proXimus

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Information Tones

Table of Contents

0. Document history

Every update of this document results in a complete new version with new version number and release date.

Version	Date	Main or important changes since previous version
1.1	27 NOV 1998	…
1.2	27 FEB 2001	• References to old exchanges types deleted • Ring Back service • Music on Hold • MWI tone
1.3	10 APR 2003	• Document has been updated due to new software release versions for EWSD-V16B and S12-P8 switching systems. • Paragraph 4 : change level for EWSD. • Paragraph 2 & 3 : add info related to intrusion tone.

1. Generals

1.1.   Scope

This document is applicable for tones generated by the Proximus digital exchanges with the following software packages :

- S12 - P8
- EWSD - V16

Remark : a customer's interface connected to the Proximus public switched telephone network (PSTN) may receive tones coming from other origins (private complex installations, other licensed operators networks) and having therefore other characteristics.

1.2.   Definitions

- Informations tones are sinusoidal tones given by the exchange during processing of the call. A tone is sent as long as the call stays in a particular state.
- Immediate ringing tone is sent before ringing tone, but may be omitted if the system is such that the sending phase of the ringing tone may be present immediately when the called party is recognised as free.

2. Frequency

The frequency for all tones is 425 +/- 5 Hz, except for:

- Special Information Tone : $f1 = 950$ +/- 50 Hz, $f2 = 1400$ +/- 50 Hz, $f3 = 1800$ +/- 50 Hz.
- Call Waiting Tone, Tone On Hold and Intrusion Tone : $f = 1400$ +/- 50 Hz

3. Cadence

Remarks :

- Some cadences start on a random position in the periodic sequence
- Some cadences are preceded by a special first tone burst to prevent beginning silence or a too short first burst.
- The indicated timing values are target values ; small deviations are present in practice.

3.1.   Dial Tone

Definition : a tone advising that the exchange is ready to receive call information and inviting the user to start sending call information.

Typical uses : tone sent after off-hook action (at call set-up). Tone sent after register recall (in conversation phase).

ON

OFF
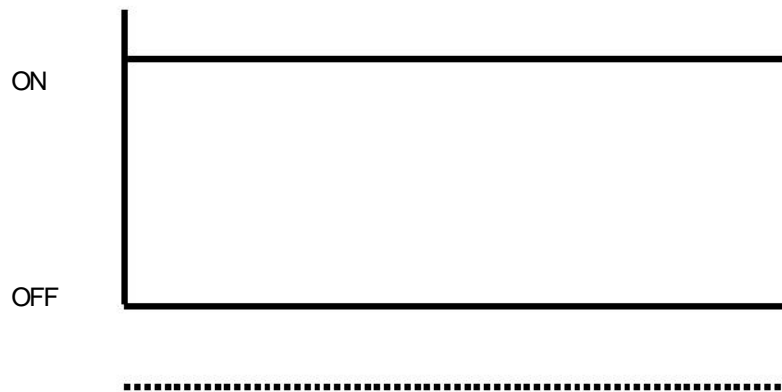
3.2. Special Dial Tone

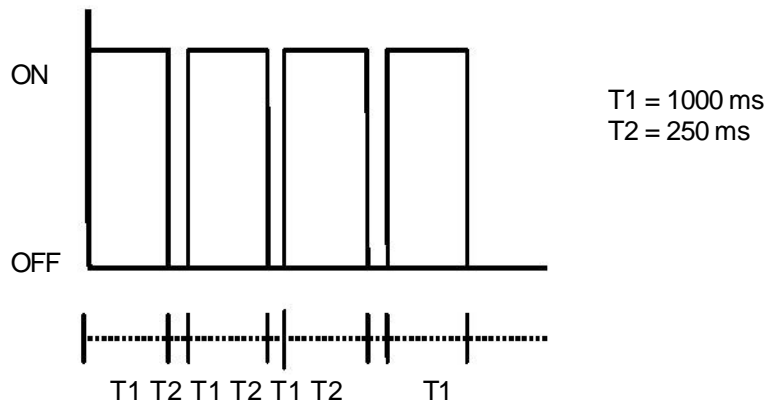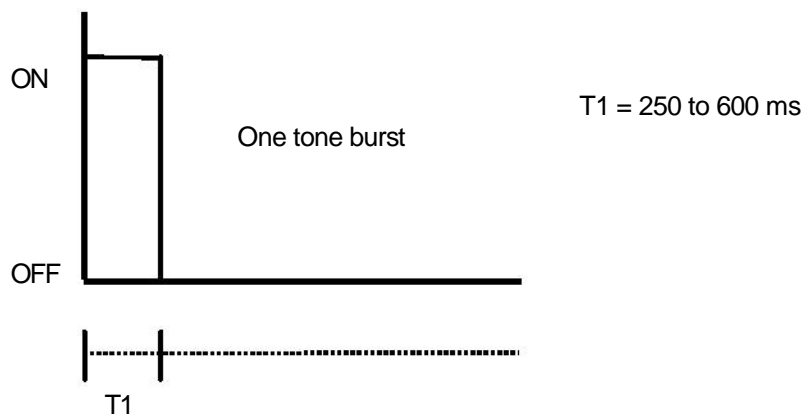Definition : a tone advising that the exchange is ready to receive call information and inviting the user to start sending call information, at the same time reminding the user that special conditions apply to the termination from which the call is being made.

Typical use : tone sent after off-hook action at call set-up, when call forwarding is active.

ON

OFF

T1 = 1000 ms
T2 = 250 ms

T1 T2 T1 T2 T1 T2   T1

3.3. Immediate Ringing Tone

Definition : cf. § 1.2.
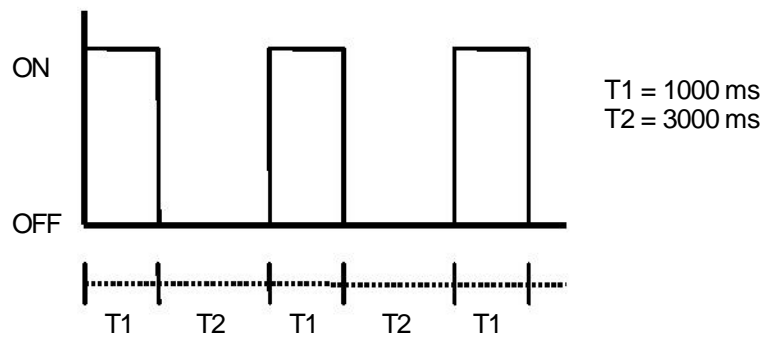
ON

One tone burst

T1 = 250 to 600 ms

OFF

T1

3.4. Ringing Tone

Definition : a tone advising the caller that a connection has been made and that a calling signal is being applied to a telephone number or service point.

Typical use : indicates that ringing or alerting is applied to the called line.

T1 = 1000 ms
T2 = 3000 ms

3.5. Busy Tone

Definition : a tone advising the caller that the telephone is busy.

Typical uses : indicates that the called line is engaged in another call and that Call Waiting service is not active. Indicates that the other party has hooked on and that the connection has been released.

Since the introduction of "Ring Back" service (= CCBS supplementary service), some tone bursts are sent, combined with a recorded announcement, inviting the calling party to make use of this "Ring Back" service.

T1 = 500 ms
T2 = 500 ms
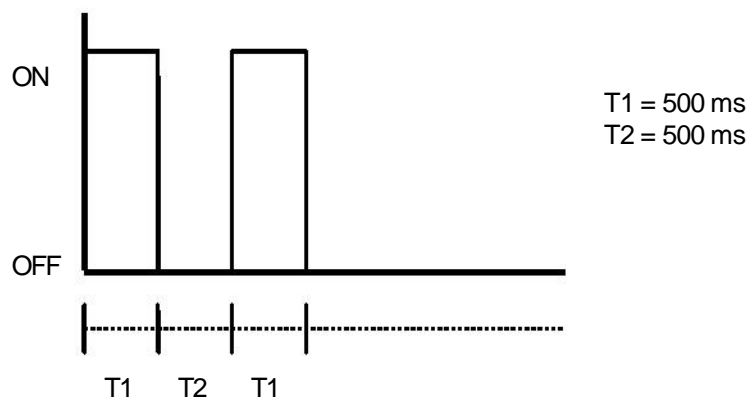
3.6. Congestion Tone

Definition : a tone advising the caller that the groups of lines or switching equipment necessary for the setting-up of the required call or for the use of a specific service are temporarily engaged.

Typical use : indicates that the network is temporary not able to answer to the request of the caller.

ON

OFF

T1 = 167 ms
T2 = 167 ms

T1   T2 T1   T2   T1
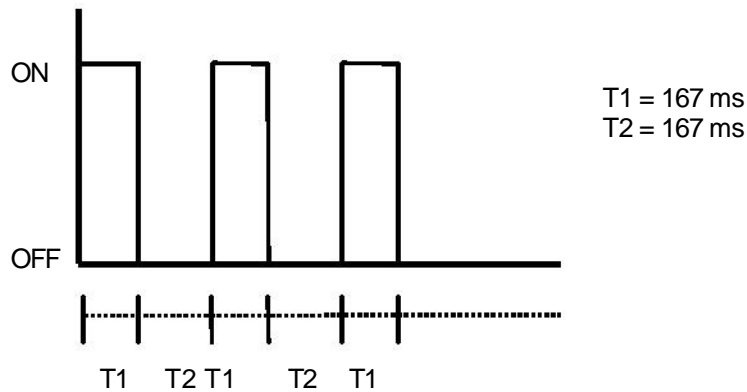
3.7. Special Information Tone

Definition : a tone advising the caller that the called number cannot be reached for reasons other than "subscriber busy" or "congestion". The tone may also be used in conjunction with recorded announcements to signify that what the caller is about to hear is a recording. It should always be used to precede all call failure announcements.

Typical use : indicates a call failure (wrong manoeuvre from the caller, called party not reachable, ...)

ON

f1 f2 f3   f1 f2 f3

OFF

T1 T2 T3   T4   T1 T2 T3

T1 = 330 ms T2
= 330 ms
T3 = 330 ms
T4 = 1000 ms
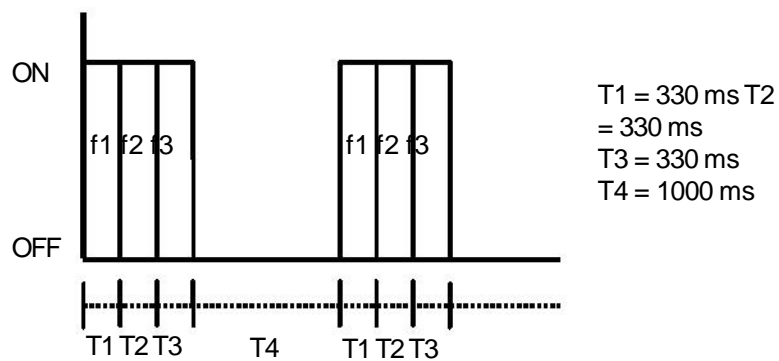
3.8.   Special Confirmation Tone

Definition : a tone used in some exchanges in place of an announcement to indicate that an interrogated service is active.
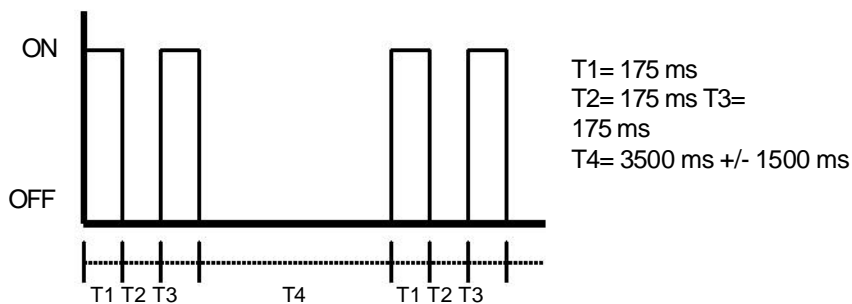
Typical use : positive answer to a service activation or invocation. S12 & EWSD switches : positive answer to an interrogation.

T1= 40 ms
T2= 40 ms

```
ON

OFF
     T1 T2 T1 T2 T1 T2 T1 T2 T1 T2 T1
```
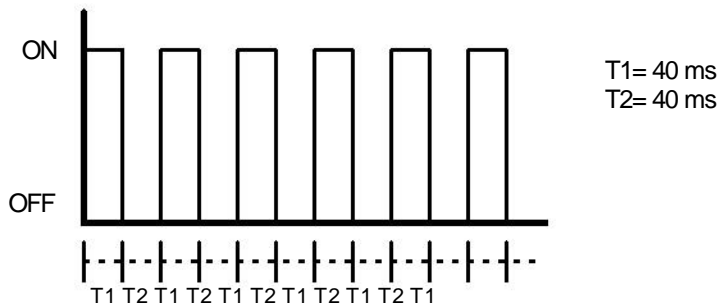
3.9.   Call Waiting Tone

Definition : a tone advising the user of the call waiting supplementary service who is engaged on a call that someone is attempting to call his number.
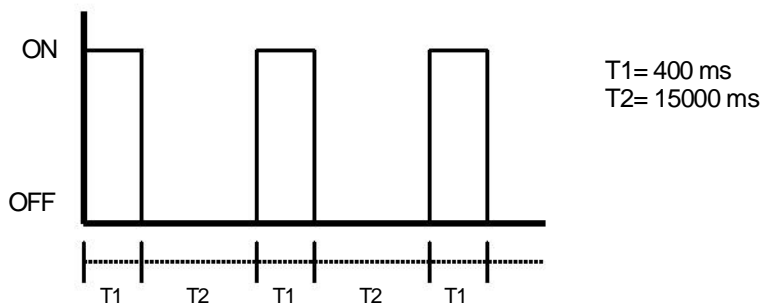
Typical use : cf. definition.

T1= 175 ms
T2= 175 ms T3=
175 ms
T4= 3500 ms +/- 1500 ms

```
ON

OFF
     T1 T2 T3      T4      T1 T2 T3
```

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3.10. Tone On Hold

Definition : a tone used to reassure a calling user who has been placed on "hold" by a subscriber with the Hold supplementary service, PABX or other facilities.

Typical use : tone sent by the network when the line of the user has been put in Hold state by the user at the other side of the call.

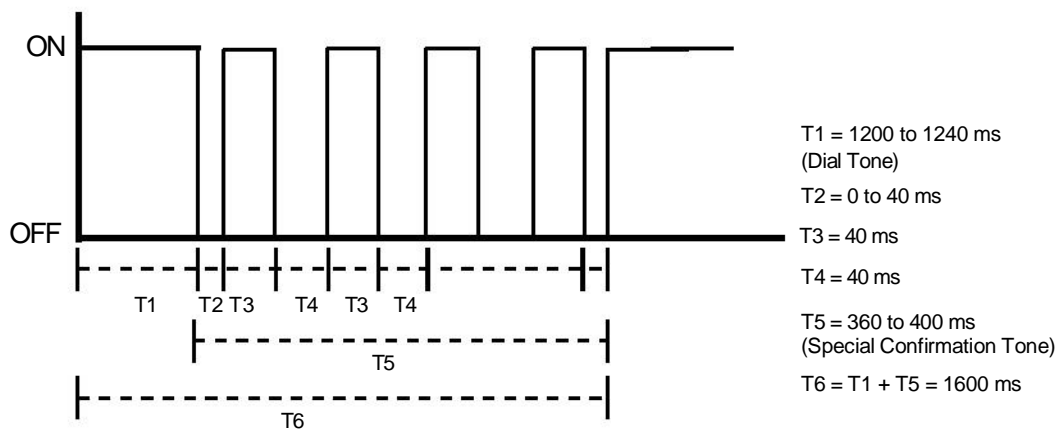Remark : this tone is presently replaced by "Music on hold".

T1= 400 ms
T2= 15000 ms

3.11. Message Waiting Indication Tone

Definition : a tone advising the customer that a message has been deposited in a vocal mailbox service.

Typical use : cf. definition. The tone is sent after off-hook action (at call set-up).

Remark : this tone is presently replaced by a specific recorded announcement.

T1 = 1200 to 1240 ms
(Dial Tone)

T2 = 0 to 40 ms

T3 = 40 ms

T4 = 40 ms

T5 = 360 to 400 ms
(Special Confirmation Tone)

T6 = T1 + T5 = 1600 ms

3.12. Intrusion Tone (only for BCG)

Definition : a tone indicating that an intrusion is performed.

Typical use : successful invocation, the tone is sent to the intruding user and to the intruded users.

ON

OFF

T1 = 2 s
T2 = 15 s
T3 = 400 ms

T1   T2   T3   T2   T3
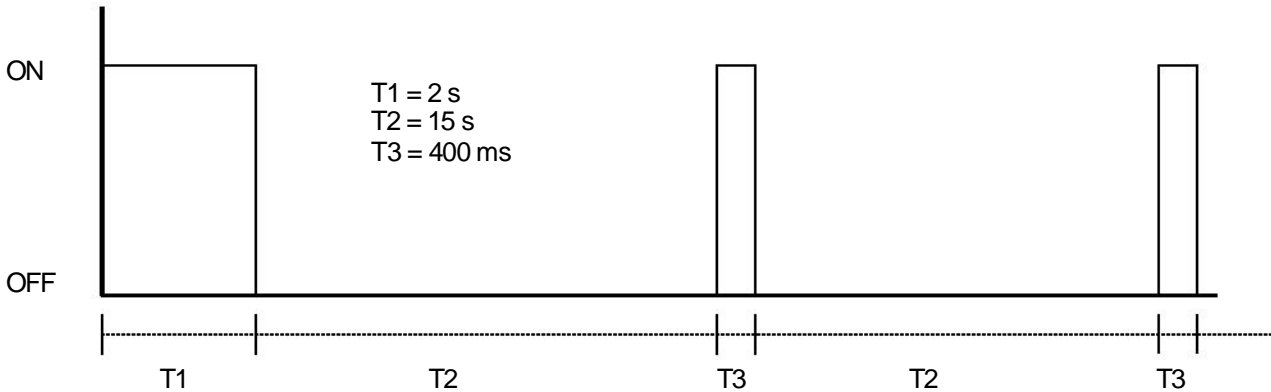
4. Level

For System 12 - Pack 8 : the level of these tones is -4,5 ± 1 dBm0;
For EWSD V16B : the level of these tones is -4 ± 1 dBm0.
For the Call Waiting Tone an the Tone On Hold, the level is -15 ± 2 dBm0

5. Distortion

The harmonic distortion loss is greater than 36 dB for Dial Tone and Special Dial Tone and greater than 26 dB for the other tones. The level of any spurious frequency generated by the tone generator, selectively measured in the 300-3400 Hz band, is less than -45 dBm0 for Dial Tone and Special Dial Tones and less than -25 dBm0 for the other ones.