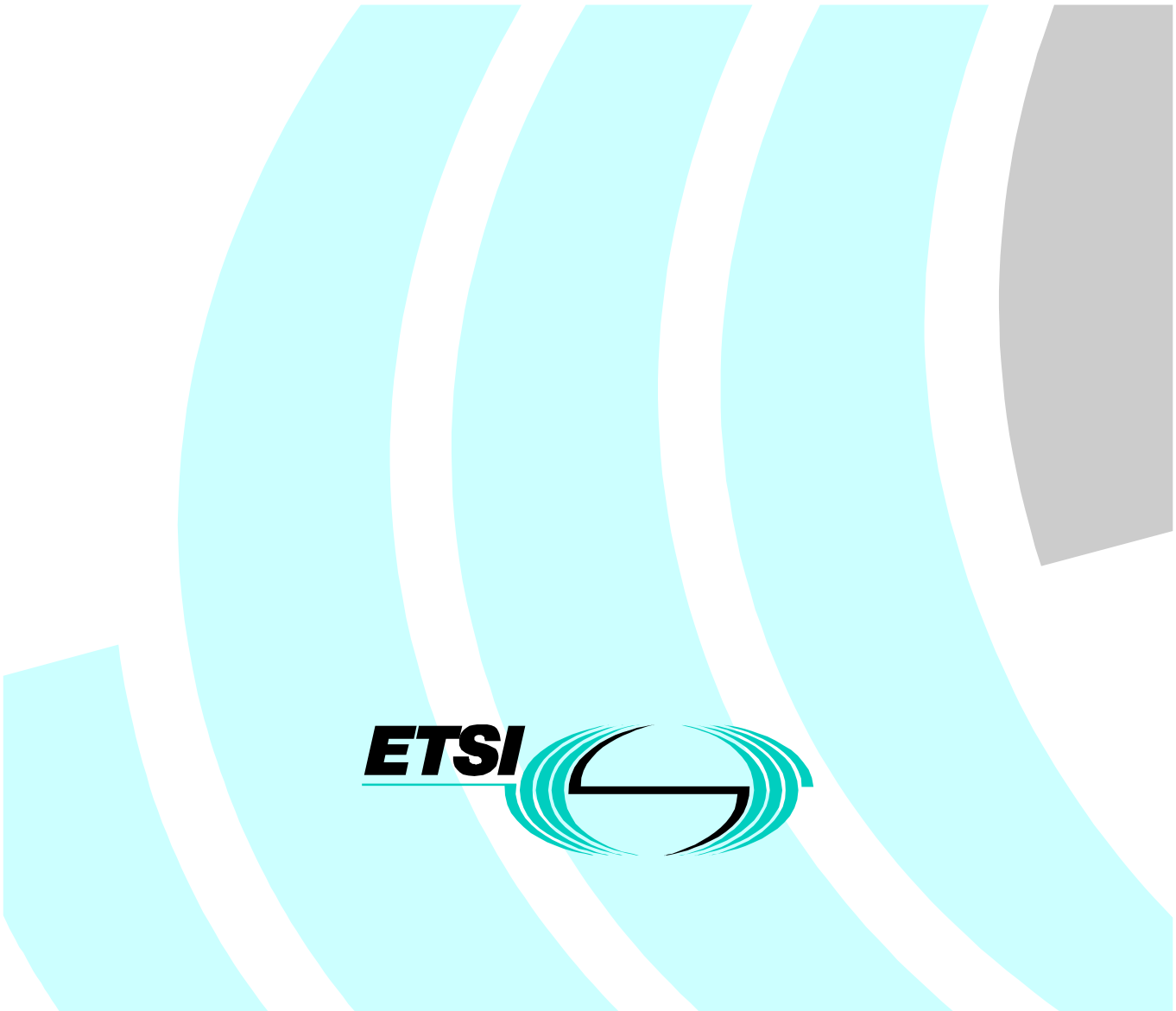
# ETSI ES 201 729 V1.1.1 (2000-02)

*ETSI Standard*

**Public Switched Telephone Network (PSTN);**
**2-wire analogue voice band switched interfaces;**
**Timed break recall (register recall);**
**Specific requirements for terminals**



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# Foreword

This ETSI Standard (ES) has been produced by ETSI Project Analogue Terminals and Access (ATA).

# Introduction

Register Recall is the ability of the network to accept a command from terminal equipment at any time during a call (except during the call set-up phase):

- either initiating association of the subscriber's line with register logic which will receive, store and act upon processing and address information; or
- initiating a switching order.

The network has to be capable of recognizing a register recall signal indicating that the subscriber has pressed the button for which the recall function has been allocated, and then, of accepting possible further instructions from the subscriber. This feature is required for both terminating and originating calls.

Terminal equipment generates a register recall signal by breaking the normal DC loop for a specific period.

Previously another register recall signalling method using an additional wire connected to earth was used. This signalling method still exists in some private installations and is not described in the present document.

NOTE: A large number of networks accept the signal representing digit "1" of loop disconnect dialling as a valid signal. This was considered an additional facility from the network and precluded in the present document, which is intended to be a harmonizing document covering the largest possible market.

# 1 Scope

The present document specifies the technical characteristics (electrical interface requirements) to be provided by Terminal Equipment (TE) to be connected to a 2-wire analogue interface of the PSTN or equivalent interfaces at which network register recall facility is intended to be performed by means of a timed break recall signal, insofar as they are particular to this signalling function.

# 2 References

Void.

# 3 Definitions and abbreviations

## 3.1 Definitions

For the purposes of the present document, the following terms and definitions apply, they should be considered together with figure 1.

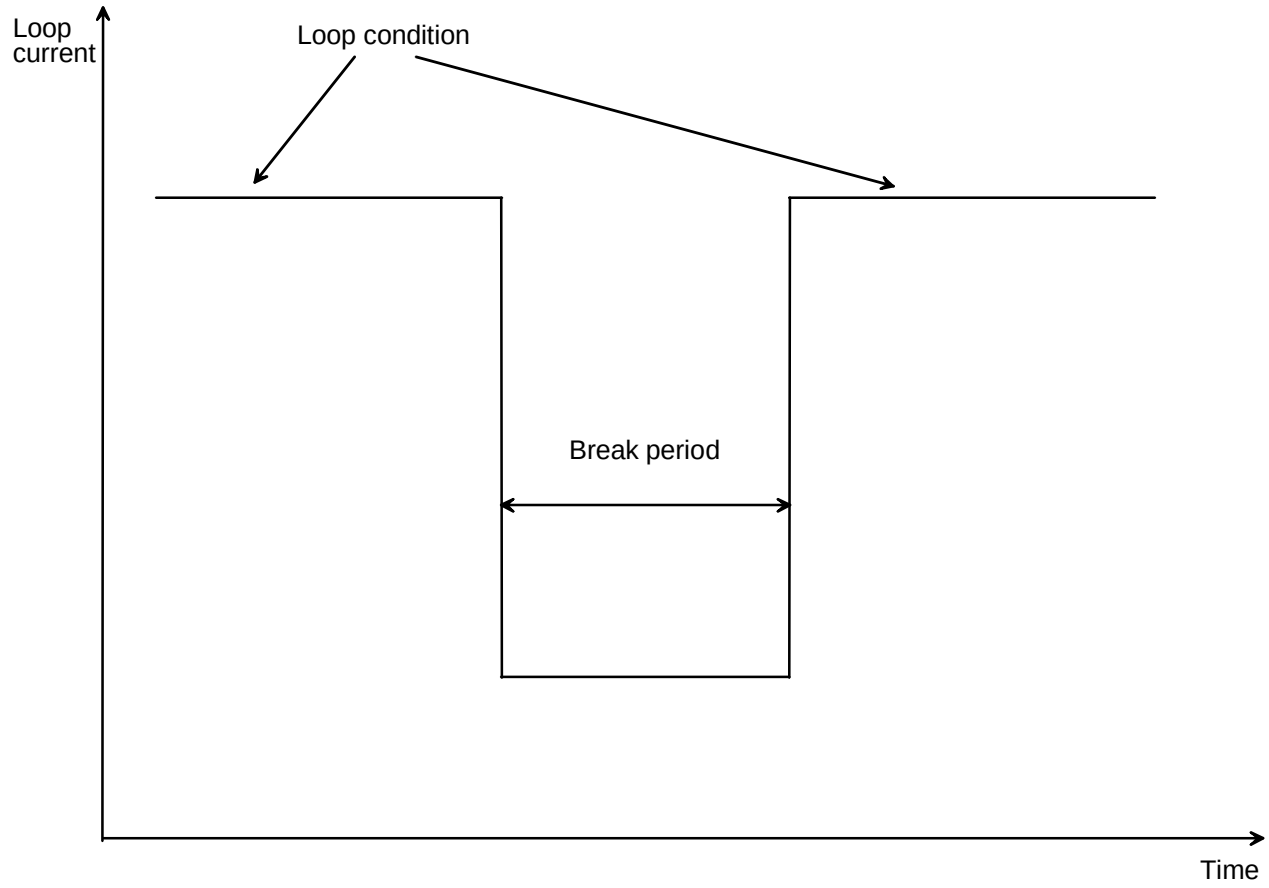


**Figure 1**

**break period:** period during which the loop current is reduced to indicate a register recall signal

**loop condition:** loop current in the off-hook state, during the normal loop condition or during a possible pre- or post break period

## 3.2 Abbreviations

For the purposes of the present document, the following abbreviations apply:

| | |
|---|---|
| PSTN | Public Switched Telephone Network |
| TE | Terminal Equipment |

# 4 Technical requirements

## 4.1 Break period duration

**Requirement:**

The break period duration shall be:

a) 90 ms to 120 ms; or

b) 220 ms to 300 ms.

NOTE: For new designs the first option a) 90 ms to 120 ms is recommended.

**Test:** the measurement arrangement is based on annex A. This requirement shall be tested at Rf = 1000 Ω and U = 50 VDC. The break period shall be measured from the point where the current has fallen to 10 % below the loop condition current (beginning of the exponential fall) to the point where the break current has increased to above 1 mA from its lowest value (start of the exponential rise).

## 4.2 Break period current

**Requirement:** the break period current shall be ≤ 1 mA. Once this level of current has been reached, the current shall remain ≤ 1 mA for the remainder of the break period.

NOTE: This requirement defines a value selected to ensure the positive detection of a valid break condition.

**Test:** the measurement arrangement is based on annex A. This requirement shall be tested at Rf = 500 Ω and U = 50 VDC. The measurement is performed while the terminal is sending a register recall signal, and the current during the break period is monitored.

## 4.3 Pulse Shape

**Requirement:** when tested with a voltage of 50 VDC and a feed resistor of 1 000 Ω, the make to break transition shall fall within the mask specified below. It shall be noted that the t0 reference point (t = 0 ms) is the instant when the current falls below the steady loop condition current value.

The transition from break to make (1 mA to the steady loop condition current value) shall be completed within 2 ms.

**Table 1: Pulse shape limits**

| Loop current [mA] | Upper limit [ms] |
|---|---|
| 15 | 2,9 |
| 4 | 6,1 |
| 2 | 7,8 |
| 1 | 9,5 |

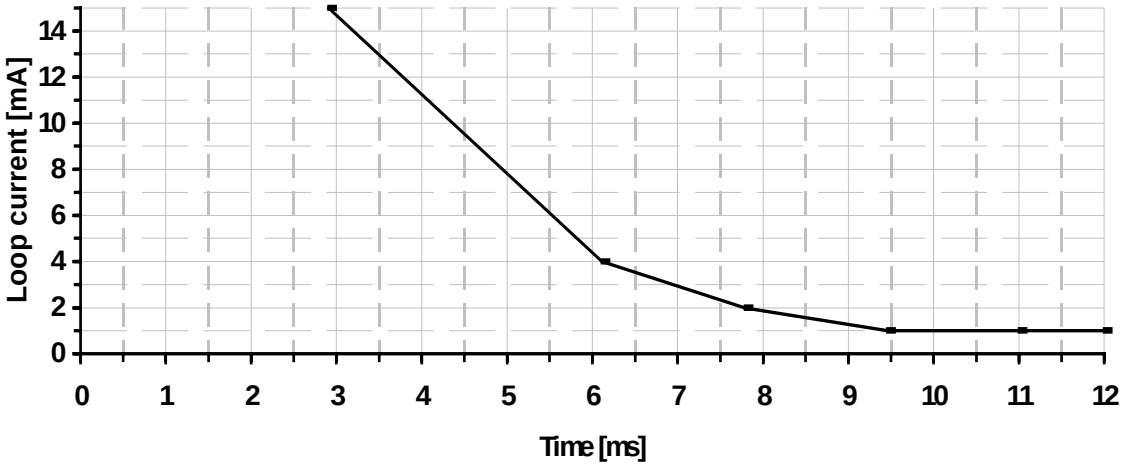


**Figure 2**

**Test:** The measurement arrangement is based on annex A. This requirement shall be tested at Rf = 1 000 Ω and U = 50 VDC.

# Annex A (normative): Measurement principle

## A.1 Preamble

Set the TE in loop steady state.

## A.2 Test state

During the generation of a register recall signal.

## A.3 Test configuration

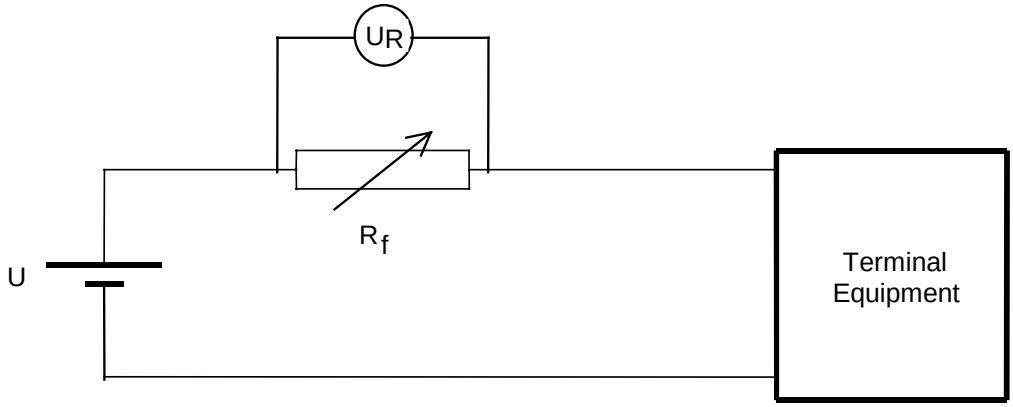


**Figure A.1**

## A.4 DC feeding arrangement

### A.4.1 Voltage

U = 50 VDC.

### A.4.2 Resistance

According to clause specific designation $R_f$ will have one of the following values: 1 kΩ or 500 Ω.

# Bibliography

The following material, though not specifically referenced in the body of the present document (or not publicly available), gives supporting information.

- TBR 21: "Terminal Equipment (TE); Attachment requirements for pan-European approval for connection to the analogue Public Switched Telephone Networks (PSTNs) of TE (excluding TE supporting the voice telephony service) in which network addressing, if provided, is by means of Dual Tone Multi Frequency (DTMF) signalling".
- EN 300 001: "Attachments to the Public Switched Telephone Network (PSTN); General technical requirements for equipment connected to an analogue subscriber interface in the PSTN".
- ETR 201: "Public Switched Telephone Network (PSTN); Register-recall [CEPT Recommendation T/CS 20-09 E (1980)]".

# History

| Document history | | |
|---|---|---|
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