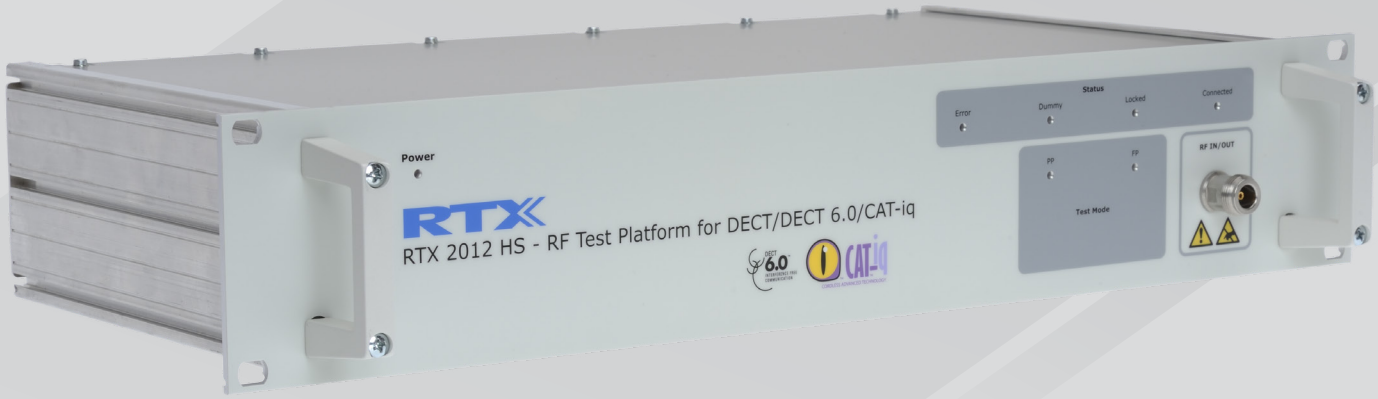
RTX
WIRELESS WISDOM



RTX2012HS

DECT RF TEST PLATFORM

WHITE PAPER

The RTX2012HS DECT RF Test Platform performs tests in signalling mode which has considerable advantages compared to non-signalling mode.

SIGNALLING MODE

Test of DECT / CAT-iq RF performance can be carried out in signaling mode or in non-signaling mode, where the signaling mode has considerable advantages compared to non-signaling mode.

From the initial stage DECT has always included a signaling mode or, in other terms, test mode function, which enables the device to be controlled through the air interface and to measure RF performance when the DECT / CAT-iq protocol is enabled.

Test mode is mandatory for all DECT / CAT-iq products and must comply with ETSI specification EN 300 175-3 and referred to by EN 301 406. It is a very useful function both for R&D and manufacturing departments.

By utilizing this test mode function, the user can test and verify RF performance with the RTX2012 HS DECT / CAT-iq RF tester without any special control of the DUT except for enabling test mode.

The RF tests, which can be performed by RTX2012 HS in test mode, are:

- Transmit power (NTP)
- Power vs. time
- Frequency offset and drift
- S field modulation
- B field modulation
- BER & FER
- Jitter
- Timing accuracy (FP)
- Packet delay (PP)

Test mode enables a loopback function in the DUT, which allows the user to perform BER (Bit Error Rate) and FER (Frame Error Rate) tests to validate the receiver path and sensitivity of the DUT while running in a mode very close to normal operation.

The only disadvantage of using test mode is the time used for establishing the connection between the DUT and the RF tester, typically 3 seconds.

The advantage of using non-signaling mode is that no time is spent on establishing connection, while the disadvantage is that the test coverage is typically reduced to NTP measurement with a power meter or spectrum analyzer.

Some chipsets require adjustment of the modulation in production, and in non-signaling mode this can only be done with a special TX test function and VSA (Vector Signal Analyzer), capable of measuring the modulation of a bursted GFSK signal.

The test coverage can be extended in non-signaling mode, but this requires implementation of special test functionality in the DUT in order to perform a pseudo-BER/FER measurement. Furthermore, the VSG (Vector Signal Generator) must be able to generate a predefined signal that the DUT receiver is able to use in order to estimate a BER/FER number.