# Presentation of Specification to TSG or WG

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3rd Generation Partnership Project; Technical Specification Group (TSG) Terminals; Identification of test requirements for regulatory purposes in different regions/countries (Release 4)

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**Presented for:** **Information**

**Abstract of document:**

The present document contains a collection of test requirements for 3rd Generation Terminals identified for regulatory purposes in different regions/countries.

Conformance tests aiming at assessing the quality impression of the terminal and it's features and services are assumed to be summarised in other reports.

**Changes since last presentation to Meeting # None**

First presentation

**Outstanding Issues:**

Contributions received from Japan. Further contributions expected from Europe, USA, Korea,….

**Contentious Issues:**

None

# 3GPP TR 34.910 V1.0.0 (2000-11)

*Technical Report*

# 3rd Generation Partnership Project (3GPP)
# Technical Specification Group (TSG) Terminal
# Identification of test requirements for regulatory purposes in different regions/countries
# (Release 4 )

Keywords
Testing, UMTS

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# Contents

# Foreword

This Technical Report (TR) has been produced by the 3rd Generation Partnership Project (3GPP).

The contents of the present document are subject to continuing work within the TSG T1 and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

Version x.y.z

where:

- x the first digit:
  - 1 presented to TSG for information;
  - 2 presented to TSG for approval;
  - 3 or greater indicates TSG approved document under change control.
- y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.
- z the third digit is incremented when editorial only changes have been incorporated in the document.

# Introduction

The present document contains a collection of test requirements for 3rd Generation Terminals identified for regulatory purposes in different regions/countries.

The actual test case descriptions will be contained in other documents.

Only conformance tests considered relevant for regulatory assessments of 3G terminals have been included in the present document.

The initial assumption is that regulatory assessment concentrates on assuring an optimal use of the spectrum.

Conformance tests aiming at assessing the quality impression of the terminal and it's features and services are assumed to be included in the Voluntary Conformance Test specifications.

Other conformance test specifications include:

| | |
|---|---|
| Voluntary tests | Conformance tests required by major market organisations and which are not required for regulatory assessment purposes. |
| Interoperability tests | Conformance tests required to ensure global interoperability and which are not part of the voluntary tests or not required for regulatory assessment purposes. |

Note:

Thus far, only requirements identified by the Japanese Ministry of P&T, have been received and included.

# 1 Scope

The present document contains a collection of test requirements identified for regulatory purposes in different regions/countries.

The actual test case descriptions will be contained in other documents.

# 2 References

The following documents contain provisions, which, through referenced in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.

[1] 3GPP 25.101v1.2.0: "UE Radio transmission and reception (FDD)".

[2] 3GPP S25.103v0.1.0: "RF Parameters in Support of Radio Resource Management (RRM)".

[3] 3GPP iTS-T1.001: "Logical Test Interface (FDD) Special conformance testing functions".

# 3 Terms and abbreviations

For the purposes of the present document, the following terms and abbreviations apply.

| | |
|---|---|
| AFC | Automatic Frequency Control |
| JATE | Japan Approvals institute for Telecommunication Equipment |
| TTC | Telecommunications Technical Council – Japanese regulatory organisation. |
| TBL | Telecommunications Business Law – relevant Japanese terminals requirements |
| TTC-R | TTC Report indicating requirements to Japanese P&T |

# 4 Radio Characteristics

*This section covers the requirements to the radio interface.*

## 4.1 General

## 4.2 FDD

### 4.2.1 General FDD

| Relevant section in 3GPP Spec.TS25.101 | Items for the technical requirements | Regional deviations / additions (if any) | | |
|---|---|---|---|---|
| | | Default – indicated in 3GPP Spec. | Japan | Other |
| 5.2 | Frequency Band | | | |
| 5.3 | TX-RX frequency separation | | | |
| 5.4.2 | Channel Raster | | | |
| | | | | |

### 4.2.2 Transmitter Characteristics

| Relevant section in 3GPP Spec.TS25.101 | Items for the technical requirements | Regional deviations / additions (if any) | | |
|---|---|---|---|---|
| | | Default – indicated in 3GPP Spec. | Japan | Other |
| 6.1 | For UE with integral antenna only, a reference antenna with a gain of X dBi is **assumed.** | 0dBi | Less or equal to 3 dBi | |
| 6.2 | Transmit power (Maximum output power) | | | |
| 6.3 | Frequency stability (error) | | | |
| 6.4.3 | Minimum transmit output power | | | |
| 6.5.1 | Transmit OFF power | | | |
| 6.6.1 | Occupied bandwidth | | | |
| 6.6.2.2 | Adjacent channel leakage power ratio | | | |
| 6.6.3 | Spurious emissions (transmitter effects) | | | |
| 6.8 | Modulation accuracy | | | |
| | | | | |
| | | | | |

| Requirement: | Requirement from: | 3GPP (or other) reference |
|---|---|---|
| 1. In case of transmitting via the control channel, the control channel shall be synchronized with the slot received from the base station, and UE shall transmit upon the access slot designated from the base station.<br>2. In case of transmitting via the speech channel, the speech channel shall be synchronized with the frame received from the base station, and UE shall transmit after 1024 chips delay from commencement boundary of received frame. The deviation of the commencement boundary of transmission shall be within ±1.5chips. | TTC-R article 19<br>Transmission timing | TS 34.121 (V.3.0.1)<br>**7.1.2.3???**<br>8.6.2 |

Comments: 'Test of ability to transmit at a specified slot'

## 4.2.3 Receiver Characteristics

| Relevant section in 3GPP Spec.TS25.101 | Items for the technical requirements | Regional deviations / additions (if any) | | |
|---|---|---|---|---|
| | | Default – indicated in 3GPP Spec. | Japan | Other |
| 7.3 | Static reference sensitivity level | | | |
| 7.5 | Adjacent channel selectivity | | | |
| 7.7 | Spurious response | | | |
| 7.8 | Intermodulation characteristics | | | |
| 7.9 | Spurious emissions (generated or amplified in receiver) | | | |
| | | | | |

## 4.3 TDD

### 4.3.1 General TDD

### 4.3.2 Transmitter Characteristics

### 4.3.3 Receiver Characteristics

# 5 Terminal Procedures

## 5.1 Cell Selection / Reselection

## 5.2 Setting up of connection

### 5.2.1 Call Set-up

| Requirement: | Requirement from: | 3GPP (or other) reference |
|---|---|---|
| UE shall transmit the signal, which orders call originating where it originates. | TTC-R article 17-1<br>The function to originate | TS 34.123-1 (V.1.0.1)<br>8.3.1.2.2.2 |

Comments: 'Test of the ability to send signals for Call request'

| Requirement: | Requirement from: | 3GPP (or other) reference |
|---|---|---|
| UE shall transmit the signal, which confirms answering a call incoming where it answers a call coming. | TTC-R article 17-2<br>The function to answer a call coming | TS 34.123-1(V.1.0.1)<br>8.3.1.3.3. |

Comments: 'Test of the ability to send signals for responding the call request from BS'

### 5.2.2 Restriction of outgoing calls

| Requirement: | Requirement from: | 3GPP (or other) reference |
|---|---|---|
| UE shall not transmit when it receives the signal demanding restriction of a call originating from the base station | TTC-R article 28<br>The function to secure the important communications | TS 34.123-1(V.1.0.1)<br>7.1.1 |

Comments:' Test of the ability to restrict origination on request by BS.'

### 5.2.3 Random Access Control

| Requirement: | Requirement from: | 3GPP (or other) reference |
|---|---|---|
| 1. After UE transmits the signal in the condition specified by the base station, if UE receive the Acknowledgement signal upon the timing designated by the base station (7680chips later or 12800chips later), UE shall transmit the message, 7680 chips later after receiving the Acknowledgement signal.<br>2. If UE receives the Not-Acknowledgement signal upon the timing designated by the base station, or if UE receives neither Acknowledgement signal nor Not-Acknowledgement signal, UE shall repeat the action described in paragraph I). In this case, the maximum times of the repeated actions shall be less than those designated by the base station and also less than 64 times. | TTC-R article 20<br>Random access control | TS34.123-1(V.1.0.1)<br>7.1.2.1-2. |

Comments: 'Test of Random Access Control – timing maximum number of repeated trials'

### 5.2.4 Auto-calling

| Requirement: | Requirement from: | 3GPP (or other) reference |
|---|---|---|
| If UE has the function to automatically confirm the answer from the terminal of the other party at the time of calling, then, in case of the situation that UE cannot confirm the answer, the UE shall transmit the channel termination signal and shall stop the transmission within 2 minutes after the UE sends the address signal. | TTC-R article 18-1<br>Time limitation of automatic confirmation at the time of calling | No test case identified in 3GPP specifications. |

Comments: 'Test of transmission termination in case terminals with a function to automatically confirm response '

| Requirement: | Requirement from: | 3GPP (or other) reference |
|---|---|---|
| If UE has the function of automatic redialling, the automatic redialling shall not be repeated more than three times. When, however, redialling is done more than 3 minutes after the first dialling, it is considered to be separate dialling. This requirement will be exempted in case of emergency such as fire, robbery or other urgent occasions. | TTC-R article 18-2<br>Limitation on times of automatic redialling | TS 34.123-1(V.1.0.1)<br>10.3 |

Comments: 'Test of auto-calling restrictions'

# 5.3 During call

## 5.3.1 Location Update

| Requirement: | Requirement from: | 3GPP (or other) reference |
|---|---|---|
| UE shall transmit the signal, which orders registration of the UE's location information only where the location information received from the base station does not conform to that memorized by UE. However, UE may transmit the signal when UE receives specific instruction from the base station or when the user operates the UE.<br><br>Furthermore, UE shall update and hold the location information it has memorized, when it receives a signal from the base station confirming registration of the UE's location information. | TTC-R article 22<br><br>Location registration control | TS 34.123-1(V.1.0.1)<br><br>8.2.4.1 |

Comments: 'Test of Location Update'

## 5.3.2 Switching of Channel (Channel Assignment / Handover)

| Requirement: | Requirement from: | 3GPP (or other) reference |
|---|---|---|
| UE shall switch the transmission channel to that which has been designated, when it receives the signal designating the channel from the base station. | TTC-R article 23<br>The function to obey the order from the base station to switch the transmission channel | TS 34.123-1(V. 1.0.1)<br>8.3.1.3.3.2, 8.1.3.4.1-3, 8.3.1.3.4.7, 8.1.3.5.1, 8.3.1.3.5.8 |

Comments:' Test of ability to switch to designated channel during e.g. channel assignment and HO.'

## 5.3.3 Measurement reporting

| Requirement: | Requirement from: | 3GPP (or other) reference |
|---|---|---|
| UE shall detect the received signal level of the designated control channel of the base station around the UE in accordance with the conditions designated by the base station. UE shall inform the base station of the level when the received signal level of the control channel of the base station around the UE satisfies the requirements designated by the base station. | TTC-R article 24<br>The function to inform the base station of received signal level | TS 34.123-1(V.1.0.1)<br>8.1.4.1.1 |

Comments:' Test of measurement reporting.'

## 5.3.4 'Cross talk'

| Requirement: | Requirement from: | 3GPP (or other) reference |
|---|---|---|
| If UE can connect multiple speech channels, then the crosstalk attenuation between the channels within the UE shall be 70dB or greater at the frequency of 1,500 Hz. However, it shall be 60dB or greater as for UE, which has | TTC-R article 31<br>Crosstalk attenuation | No test case identified in 3GPP specifications. |

| | | |
|---|---|---|
| the channel switching function. | | |

Comments:' For terminals with multiple telecommunication circuits (e.g. FWA). In earlier systems the crosstalk attenuation between the communication lines is measured and reported.'

### 5.3.5 Emergency Calls

| Requirement: | Requirement from: | 3GPP (or other) reference |
|---|---|---|
| Test of the ability to initiate an emergency call. | ? | ? |

Requirements:

The terminal shall demonstrate the ability to being able to initiate emergency call whenever a base station is within reach. The function shall be independent of the internal state of terminal/USIM.

### 5.3.6 Geographical Location service

| Requirement: | Requirement from: | 3GPP (or other) reference |
|---|---|---|
| Test of the ability to provide the network with the information it needs to calculate the geographical location of the terminal. | US | ? |

Requirements:

### 5.3.7 Channel disconnecting

| Requirement: | Requirement from: | 3GPP (or other) reference |
|---|---|---|
| UE shall transmit the signal, which terminates the channel where it terminates communication. | TTC-R article 17-3<br>The function to terminate communication | TS 34.123-1 (V.1.0.1)<br>8.3.1.2.6.2-4 |

Comments: 'Test of the ability to disconnecting a channel'

| Requirement: | Requirement from: | 3GPP (or other) reference |
|---|---|---|
| UE shall, when it receives a signal ordering disconnection of channel from the base station, transmit a confirmation signal and stop transmission. However, in case of the situation where the base station request otherwise, UE doesn't have to transmit a confirmation. | TTC-R article 25<br>The function to obey the order from the base station to stop transmission | TS 34.123-1(V.1.0.1)<br>8.3.1.2.4.5-7, 8.3.1.2.6.2-4, 8.3.1.3.4.3-4 |

Comments: 'Test of the ability to disconnecting a channel on command of the base station'

| Requirement: | Requirement from: | 3GPP (or other) reference |
|---|---|---|
| UE shall automatically stop transmission whereby a received signal level or communication quality is degraded. | TTC-R article 26<br>The function to automatically stop transmission, where | TS34.121<br>5.4.4<br>(T1R000157) |

| | | |
|---|---|---|
| | received signal level or communication quality is degraded | |

Comments: 'Test of the ability to stop transmission'

| Requirement: | Requirement from: | 3GPP (or other) reference |
|---|---|---|
| TE shall automatically stop transmission where it continues transmission by its failure. | TTC-R article 27<br>The function to automatically stop transmission in case of TE's failure | Currently no test case expected (manufacturer's declaration). |

Comments: 'Confirmation of the ability to disconnecting a channel. In earlier systems the ability has been declared by the terminal manufacturer in the respective application'

# 6 General Terminal capabilities for which no 3GPP test cases can be identified

## 6.1 Terminal Identity

| Requirement: | Requirement from: | 3GPP (or other) reference |
|---|---|---|
| UE's own information (the information which specifies UE and is used for setting channels) is not be able to be easily changed. Furthermore, UE's own information, except that to which the user has direct access, shall not be easily known. | TTC-R article 29<br>The function to prevent UE's own information from being changed | Currently no test case expected (manufacturer's declaration). |

Comments: 'Confirmation of MS specific information (e.g. IMEI) security. In earlier systems the terminal manufacturer has declared the ability in the respective application.'

## 6.2 General Terminal requirements identified by Japanese Ministry of P&T

| Article | Requirement | Relevant test case in 3GPP | Remarks |
|---|---|---|---|
| Article 3<br>Border of responsibility | In order to clarify the boundary of responsibility with the operator's telecommunication equipment, it is necessary to establish a border point with such facilities. The method of connection at this border point must be such that the MS can be easily cut-off from the operator's telecommunication equipment in the case of each telecommunication circuit | Currently no test case expected (manufacturer declaration). | In earlier systems the mobile terminal manufacturer has declared that the terminal can be cut off from operator's telecommunicatio n circuit by turning the power switch off. |
| Article 4<br>Restricted identification of communication leakage | No function is to be present for purposefully identifying the content of communication leaking from the operator's telecommunication equipment. | Currently no test case expected (manufacturer declaration). | In earlier systems the mobile terminal manufacturers have declared that the terminal does not provide a function to receive and identify intentionally the radio waves that are directed to other terminals. |
| Article 5<br>Restricted ringer tone | A function is to be present for preventing the generation of a ringing tone (a state of oscillation resulting from an electrical or acoustical combination) with the operator's telecommunications equipment. | No test case identified in 3GPP specifications. | In case there is a section that uses a 2-wire system to perform the sending and receiving of analog signals between part of the terminal facility and other part. In earlier systems the loss in the equipment or unit providing the 2-wire system analogue interface has been measured (howling). |
| Article 6<br>Insulation resistance, etc. | UE shall have appropriate the insulation resistance and dielectric strength between its power circuit and its box, and between its power circuits and the telecommunications facilities used for | No test case identified in 3GPP specifications. | In the case the mobile terminal is equipped with AC adapter. In earlier systems the |

| | | | |
|---|---|---|---|
| | telecommunications facilities used for telecommunications business. | specifications. | earlier systems the insulation resistance value between the power source and the equipment housing or FG, and between the source and the terminal Line1, Line2 are measured. |
| Article 7<br><br>Prevention of the occurrence of excessive acoustic shock | UE with a voice communication feature shall have a function which prevents the occurrence of excessive acoustic shock in a telephone receiver while being used for conversation. | Currently no test case expected (Manufacturer's declaration). | In earlier systems the ability has been declared by the terminal manufacturer in the respective application. |
| Article 8<br><br>Wiring, etc. | The circuit line and protective device utilized when connecting the MS to the operator's telecommunication equipment is to be suitably setup from the standpoint of preventing noise and excessive electrical current to the operator's telecommunication equipment. | No test case identified in 3GPP specifications. | In the case of mobile telephone terminals, in earlier systems it has been generally considered that there is no change they will use a powerline carrier system or electric waves in the terminal facility, so traditionally this explanation has been omitted. |
| Article 9<br><br>Radio equipment within the terminal | 1. Components within the terminal equipment which interact using radio waves are to have appropriate identification codes.<br>2. With the exception of special cases, the idle state of radio frequencies is to be assessed, and a traffic channel established only during idle status.<br>3. With the exception of special components, radio equipment is to be stored within a single housing which cannot be easily opened. | No test case identified in 3GPP specifications. | In earlier systems these items have not applied to the system radio interface, but instead to other interfaces from the terminal (e.g. Bluetooth, remote vibrator and keyboard). |

# 7 Electro Magnetic Compatibility

Radiated emissions

FFS

# 8 Safety

Acoustic shock.

FFS

| Title | Justification | Requirement from: | 3GPP (or other) Test specification reference |
|---|---|---|---|
| | | | |

# Document History

| Document history | | |
|---|---|---|
| Version | date (yyyy-mm-dd) | comments |
| V0.0.1 | 1999-10-25 | Initial document. Simple accumulation of known regulatory requirements. |
| V0.1.0 | 2000-08-29 | Includes initial regulatory requirements from Japanese Ministry of P&T |
| V1.0.0 | 2000-11-17 | Approved as v1.0.0 at T1 #9 |

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