R&S® CMW500
CDMA2000™ 1XRTT and 1xEV-DO™
Release Notes
Software Version 3.2.81

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1 Information on the Current Version and History

1.1 Version 3.2.81

Firmware package contents

Material Number	Option Name	Description
1203.3050.02	CMW-KG800	CDMA2000™ 1xRTT Generator
1203.2602.02	CMW-KM800	CDMA2000™ 1xRTT Tx Measurements
1203.3109.02 1207.3603.02	CMW-KS800 CMW-KS810	CDMA2000™ 1xRTT Signaling basic CDMA2000™ 1xRTT Signaling advanced Including Rx Measurements
1203.2854.02	CMW-KM880	CDMA2000™ 1xEV-DO Tx Measurements
1203.3209.02 1207.3703.02 1207.6655.02	CMW-KS880 CMW-KS890 CMW-KS881	CDMA2000™ 1xEV-DO Rev 0, A Signaling basic CDMA2000™ 1xEV-DO Rev 0, A Signaling advanced CDMA2000™ 1xEV-DO Rev B Signaling basic Including Rx measurements
1207.8605.02	CMW-KS888	CDMA2000™ 1xEV-DO and 1xRTT hybrid mode

New Functionality

- none

Modified Functionality

- none

Improvements

- CDMA2000™ 1xRTT Measurements: List Mode Overdriven Segment Fix
  - Previous release had a behavior where an overdriven segment would stop the list mode operation and return INV for all segments.
  - This release changes this behavior to complete all segments, only marking the overdriven segment as INV.

Known Issues

- none

2 Modifications to the Documentation

The current documentation is up-to-date.

To navigate to the changed/updated sections, please look for the "What's New in this Revision" sections.

3 Release History

3.1 Version 3.2.80

Changes compared to Version 3.2.70

- CDMA2000™ 1xRTT and 1xEV-DO Measurements:
  - Added IQ Analyzer measurement (Constellation and Vector diagrams).
- CDMA2000™ 1xRTT and 1xEV-DO Signaling:
  - External Fading.
  - Internal Fading. (requires options KE100, and KE800).
- CDMA2000™ 1xRTT Signaling:
  - Arbitrary Teleservice ID for outgoing SMS from file, with values from 0000 through 9999.
  - Reconfiguration of 1st Service Option and Radio Configuration during a connection.
  - Preconfiguration of 1st Service Option and Radio Configuration during a connection, for next connection.
  - The SCPI operation of these features is kept as it was.
- CDMA2000™ 1xEV-DO Signaling:
  - eHRPD/HRPD user selection for preferred packet mode.
  - eHRPD/HRPD indicator during mobile connection.
  - Reverse power control 'Pattern' selection for power control bits.

3.2 Version 3.2.70

Changes compared to Version 3.2.60

- CDMA2000™ 1xRTT and 1xEV-DO Measurements:
  - Unit for Adjacent Channel Power results can now be set for relative (dBc, default) and absolute (dBm) values, on a per-offset basis.
  - Added another set of limits for the results that are selected to be displayed as absolute (dBm).
  - List mode: Added "List Mode View". After a list mode run, the most important results can be viewed in a list per segment.
  - List mode: Added the possibility to configure separate CMWS connectors for each segment.
- CDMA2000™ 1xRTT and 1xEV-DO Signaling:
  - Online manual now describes the remote commands to access the "RX Power" indicator for CDMA2000 1xRTT and 1xEV-DO signaling.

- CDMA2000™ 1xRTT Signaling:
  - Fixed occasional speech "mute" effect.
  - Improved stability for speech WB operation mode settings in Service Option 73

3.3 Version 3.2.60

Changes compared to Version 3.2.21

- CDMA2000™ 1xRTT Signaling: User specific pattern in the power control bits setting in Reverse Power Control
- CDMA2000™ 1xRTT Signaling: SMS, including CMAS (requires option CMW-KS170 - requires Base release 3.2.40)
- CDMA2000™ 1xRTT and 1xEV-DO Signaling: "RX Power" quality indication
- CDMA2000™ 1xRTT Signaling: Extended range for SCH data rate
- CDMA2000™ 1xRTT and 1xEV-DO Signaling: Multiple end to end connections used by different signaling instances allowed in parallel
- CDMA2000™ 1xRTT Measurements: Speech activity pie chart
- CDMA2000™ 1xRTT Measurements: Speech activity results as percentages
- CDMA2000™ 1xEV-DO Signaling: Additional neighbor cell settings

3.4 Version 3.2.21

Changes compared to Version 3.2.20

- CDMA2000™ 1xRTT/1xEV-DO Tx Measurements
  - Adjacent Channel Power filter shape for resolution bandwidths 100 kHz and 1 MHz changed from Gaussian to Nyquist shape
  - Performance improvements for the Adjacent Channel Power
- CDMA2000™ 1xRTT/1xEV-DO Signaling
  - General stability enhancements

3.5 Version 3.2.20

Changes compared to Version 3.2.10

- CDMA2000™ 1xRTT Tx Measurements
  - Adjacent Channel Power now supports 20 offsets, and per offset selectable RBW filters from 1 kHz to 1.23 MHz
- CDMA2000™ 1xEV-DO Tx Measurements
  - Adjacent Channel Power now supports 20 offsets, and per offset selectable RBW filters from 1 kHz to 1.23 MHz

- CDMA2000™ 1xRTT Signaling
  - Support for more MS Info and MS Capabilities, including Global Emergency Call and MEID support.
  - Added support for service options 68, 70, 73
  - Added support for speech codecs
- CDMA2000™ 1xRTT Rx measurements
  - Added Speech Activity display
- Bug fixes

3.6 Version 3.2.10

Changes compared to Version 3.0.21

- CDMA2000™ 1xRTT Signaling
  - Added support for service options 68, 70, 73
  - Added support for speech codecs
- CDMA2000™ 1xRTT Rx measurements
  - Added Speech Activity display
- Bug fixes

3.7 Version 3.0.21

Changes compared to Version 3.0.20

- Bug fixes

3.8 Version 3.0.20

Changes compared to Version 3.0.13

- CDMA2000™ 1xRTT Signaling
  - prototype support for service options 68, 70, 73
  - Added Speech Activity Rate display
  - Added support for end-to-end data (SO33)
  - Added support for SO32 and SCH0
- CDMA2000™ 1xEV-DO Signaling
  - Added support for EV-DO to LTE reselection
  - Added support for Network Identity and Time Zone settings

  - Enabled End-to-End data for multi-carrier Rev.B

- CDMA2000™ 1xRTT Tx Measurements
  - CDP/CDE redesign
  - Added limit flags and :CALC commands for OLTR limits

- CDMA2000™ 1xEV-DO Tx Measurements
  - CDP/CDE redesign
  - Added limit flags and :CALC commands for OLTR limits

- CDMA2000™ 1xEV-DO Rx Measurements
  - Added RLP and IP statistics measurement
  - FER: Report and display erased Frames

3.9 Version 3.0.13

Changes compared to Version 3.0.12

- Bug fixes

3.10 Version 3.0.12

Changes compared to Version 3.0.12

- Bug fixes

3.11 Version 3.0.11

Changes compared to Version 3.0.10

- Bug fixes

3.12 Version 3.0.10

Changes compared to Version 2.1.20

- CDMA2000™ 1xRTT Signaling
  - Added support for hybrid mode on one or two SUUs (requires KS888)
  - Advanced Time Settings
  - Added support for LTE to CDMA2000™ 1xRTT redirection
  - Supports implicit channel handoff
  - Added support for parameters IMSI_11_12, and Wildcard
  - Added support for parameters Active Candidate, Neighbor, Remaining Window

  - Supports settings necessary for Access Probe measurements (cf. application note 1CM99)
  - Redesign of MS Info and SMS Info trees

- CDMA2000™ 1xEV-DO Signaling
  - Added support for hybrid mode on one or two SUUs (requires KS888)
  - Advanced Time Settings
  - Added support for LTE to CDMA2000™ 1xEV-DO redirection
  - Supports implicit channel handoff
  - Simplified packet application selection
  - Supports settings necessary for Access Probe measurements (cf. application note 1CM99)
  - (engineering feature) end-to-end data for Rev.0 (DPA) and Rev.A (EMPA)
  - (engineering feature) eHRPD support
  - (engineering feature) RLP measurement

- CDMA2000™ 1xRTT Tx Measurements
  - Added Open Loop time response measurement (OLTR)
  - Added Channel Time Offset and Channel Phase Offset measurements
  - Added "vertical" list mode commands

- CDMA2000™ 1xEV-DO Tx Measurements
  - Added Open Loop time response measurement (OLTR)
  - Added relative and absolute measurement display for multicarrier measurements (ACP, OBW, and spectrum)

3.13 Version 2.1.20

Changes compared to Version 2.0.10

- CDMA2000™ 1xRTT Signaling
  - Added Geo Location settings
  - Added display of incoming SMS

- CDMA2000™ 1xEV-DO Signaling
  - Improved closed loop power control
  - Separate measurement tasks for PER and throughput measurements
  - Added support for Rev.B (up to 3 carriers within 8 MHz bandwidth)
  - 20 dB adjustable carrier power on reverse link
  - Multicarrier handoffs

- CDMA2000™ 1xRTT Tx Measurements
  - Added possibility for power measurement without demodulation

- CDMA2000™ 1xEV-DO Tx Measurements

  - Added possibility for power measurement without demodulation
  - Added OBW (occupied bandwidth) measurement for Rev.B multicarrier with support for up to three carriers and automatic identification of adjacent carriers.

- CDMA2000™ 1xEV-DO Rx Measurements
  - FMCTAP and RMCTAP
  - PER measurements for each carrier
  - Throughput measurements for each carrier

3.14 Version 2.0.10

Changes compared to Version 1.0.15.24

- CDMA2000™ 1xRTT Signaling
  - Improved SMS file management
  - Avoid signaling Unit restart when switching between 1xRTT and 1xEV-DO
- CDMA2000™ 1xEV-DO Signaling
  - Avoid signaling Unit restart when switching between 1xRTT and 1xEV-DO
- CDMA2000™ 1xRTT Tx Measurements
  - Added channel power measurement
- CDMA2000™ 1xEV-DO Tx Measurements
  - Added channel power measurement

3.15 Version 1.0.15.24

Changes compared to Version 1.0.15.21

- CDMA2000™ 1xEV-DO Tx Measurements
  - Added Ack channel filter for subtype 0

3.16 Version 1.0.15.21

Changes compared to Version 1.0.15.20

- Bug fixes

3.17 Version 1.0.15.20

Changes compared to Version 1.0.15.0

- CDMA2000™ 1xRTT Signaling
  - Improved Signal On/Signal Off time
  - Improved layout of connection control menu
  - Added connection status logging
- CDMA2000™ 1xEV-DO Signaling
  - Improved Signal On/Signal Off time
  - Improved layout of connection control menu
  - Added connection status logging
- CDMA2000™ 1xRTT Tx Measurements
  - Added multi evaluation list mode (MELM) functionality, (per segment) supporting all modulation results, channel power, channel time offset, channel phase offset, ACP.
- CDMA2000™ 1xEV-DO Rx Measurements
  - Added forward link throughput measurement
- CDMA2000™ 1xRTT Generator
  - Added support for non-zero long code mask
  - Increased maximum possible output power

3.18 Version 1.0.15.0

Changes compared to Version 1.0.10.50

- CDMA2000™ 1xRTT Signaling
  - Initial publicly available release
- CDMA2000™ 1xEV-DO Signaling
  - Initial publicly available release
- CDMA2000™ 1xRTT Rx Measurements
  - Initial publicly available release
- CDMA2000™ 1xEV-DO Rx Measurements
  - Initial publicly available release
- CDMA2000™ 1xRTT Generator
  - Initial publicly available release

4 Open Source Acknowledgement

This instrument firmware makes use of valuable open source software packages. The most important of them are listed below together with their corresponding open source license. The verbatim license texts are provided in the following chapters.

Open Source Project	Copyright Holder
Hostapd, 2002-20013	Jouni Malinen <j@w1.fi>

This product includes cryptographic software written by Eric Young (eay@cryptsoft.com) and software written by Tim Hudson (tjh@cryptsoft.com).

Rohde & Schwarz would like to thank the open source community for their valuable contribution to embedded computing. The source code of the open source packages is available on request.

4.1 hostapd

```
hostapd - user space IEEE 802.11 AP and IEEE 802.1X/WPA/WPA2/EAP
      Authenticator and RADIUS authentication server
=================================================================

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