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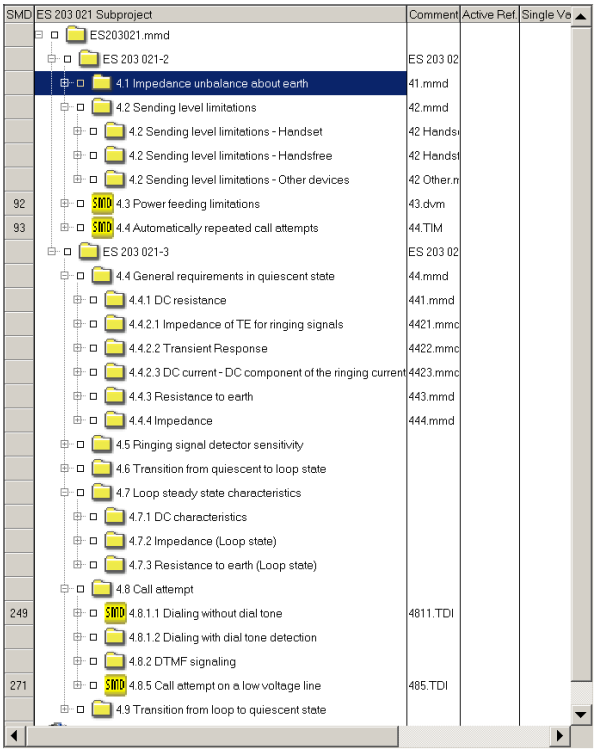
DATA SHEET

ES 203 021 (Code 6782)
ACOPT22 (Code 6847)



ES 203 021 (ACOPT22) measurement tree in analysis system ACQUA

OVERVIEW

The ETSI Standard ES 203 021 is the successor of the standard TBR 21 and like its predecessor specifies a series of harmonized requirements for the analog connection of terminals to existing public telephone networks in Europe.

It covers all relevant requirements of Directive 91/263/EEC regarding terminals which are capable of establishing or receiving a switched connection via Dual Tone Multi Frequency (DTMF) signalling.

The measurements required by Standard ES 203 021 have been implemented by HEAD acoustics into an automated test suite for the communication analysis system ACQUA.

DESCRIPTION

The measurements implemented in the test suite ES 203 021 (ACOPT22) cover all requirements for approval of analog terminals according to ETSI standard ES 203 021 (except for measurements above 200 kHz). The measurements may be changed, adapted or modified if needed in order to conduct additional tests. The tests can be combined in any way to create individual test sequences.

ES 203 021 (ACOPT 22) is used in combination with the Advanced Communication Quality Analysis system ACQUA and the calibrated front ends MFE III.1 and MFE V.1. With its predefined measurement descriptors and automated measurement sequences ES 203 021 (ACOPT22) allows the fast and easy acquisition, analysis and documentation of measurement data.

APPLICATIONS

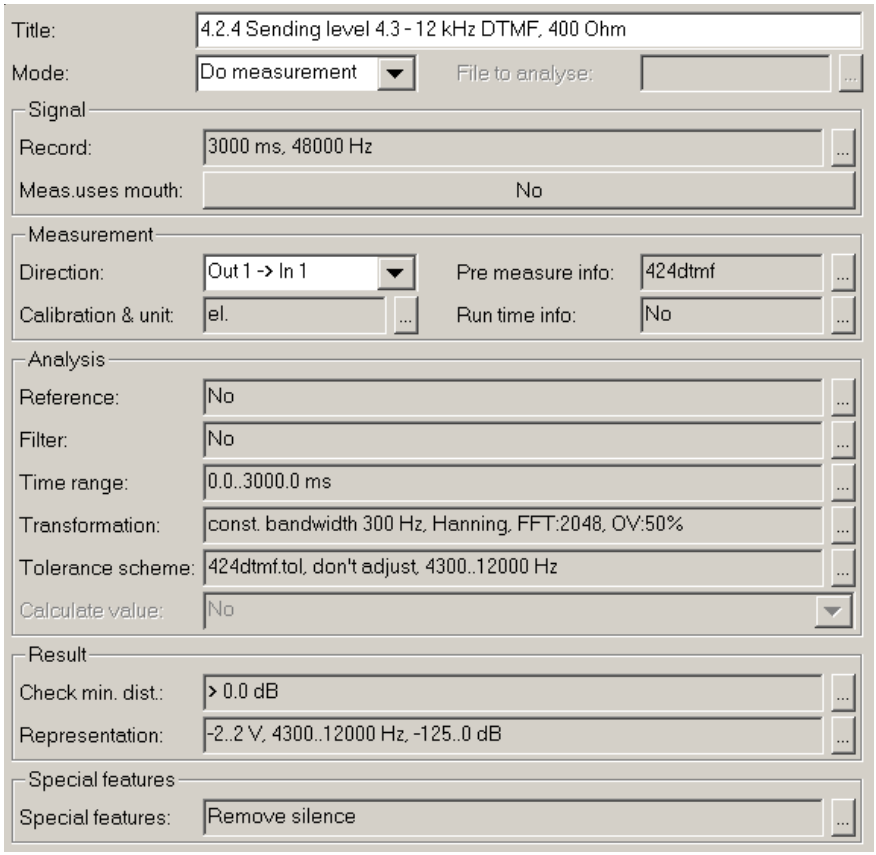
- **Conformance testing** of analog DTMF-capable terminals according to ETSI standard ES 203 021 Rev. 2.1.1

MEASUREMENTS

The measurements included in ES 203 021 (ACOPT22) are summarized in the following list (numbering according to standard):

ES 203 021-2
4.1.1 Impedance unbalanced about earth
4.1.2.1 Longitudinal conversion loss
4.1.2.2 Output Signal Balance, Handset
4.1.2.2 Output Signal Balance, Handsfree
4.1.2.2 Output Signal Balance, Other devices
4.2.1 Mean sending level, Handset
4.2.1 Mean sending level, Handsfree
4.2.1 Mean sending level, Other devices
4.2.2 Instantaneous volt., Handset
4.2.2 Instantaneous volt., Handsfree
4.2.2 Instantaneous volt., Other devices
4.2.3 Sending level, 10Hz bandwidth
4.2.4 Sending level 4.3 - 200 kHz during DTMF signal
4.2.4 Sending level 4.3 - 200 kHz during communication
4.3 Power feeding limitations
4.4 Automatically repeated call attempts

ES 203 021-3
4.4.1 DC resistance, TE > 1 MOhm
4.4.1 DC resistance, TE > 4 MOhm
4.4.2.1 Impedance of TE for ringing signals, TE > 4 kOhm
4.4.2.1 Impedance of TE for ringing signals, TE > 16 kOhm
4.4.2.2 Transient response
4.4.2.3 DC current - DC component of the ringing current
4.4.3 Resistance to earth, TE > 10 MOhm
4.4.3 Resistance to earth, TE > 40 MOhm (requires a sufficiently exact amperemeter)
4.4.4 Impedance
4.5 Ringing signal detector sensitivity, acoustic
4.5 Ringing signal detector sensitivity, sensor
4.5 Ringing signal detector sensitivity, automatic
4.6.1 Acceptance of break, test 1 (30 ms)
4.6.1 Acceptance of break, test 2 (500 ms)
4.6.2 Loop current characteristic
4.6.3 Ring Trip
4.6.4 On-hook to Off-hook transition with ringing without DC
4.7.1 DC characteristics
4.7.2 Impedance
4.7.3 Resistance to earth
4.8.1.1 Dialing without dial tone
4.8.1.2 Dialing with dial tone detection
4.8.2 DTMF signaling, all parameters
4.8.2.1 DTMF Frequency combinations
4.8.2.2 DTMF Signaling levels
4.8.2.3 DTMF Unwanted frequencies
4.8.2.4 DTMF Tone duration
4.8.2.5 DTMF Pause duration
4.8.5 Call attempt on a low voltage line
4.9 Transition loop to quiescent state (manual)
4.9 Transition from loop to quiescent state (automatic)



Example of ES 203 021 (ACOPT22) measurement descriptor in ACQUA analysis system

SYSTEM REQUIREMENTS

ES 203 021 (ACOPT22) requires the following system components:

- **ACQUA** Communication Analysis System (Version 2.3.300 or later) as one of the following versions:
  - Standard (Code 6810)
  - Compact systems (Code 6860.xx)
- **MFE III.1** Measurement Front End (Code 6201)
- **MFE V.1** Measurement Front End (Code 6401)
  Note: MFE V.1 with delivery date before February 2008 requires an update patch!

DELIVERY ITEMS CODE 6782

- **Measurement standard** ES 203 021 as ACQUA database, delivered on CD
- **Keyfile** on disk or CD
- **Manual**

Note: Code 6782 is only available for customers with ACOPT14 or ACOPT15!

DELIVERY ITEMS CODE 6847

- **Measurement standard** ES 203 021 as ACQUA Option 22 incl. ACQUA database, delivered on CD
- **PSB III** (Code 6001): Pulse Splitter Box (without signal conditioning), Telecom Version, including **PSH I** power unit
- **A/D-D/A converter card**, PCI, opto-insulated, 16 bit / 500 kHz, with connection cable and driver CD
- **CMX II.1** (Code 6332): cable XLR male 3pin <> LEMO 3pin, 3m
- **CMX II.2** (Code 6333): cable XLR female 3pin <> LEMO 3pin, 3m
- **2x XLR extension cable** 1.5 m
- **Keyfile** on disk or CD
- **Manual**

OPTIONS

- **UG-ES 203 021** (Code 6792): Upgrade TBR21->ES 203021

Note: Code 6792 is only available for customers with valid software maintenace and TBR 21 (ACOPT14), who want to replace TBR21 with ES 203 021!

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