16 Reception time tracking speed

16.1 Definition and applicability

Reception time tracking speed is the speed at which the MS adapts its transmit time to a change in the timing of the received signal.

The requirement and this test apply to all types of GSM 900 and DCS 1 800 MS.

16.2 Conformance requirement

If the MS determines that the timing difference with signals received from the BS exceeds 2 μs, the MS shall adjust its timebase in steps of 1/4 bit period, in intervals not less than 1 s and not greater than 2 s until the timing difference is less than 1/2 bit period at 3 dB below reference sensitivity and 3 dB less carrier to interference ratio than the reference interference ratios.
GSM 05.10, 6/6.2.

16.3 Test purpose

1) To verify that the MS adapts its transmit time to the timing of the received signal as in the conformance requirement under TUHigh propagation conditions at 2 dB above reference sensitivity level( ).

2) To verify that the MS adapts its transmit time to the timing of the received signal as in the conformance requirement under RA propagation conditions at 2 dB above reference sensitivity level( ).

NOTE: This test is performed at a level higher than in the conformance requirement because of test implementation problems.

16.4 Method of test

16.4.1 Initial conditions

The SS sets up a call according to the generic call set up procedure on a channel in the Mid ARFCN range.

The SS sets TUHigh.

16.4.2 Procedure

a) After 10 s the SS sets the input signal level to 2 dB above reference sensitivity level( ).

b) For the last second before step c) the SS takes an average receive/transmit delay of all bursts in that 1 s.

c) The SS increases the delay of the transmitted signal to the MS by a 2 bit step (about 7,4 μs) and keeps this delay for 20 s.

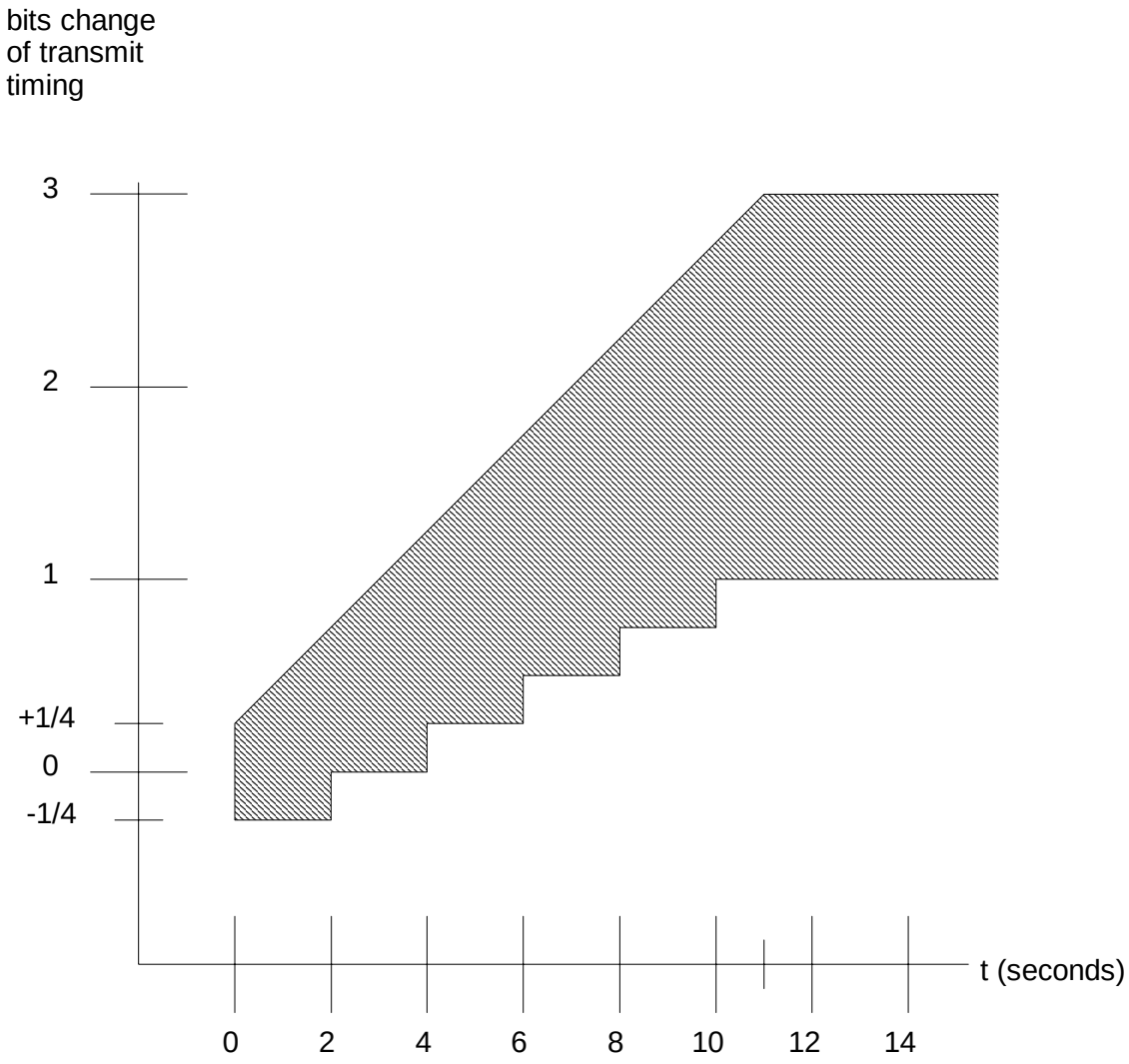
d) The SS measures the absolute receive/transmit delay for each burst.

e) The SS increases the input signal level to 5 dB above reference sensitivity level( ) and sets propagation condition RA.

f) The SS repeats steps a) to d).

16.5 Test requirement

The MS shall adjust the timing of its transmit burst back to the correct receive/transmit timing delay. All burst timings shall be within the shaded part of 16.1.



t=0 is the time at which the SS makes the transmission timing step change in c) of subclause 16.4.2.

Figure 16.1