The power leveling is wrong for some configurations with SSF = 10	521370
EUTRA/LTE: Uplink: The SRS on the SCells cannot be configured for more than one frame.	406203
EUTRA/LTE: Uplink: UE Burst RMS Power doesn't work for PUCCH F4 and F5	444560
EUTRA/LTE: Uplink: When special subframe configuration 10 is configured, no PUCCH allocation can be configured in UL subframes.	489953
For some digital standards global save by means of :SYST:SAV remote control command does not work. Manual operation and *SAV & MMEM:STOR:STAT remote control commands however work.	494528
OneWeb user-defined signal generation: General: Issue for some SCPI commands.	423840

OneWeb: Reference Signals: General: Querying the available reference signals by means of SCPI does not work.	395990
Recall issue if local digital standard setup files have been underwent a line ending conversion by third party tools.	574263
V5GTF: Downlink: Second AP of multi-AP xPDSCH-DMRS is not mapped (Spatial Multiplexing).	422546
V5GTF: General: Some marker settings are accessible which are intended and functional only for R&S generator firmwares, but not WinIQSIM2.	423631

1.6 Version 4.20.047.58

Released: June 2018

New Functionality / Changed Behavior

Topic
Support for SMBV 100B
K444 5G NR: General: First version to support 5G NR (5G New Radio)

Fixed Issues

Topic	Ref. No.
IEEE 802.11: Fixed crash when activating CRC with 802.11b	386921
EUTRA/LTE: Downlink: Issue for certain eMTC PDSCH allocations.	446333
EUTRA/LTE: Uplink: Minor issue in GUI for bit information.	415677
Save / Recall does not work for IEEE 802.11	415596

1.7 Version 4.20.047.35

Released: March 2018

New Functionality / Changed Behavior

Topic
K414 OFDM Signal Generation
K430 ONEWEB
DVB-S2/S2X option K116: Added new feature to alternate MODCOD in ACM mode with up to 100

different settings.
V5GTF: General: First version to support K418 V5GTF with flexible configuration.
V5GTF: Downlink: Removed default DCI entry from downlink predefined configurations.
V5GTF: Uplink: In predefined configuration Uplink_Config_2, n_xPUCCH^2 is 8 so that xPUCCH is positioned at PRBs#48-53 and xPUCCH-DMRS power is changed to 0dB.
OFDM Signal Generation: First version to support option K114/K414, "OFDM Signal Generation".
OneWeb User-Defined Signal Generation: First version to support OneWeb User-Defined Signal Generation K430 option.
OneWeb Reference Signals: Added several new multi carrier files for reverse link.
EUTRA/LTE: General: Improved filtering for NB-IoT standalone (200 kHz channel bandwidth), causing a better EVM and ACP.
EUTRA/LTE: General: Guardband NB-IoT carrier can be shifted in frequency completely flexibly.
EUTRA/LTE: Downlink: CSI-RS for FD-MIMO/eFD-MIMO.
EUTRA/LTE: Downlink: Test models (N-TM) for NB-IoT.
EUTRA/LTE: Downlink: Support for eMTC downlink signals as part of K115.
EUTRA/LTE: Downlink: Additional power reference mode in case of NB-IoT standalone downlink 200 kHz channel bandwidth for easier leveling on the active signal parts.
EUTRA/LTE: Downlink: By default, no eMTC / NB-IoT DCIs are configured after preset.
EUTRA/LTE: Downlink: Support for NPDSCH data source type data list.
EUTRA/LTE: Downlink: Time plan view modes PRB/VRB for TDD.
EUTRA/LTE: Downlink: Enabling of MCS table 2 and Alt. TBS index can be done per cell.
EUTRA/LTE: Downlink: New UE categories according to recent versions of the specification.
EUTRA/LTE: Downlink: Content coding for NB-IoT SIB1-NB.
EUTRA/LTE: Downlink: NB-IoT NPBCH is configurable flexibly in case of MIB encoding is switched off.
EUTRA/LTE: Downlink: Displaying RS power per RE relative to level display also for NB-IoT standalone 200 kHz channel bandwidth case.
EUTRA/LTE: Downlink: For combinations of LTE with NB-IoT in inband mode, the LTE carrier can be punctured. Needed for test model configurations from 3GPP TS 36.141.
EUTRA/LTE: Downlink: The EPDCCH is mapped to a valid candidate also when a limited number of configurable subframes is used.
EUTRA/LTE: Uplink: Updates and minor corrections for TDD FRCs.
EUTRA/LTE: Uplink: FRCs for NB-IoT.
EUTRA/LTE: Uplink: Special subframe configuration 10 and PUSCH in special subframe.
EUTRA/LTE: Uplink: Updated the FRC usability feature according to recent versions of 3GPP TS 36.141.
EUTRA/LTE: Uplink: PUCCH formats 4 and 5.
EUTRA/LTE: Uplink: PUSCH can be set to UCI only mode per subframe, by means of USH TB size 0.
EUTRA/LTE: Uplink: Extended range of I_HARQ_offset.
EUTRA/LTE: Uplink: Extra UE delays can be configured.

Fixed Issues

Topic	Ref. No.
3GPP FDD: Exported HSPA waveforms cannot be played back on instruments with K283 option.	338937
ARB Multicarrier allows up to 512 carriers in the mode Arbitrary Carrier Frequency	324226
GNSS: an error is reported by activating of any GNSS standard	405346
OneWeb Reference Signals: Markers are not working correctly.	375888
EUTRA/LTE: General: User-defined filters are not working.	304799

EUTRA/LTE: General: Erroneous user interface behavior when switching the duplexing mode in eMTC or NB-IoT.	379656
EUTRA/LTE: General: eMTC cannot be configured with extended cyclic prefix.	392093
EUTRA/LTE: General: Issue for some NB-IoT transport block sizes.	397371
EUTRA/LTE: Downlink: The transport block size is wrong in AutoDci mode for cases where one codeword is mapped to three or four layers.	138393
EUTRA/LTE: Downlink: LAA bursts can be configured in an overlapping way.	292235
EUTRA/LTE: Downlink: After recall, the NB-IoT DCI parameters are sometimes wrong.	305292
EUTRA/LTE: Downlink: Channel power in case of NB-IoT transmit diversity is wrong.	305307
EUTRA/LTE: Downlink: DCI format 2D in case of TDD and 20 MHz channel bandwidth is incorrect.	312300
EUTRA/LTE: Downlink: Sporadic crash if DCIs are configured for EPDCCH.	315405
EUTRA/LTE: Downlink: EPDCCH-DMRS for Extended Cyclic Prefix or in case of AP109 / distributed transmission type is incorrect.	315409
EUTRA/LTE: Downlink: CSI-RS in case of extended CP or LAA is incorrect.	317538
EUTRA/LTE: Downlink: For NB-IoT, sometimes the allocation table is not correctly updated after reconfiguring a DCI.	317729
EUTRA/LTE: Downlink: Stability issues for MBSFN.	319448, 362958
EUTRA/LTE: Downlink: LTE Dummy data (if configured) can interfere with NB-IoT inband users.	321714
EUTRA/LTE: Downlink: The number of physical bits is sometimes wrong for PDSCH with transmit diversity.	323480
EUTRA/LTE: Downlink: The DCI format 1C content is wrong in Auto Mode for LAA.	323492
EUTRA/LTE: Downlink: PDSCH CRC check fails in some cases for non-User DCIs.	325130
EUTRA/LTE: Downlink: CC-RNTI DCI1C cannot be configured reliably for cross carrier scheduling cases.	325701
EUTRA/LTE: Downlink: LAA erroneously needs K413 option.	325770, 357853
EUTRA/LTE: Downlink: Save/recall for NB-IoT channel coding settings does not work.	328741
EUTRA/LTE: Downlink: Sometimes the PDSCH scheduling mode "Auto Sequence" is not configurable.	332913
EUTRA/LTE: Downlink: Minor user interface issues for NB-IoT.	333991
EUTRA/LTE: Downlink: Minor issue for UE-specific RS with Extended CP.	338592
EUTRA/LTE: Downlink: IR soft buffer calculation failes in cases with different Tx modes in different cells and configured UE category.	343190
EUTRA/LTE: Downlink: User antenna port mapping is not configurable in case of EPDCCH with TM9/10.	343705
EUTRA/LTE: Downlink: Auto-filled values in the antenna port mapping tables can be wrong in some configurations.	348491
EUTRA/LTE: Downlink: Minor GUI issue in allocations' antenna port tables.	355268
EUTRA/LTE: Downlink: Firmware sometimes crashes when using the AutoSequence configuration dialog.	356398
EUTRA/LTE: Downlink: EPDCCH DMRS is incorrectly mapped to antenna ports.	361657
EUTRA/LTE: Downlink: Firmware stability issue.	368819
EUTRA/LTE: Downlink: DCI field length is sometimes incorrect in case of EPDCCH.	369301
EUTRA/LTE: Downlink: Minor GUI issue in DCI configuration.	369343
EUTRA/LTE: Downlink: Minor GUI issue for user antenna port mapping in case of EPDCCH.	371488
EUTRA/LTE: Downlink: Channel coding issue in case of 5 or 7 layers.	372974
EUTRA/LTE: Downlink: For DRS on carriers in LAA mode, the K113/K413 option is incorrectly required.	374523

EUTRA/LTE: Downlink: AutoDCI for format 2/2A/2B/2C/2D does not work correctly if TB1 is disabled.	378163
EUTRA/LTE: Downlink: The TBS is not correctly determined in case of Transmit Diversity for DCI 2/2A.	387005, 401540
EUTRA/LTE: Downlink: The EPDCCH REs are mapped onto CSI-RS REs.	388238
EUTRA/LTE: Downlink: The transport block size in case of 33A is wrong.	394363
EUTRA/LTE: Downlink: The Codeword Swap Flag leads to no allocation when active for DCI 2/2A.	401533
EUTRA/LTE: Downlink: MIB-NB is wrong after 64 frames.	409207
EUTRA/LTE: Uplink: Signal quality improvement for NB-IoT NPRACH necessary.	319639
EUTRA/LTE: Uplink: Calculation error in case of NB-IoT and more than one configured user.	324106
EUTRA/LTE: Uplink: NB-IoT behaves incorrectly and instable in case of more than one activated user or in case a lot of NB-IoT transmissions are configured.	328198
EUTRA/LTE: Uplink: Recalling uplink settings from older firmware versions into more recent ones does not work reliably.	339195, 350068, 325645
EUTRA/LTE: Uplink: If more than one NB-IoT transmission is configured in the NB-IoT table, some of them do not use channel coding although channel coding is enabled in the user interface.	340224
EUTRA/LTE: Uplink: Configurable range of SRS configuration is wrong.	347731
EUTRA/LTE: Uplink: USH UCI channel coding is wrong in case of more than 22 bits.	379585
EUTRA/LTE: Uplink: Support for 8 configurable users.	380793
EUTRA/LTE: Uplink: Minor issue in SCPI return parameters for 256QAM FRCs.	397117
EUTRA/LTE: Uplink: The PRACH signal is wrong for some specific configurations.	405027
EUTRA/LTE: Uplink: The scrambling is wrong in case of CE Mode B.	409471

Known Issues

Topic	Ref. No.
Save / Recall does not work for IEEE 802.11	415596
EUTRA/LTE: General: Time plan windowing is not working correctly for eMTC/NB-IoT.	333775
EUTRA/LTE: Downlink: The "Autofill" feature for PDSCH scheduling mode "Auto Sequence" is not available for TDD duplexing mode.	138029
EUTRA/LTE: Uplink: NB-IoT and eMTC data sources do not restart every transmission bundle even if "restart data" flag is not set.	340013

1.8 Version 4.00.048.23

Released: May 2017

New Functionality

Topic
K415 Cellular IOT
K416 DVB-S2 / DVB-S2X
K417 Bluetooth 5.0
K418 V5GTF

K419 LTE Release 13/14
K442 WLAN 8.02.11ax
SCPI remote control port can now be configured to allow remote control of more than 1 locally running application
Legacy WLAN dialog included (K248)
V5GTF General: filtering was improved for a better EVM
V5GTF Downlink: power xPDSCH-DMRS increased by +6dB
V5GTF Uplink: - power xPUSCH-DMRS increased by +6dB - fixed xPUSCH-DMRS when RB offset is set >0 - blanked DL Sync subframes 0 and 25
K355- OneWeb Reference Signals for both Downlink and Uplink
Eutra/LTE: All supported features are in line with 3GPP release 14, i.e. the following official 3GPP specifications are implemented: TS36.211 v. 14.1.0, TS36.212 v. 14.1.1, TS36.213 v. 14.1.0. This version is compatible with Rohde & Schwarz EUTRA/LTE Analysis Software Version 3.4 SP1 (FSx-K100/-K101/-K102/-K103/-K104/-K105).
Eutra/LTE: Support for user defined filters in LTE.
Eutra/LTE: Alternative 36.213 TBS indices.
Eutra/LTE: Codebook indices now can be configured individually in PDSCH allocations even for "User" PDSCH allocations.
Eutra/LTE: DCI format 2D and transmission mode 10.
Eutra/LTE: DRS for downlink LAA as part of option K419.
Eutra/LTE: Enhancements to CSI-RS according to recent releases of the LTE specifications.
Eutra/LTE: Independent PHICH configuration for individual downlink carriers.
Eutra/LTE: Release 12 feature "Enhanced 4Tx Codebook".
Eutra/LTE: Release 13 downlink LAA (frame structure type 3) as part of option K419.
Eutra/LTE: RLC counter for PDSCH scheduling mode "Auto Sequence".
Eutra/LTE: Support for downlink NB-IoT (Cat-NB1).
Eutra/LTE: Support for the EPDCCH channel.
Eutra/LTE: Release 14 uplink 256QAM as part of option K419.
Eutra/LTE: Support for eMTC channels PUSCH, PUCCH and PRACH.
Eutra/LTE: Support for NB-IoT channels NPUSCH and NPRACH in inband, guard band and standalone modes.

Fixed Issues

Topic	Ref. No.
Several issues regarding support of wideband SMW	235011
File transmission to BTC	305828
Eutra/LTE: Discretely presetting the parameter "cut off frequency factor" (in filter optimization mode Best ACP) could cause the value to be wrong.	138577
Eutra/LTE: Fix for uplink or downlink carrier aggregation cases with disabled PCell.	251863
Eutra/LTE: On very high data rates for PDSCH or PUSCH the software could crash.	225307
Eutra/LTE: DCI bug fixes for DL carrier without associated uplink carrier.	137659
Eutra/LTE: Fix for Auto Sequence mode "Target Code Rate".	184535
Eutra/LTE: Fixed GUI behavior of DCI configuration for SPS.	217409
Eutra/LTE: Fixes and improvements for downlink carrier aggregation with mixed duplexing or mixed TDD settings.	186440
Eutra/LTE: Improved GUI behavior of UL DCI RBA/MCS in case of PDSCH scheduling mode "Auto Sequence".	190868/197234

Eutra/LTE: In case of PDSCH scheduling mode "Auto Sequence" together with carrier aggregation, the DCI templates were possibly constructed for the wrong cell index.	191165/209472
Eutra/LTE: In special cases configured DCIs were missing after recall.	243316
Eutra/LTE: In special cases the PDCCH region was not adapted correctly in special subframes.	227772
Eutra/LTE: Minor CRS fix for TDD special subframe config 9.	255377
Eutra/LTE: Minor fix for CRS reservation in case of TDD.	278479
Eutra/LTE: Recalling setup files from older firmware versions into recent ones did not reliably work in case of TDD with PDSCH scheduling modes AutoDci or Autosequence.	253464
Eutra/LTE: The DCI coding of the Downlink Assignment Index (DAI) was incorrect in case of MBSFN.	147320
Eutra/LTE: The range of DCI CCE index could be wrong in case five carriers were active.	224484
Eutra/LTE: The range of the user codebook index was sometimes wrong.	198356
Eutra/LTE: Bugfix for power reference mode UL Burst in case of SRS-only signals.	273863
Eutra/LTE: Loading TDD setup files from older firmware versions in newer firmware versions could cause corrupt settings.	216583
Eutra/LTE: PRACH subframe states have not been saved to setup files.	215867
Eutra/LTE: SRS in subframes with PUCCH formats 1,1a,1b,3 was not configurable.	229426
Eutra/LTE: The "Autofill" feature for PDSCH scheduling mode "Auto Sequence" is not yet available for TDD duplexing mode.	138029

Changed Behavior

Topic	Ref. No.
New format of application settings files (s. note below)	
Eutra/LTE: Configurable range of carrier power was extended.	289511
Eutra/LTE: MBSFN can be enabled in PDSCH scheduling mode "Auto/DCI".	254718
Eutra/LTE: The configuration of user specific antenna port tables (for user specific RS) can now be done independetly for cases with different numbers of layers.	193153

New format of application settings files

Due to modifications in the underlying software technology WinIQSIM2 now stores application settings in a new file format (extension: “.savrcltxt”). The program offers to load settings stored with previous versions of WinIQSIM2 (extension: “.savrcl”) and will convert them into the new file format. The original files will be deleted in the process.

Please make backup copies of your settings files if you plan to go back to an earlier version of WinIQSIM2.

1.9 Version 3.50.082.25

Released: August 2016

New Functionality

Topic
K412 LTE Release 11 and Enhanced Features
K413 LTE Release 12
K441 IEEE 802.11ad
K407 Beidou 1 Satellite
Support for SMW200A wideband options
New UI-design
Context menu with SCPI recording etc.
SW version now included in waveform file
Custom Digital Modulation: easy method to generate CW by selecting “CW in Baseband” from standard menu
NFC: maximum number of command blocks extended to 300
NFC: support for EMV Type A and EMV Type B
Table editors are now more user-friendly
Several improvements handling multi segment waveforms
Bluetooth: new parameter “Slot timing”
Improved operation: selection of digital standard in baseband block starts with last used entry
WLAN: added beacon frames for 11b and HT capability
Remote: “value out range” error message now contains add. Information
Improved error message after incomplete SCPI commands
Custom digital modulation: support of QAM4096
Accelerated calculation of long waveforms (e.g. 3GPP-FDD)
IEEE 802.11 WLAN : sub-standard (801.11 a/g, b/g, p/j, n, ac) selectable
Eutra/LTE: Downlink transmission mode 9
Eutra/LTE: Downlink DCI format 2C
Eutra/LTE: Downlink DCI format 1C for eIMTA
Eutra/LTE: Downlink CSI-RS
Eutra/LTE: Uplink carrier aggregation
Eutra/LTE: New release 12 TDD special subframe configurations
Eutra/LTE: Uplink MIMO (Uplink PUSCH transmission mode 2)
Eutra/LTE: Aperiodic SRS (SRS trigger type 1)
Eutra/LTE: Marker type "System Frame Number Restart"
Eutra/LTE: Increased the maximum uplink UCI pattern lengths according to release 11 and release 12
Eutra/LTE: PDSCH scheduling mode "Auto Sequence"
Eutra/LTE: Downlink 256QAM

Fixed Issues

Topic	Ref. No.
Missing support for NI-Visa versions >9	137730
LAN connection on block diagram drawn crossed out	201788
Corrupted DigMod oversampling display	208237
Eutra/LTE: Fixes for downlink cross carrier scheduling	

Changed Behavior

Topic	Ref. No.
Eutra/LTE: Discontinued support for filter optimization mode "Balanced EVM and ACP"	137730
Eutra/LTE: Uplink user equipment mode "Rel. 10" was renamed to "LTE-Advanced"	201788

1.10 Version 2.20.360.405.01

Released: April 2014

Support of SGMA Vector RF Source SGT100A

1.11 Version 2.20.360.405

Released : July 2013

New Functionality

Topic	Ref. No.
New Standard NFC (K289)	11476
Support for SMW200A	11477
Support for SMBV options K511, K512, K521, K522	10546

Fixed Issues

Topic	Ref. No.
SMBV: MCCW carrier spacing with band width 160 MHz	10602
AFQ100B: Insufficient MCCW spacing	10880
Improved error messages when starting waveforms	11107
Import: Cannot connect to NPR	11719

1.12 Version 2.20.360.204

Released : September 2012

New Functionality

Topic	Ref. No.
New Standard LTE Release 10 (Advanced)	10319
New Standard 1xEV-DO Rev. B	10320
GSM sequence length setting for mode Framed(Double)	10288

Resolved Issues

Topic	Ref. No.
SMBV: Clock rate limitation to 100MHz	10301

1.13 Version 2.20.230.162

Released: April 2012

New Functionality

- Import Function available again
- IEEE 802.11 AC 160 MHz
- Simultaneous execution with SGMA-GUI

1.14 Version 2.20.230.99

Released: November 2011

New Functionality

- New Standard Galileo
- New Standard LTE Release 9
- New Standard IEEE 802.11 AC
- New Standard Glonass

Fixed Issues

- Portmapper and installation problems

Known Issues

- Restricted sample count for vector and constellation graphics

- Graphics zoom and cursor functions unavailable
- Import Function unavailable

1.15 Version 2.10.111.91

Released: April 2010

New Functionality

- New standard DAB/T-DMB
- New standard Tetra 2
- Support for EX-IQ-Box
- Remote control for SMBV (via browser)
- Support for Windows Vista and Windows 7

Fixed Issues

Constellation diagram now working properly

1.16 Version 2.05.222.33

Released: December 2008

New Functionality

- New standard Bluetooth
- New standard GPS
- New standard EDGE+

Fixed Issues

SMATEs were not found by a Scan

1.17 Version 2.05.104.57

Released: September 2008

New Functionality

- Support for SMBV

Fixed Issues

MCCW support for AFQ 100B bandwidth

1.18 Version 2.05.104.53

Released: August 2008

New Functionality

- New standard UWB MB-OFDM
- New standard HSPA+
- Support for CMW and AFQ 100B

1.19 Version 2.04.244.14

Released: November 2007

New Functionality

- New standard IEEE 802.11n
- New standard 1xEV-DO

2 Installing the Software

2.1 Uninstall old software version (skip, if this is a first-time installation)

To uninstall a previous version of WinIQSIM2 click on the Windows Start button and go to Settings / Control Panel / Add or Remove Programs. Then select the previously installed version of WinIQSIM2 to uninstall it.

2.2 Install new software version

Supported operating systems:

Windows 10, version 1607 "Anniversary Edition" and later

Administrator rights are necessary for installation and startingWinIQSIM2.

- Uninstall any previous version of WinIQSIM2 before installing the new software.
- In Windows Explorer double-click WinIQSIM2_v.vv.vvv.vv.x64.exe and follow instructions.

3 Customer Support

Technical support – where and when you need it

For quick, expert help with any Rohde & Schwarz equipment, contact one of our Customer Support Centers. A team of highly qualified engineers provides telephone support and will work with you to find a solution to your query on any aspect of the operation, programming or applications of Rohde & Schwarz equipment.

Up-to-date information and upgrades

To keep your instrument up-to-date and to be informed about new application notes related to your instrument, please send an e-mail to the Customer Support Center stating your instrument and your wish. We will take care that you will get the right information.

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