

Agenda Item: 8.8

Source: Rohde & Schwarz, Siemens AG

Title: Proposed amendments to TS 25.142, subclause 6.2:
Maximum output power

Document for: Decision

1 Background

In a companion paper, see Tdoc R4-99368, Rohde & Schwarz and Siemens AG have made a proposal for a common structure of the test descriptions in the Technical Specifications on conformance testing. As a consequence, we started to review the test descriptions in the present drafts for TDD conformance testing, which are

TS 25.142: Base station conformance testing (TDD)
and

TS 34.122: Terminal Conformance Specification, Radio Transmission and Reception (TDD).

This review is aiming to define the tests in a consistent way for both BS and UE, making use of commonalities as much as possible. The first test description under review has been the test for maximum output power; the corresponding revised test description for the BS is given in the annex to this document. Rohde & Schwarz and Siemens AG will continue this review, covering all relevant parameters.

2 Proposal

It is proposed that the test description for BS maximum output power given in the annex should replace the present text in TS 25.142.

6.2 Maximum output power

6.2.1 Definition and applicability

Output power, P_{out} , of the base station is the power of one carrier delivered to a load with resistance equal to the nominal load impedance, when averaged (in the sense of thermal power) over the useful part of the burst (time slot).

Maximum output power, P_{max} , of the base station is the output power that the manufacturer has declared to be available at the antenna connector.

The requirements in this subclause shall apply to base stations intended for general-purpose applications.

6.2.2 Conformance requirements

In normal conditions, the base station maximum output power shall remain within +TBD dB and –TBD dB of the available power declared by the manufacturer.

In extreme conditions, the base station maximum output power shall remain within +TBD dB and –TBD dB of the available power declared by the manufacturer.

The reference for this requirement is TS 25.105 subclause 6.2.1.1.

6.2.3 Test purpose

The test purpose is to verify the accuracy of the maximum output power across the frequency range and under normal and extreme conditions for all transmitters in the BS.

6.2.4 Method of test

6.2.4.1 Initial conditions

- (1) The transmitter under test and all other transmitters of the base station (if any) are switched on.
- (2) The power of the transmitters not under test (if any) are controlled down.
- (3) Connect the power measuring equipment to the BS antenna connector.
- (4) Set the parameters of the transmitted signal according to table 6.2.4.1.1.

Table 6.2.4.1.1 Parameters of the transmitted signal for maximum output power test

| Parameter | Value/description |
|----------------------------------|--|
| TDD Duty Cycle | TS i ; $i = 1, 2, \dots, 15$: on, if i is odd; off, if i is even. |
| Number of DPCH in each active TS | TBD |
| Base station power | maximum, according to manufacturer's declaration |
| Data content of DPCH | real life (sufficient irregular) |

6.2.4.2 Procedure

- (1) Measure thermal power over the useful part of the burst,
with the useful part starting TBD chips after the data symbol start and ending TBD chips before the guard period starts, and with a measurement bandwidth of at least 5 MHz.
- (2) Average over TBD time slots.
- (3) Run steps (1) and (2) for RF channels Low / Mid / High.

6.2.5 Test requirements

The value of the measured output power, derived according to subclause 6.2.4.2, shall be within the tolerance defined in subclause 6.2.2.