

BTS-113 Femtocell Pilot Production System

Introduction

Benetel has developed production test software to test femtocell products with a range of test profile options such as UMTS, CDMA2000 and GSM. BTS-113 is an entry level Femtocell Production System aimed at low volume production. In the standard configuration the Femtocell test software is supplied on an industrial PC for use with a manual test enclosure. As volume requirements increase the software provides a platform to employ Benetel's high volume parallel test system, BTS-114.

Product Features

The latest UMTS version of the production test software has been configured to test PICOCHIP's PC8209-302 Chipset in Band 1 and HSDPA+. The software is written in National Instruments' LabVIEW and TestStand, provided as executable code but with flexibility for user modification and development. The following features are included within the standard configuration of the test software:

User Management

- Graphical user interface
- Test limit management
- Test sequencer

Basic Functionality Tests

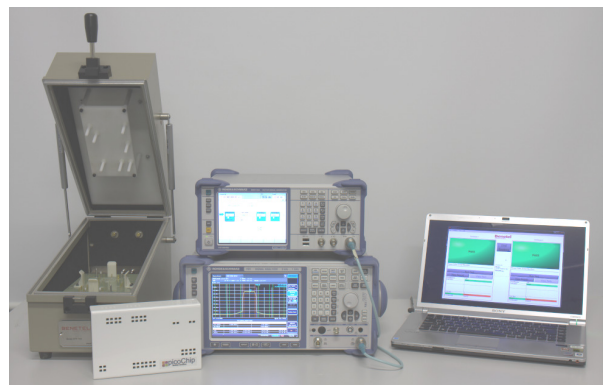
- Record UUT serial number
- Date and time stamp

Receiver tests

- RX Calibration
- NF
- RSSI
- Sensitivity

Transmitter Tests

- PA Calibration
- Output Power
- EVM/ Rho
- ACLR
- PCDE
- Frequency error
- Occupied Bandwidth
- Spectrum emission mask



Optional Configuration Items

The following optional features and additional tests can be provided by Benetel:

- Pneumatic RF enclosure
- Test fixture
- Automated fixture calibration routines
- Over the air testing
- Remote log-in
- Results database
- GPS test profile
- 3GPP Band 2/5 calibration and test
- Customer Specific Diagnostic test
- Customer Specific Application code download

Recommended Test Equipment

Benetel utilise the R&S[®]SMBV100A vector signal generator, R&S[®]FSV signal and spectrum analyser and R&S[®]NRP-Z11 Power Sensor. All units meet the requirements of volume production and offer an excellent price/ performance ratio.



R&S[®] SMBV100A Vector Signal Generator



R&S[®] FSV Signal & Spectrum Analyzer

The R&S[®]SMBV100A has the capability to test UMTS, CDMA2000, WiMAX and LTE. The R&S[®]FSV is up to five times faster than signal analysers of the same class. The R&S[®]NRP-Z11 is a universal RF Power Sensor with a dynamic range of 90dB. All test instruments are based on R&S[®] scalable multi-standard platforms enabling Benetel to offer a multi-standard femtocell test solution.

Upgrade Path to Mass Production, from BTS-113 to BTS-114

Benetel provides an upgrade path to high volume production utilizing the same R&S[®] test equipment. We provide a parallel test solution in which one test rack can provide test capacity in the region of 20K/month. The upgrade involves upgrading the software for parallel sequencing, diagnostic testing and automatic fixture control. Additional features include over the air testing, final functional test and auto calibration. A platform is already available for UMTS/HSDPA and CDMA2000 (1XEVD0) with LTE planned in 2011. Our platform approach minimizes customization which enables Benetel to provide a test solution quickly and cost effectively. Mass production test is focused on maximizing throughput while improving overall test system reliability; unit test costs are reduced; system maintenance is minimal delivering a reduced cost base and shorter lead time to market.

About Benetel

Benetel are wireless test experts with in-house RF and wireless design expertise. We follow emerging wireless standards and team up with technology innovators in order to supply test expertise for all stages of the product life cycle, from R&D to mass production. We aim to provide world beating RF test times in all that we do.