

## Software Package for Measuring 1xRTT



Anritsu Company introduced a software package and hardware option for measuring 1xRTT that provides fast, accurate analysis of cdma2000 wireless handsets and devices. The cdma2000 1xRTT solution can be used with Anritsu's MT8801C or MT8802A Radio Communications Analyzers to measure key transmitter parameters quickly and easily, presenting cellular handset manufacturers, wireless device manufacturers, carriers, and services companies with the first cdma2000 testing solution to support fast forward power control and high speed packet data testing.

The Anritsu 1xRTT solution is capable of conducting 1xRTT tests with call processing at data rates up to 307.2 kbps with Service Option 32 (SO32), or Test Data Service Option (TDSO). In addition to supporting SO32 (TDSO), the solution supports SO1, SO2, SO3, SO9, SO33, and SO55 service options. The 1xRTT hardware and software allows the MT8801C or MT8802A to simulate a 1xRTT base station and establish a call in RC1 through RC5 configurations. All measurements are made in accordance with IS-2000 and IS-98-D standards.

A new scheme introduced in cdma2000 is fast forward power control, which is designed to reduce the amount of errors when transmitting data from the base station to the mobile. Supporting fast forward power control, the Anritsu 1xRTT solution monitors and logs the power control bits (PCB) received from the mobile station that allows designers to verify proper PCB transmission. Users can retrieve PCBs over GPIB or display them onscreen. With fast forward power control enabled, the 1xRTT base station simulator responds to the power control bits sent by the mobile, thus creating a real-world scenario.

Additional call processing functions include: Registration, Mobile Origination, Mobile Release, Mobile Loopback Calls (SO2, SO9, SO55), Voice Loopback (SO1, SO3), Reporting of Protocol Revisions MIN\_P\_REV and P\_REV, Reporting of Mobile's P\_REV, Quick Paging Channel, MSID Reporting, Network Origination, and Network Release. In addition, gains can be set in call processing for all walsh channels, including pilot, sync, paging, and traffic (fundamental and supplemental). Orthogonal Channel Noise Simulator (OCNS) can be enabled and disabled as well.

Transmitter tests include carrier frequency, carrier frequency error, waveform quality ( $\rho$ ), timing error ( $\tau$ ), RMS and peak vector error, phase error, magnitude error, origin offset, and RF power. Receiver tests include frame error rate (FER) up to 307.2 kbps.

The cdma2000 1xRTT solution option complements the existing testing capabilities

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of the radio communications analyzers. Both the MT8801C and MT8802A analyze all the major 2G and 2.5G standards. The 1xRTT software and hardware can co-exist with other systems such as GSM, GPRS, HSCSD, IS-136 and AMPS in the same radio communications analyzer. It is fully compatible with any MT8801C or MT8802A testers.

The MT8802A and MT8801C Radio Communication Analyzers, which cover 300 kHz to 3 GHz, combine several instruments in one for accurate measurements of today's handsets. Featuring GPIB and RS-232C interfaces, both instruments can be incorporated easily into automated production lines or on-site automated testing systems. They are also well suited for R&D and maintenance applications.

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