



INTERNATIONAL TELECOMMUNICATION UNION

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

H.248.24

(07/2003)

SERIES H: AUDIOVISUAL AND MULTIMEDIA SYSTEMS
Infrastructure of audiovisual services – Communication
procedures

**Gateway control protocol: Multi-frequency tone
generation and detection packages**

ITU-T Recommendation H.248.24

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ITU-T Recommendation H.248.24

Gateway control protocol: Multi-frequency tone generation and detection package

Summary

This Recommendation defines two packages that provide multi-frequency tone generation and detection capabilities for H.248.

Source

ITU-T Recommendation H.248.24 was approved by ITU-T Study Group 16 (2001-2004) under ITU-T Recommendation A.8 procedure on 14 July 2003.

FOREWORD

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ITU-T Recommendation H.248.24

Gateway control protocol: Multi-frequency tone generation and detection packages

1 Scope

This Recommendation defines two packages that provide multi-frequency tone generation and detection capabilities for H.248. The support of these packages is optional.

2 References

The following ITU-T Recommendations and other references contain provisions which, through reference in this text, constitute provisions of this Recommendation. At the time of publication, the editions indicated were valid. All Recommendations and other references are subject to revision; all users of this Recommendation are therefore encouraged to investigate the possibility of applying the most recent edition of the Recommendations and other references listed below. A list of the currently valid ITU-T Recommendations is regularly published. The reference to a document within this Recommendation does not give it, as a stand-alone document, the status of a Recommendation.

2.1 Normative Reference

- ITU-T Recommendation H.248.1 (2002), *Gateway Control Protocol: Version 2*.

2.2 Informative References

- ITU-T Recommendation Q.320 (1988), *Signal code for register signalling*.
- ITU-T Recommendation Q.441 (1988), *Signalling Code*.

3 Definitions

None.

4 Abbreviations

This Recommendation uses the following abbreviations:

MF	Multi-Frequency
MG	Media Gateway
MGC	Media Gateway Controller

5 Multi-frequency tone generation package

PackageID: mfg (0x003d)
Version: 1
Extends: tonegen (0x0003) version 1

This package defines the basic MF tones as signals and extends the allowed values of parameter tl of playtone in tonegen.

5.1 Properties

None.

5.2 Events

None.

5.3 Signals

5.3.1 MF signal code 0

SignalID: mf0 (0x0050)

Generate MF signal code 0. The characteristics of the MF signal code, including frequencies and durations, are provisioned on the MG.

Signal Type: Brief

Duration: Provisioned

Additional parameters: None

Additional Values:

mf0 (0x0050) is defined as a toneid for playtone.

The other MF signal codes are specified in exactly the same way. A table with all signal names and signal Ids is included below. Note that each mf signal code is defined as both a signal and a toneid, thus extending the basic tone generation package. Also note that mf signal Ids are different from the names used in a digit map.

Signal Name	Signal ID/tone id
mf signal code 0	mf0 (0x0050)
mf signal code 1	mf1 (0x0051)
mf signal code 2	mf2 (0x0052)
mf signal code 3	mf3 (0x0053)
mf signal code 4	mf4 (0x0054)
mf signal code 5	mf5 (0x0055)
mf signal code 6	mf6 (0x0056)
mf signal code 7	mf7 (0x0057)
mf signal code 8	mf8 (0x0058)
mf signal code 9	mf9 (0x0059)
mf signal code KP	mfa (0x005a)
mf signal code KP'	mfb (0x005b)
mf signal code KP''	mfc (0x005c)
mf signal code KP'''	mf d (0x005d)
mf signal code ST	mfe (0x005e)
mf signal code ST'	mff (0x005f)
mf signal code ST''	mfg (0x0060)
mf signal code ST'''	mfh (0x0061)

5.4 Statistics

None.

5.5 Procedures

None.

6 Multi-frequency tone detection package

PackageID: mfd (0x003e)

Version: 1

Extends: tonedet (0x0004) version 1

This package defines the events required for basic MF tone detection. This package extends the possible values of tone id in the "start tone detected", "end tone detected" and "long tone detected" events.

6.1 Properties

None.

6.2 Events

6.2.1 MF signal code 0

EventID: mf0 (0x0050)

Detect MF signal code 0. The characteristics of the MF signal code, including frequencies and durations, are provisioned on the MG.

EventsDescriptor Parameters: None

ObservedEventsDescriptor Parameters: None

Additional Values:

The events for the other MF signal codes are specified in exactly the same way. A table with all event names, event Ids and digit map symbols is included below. The event Ids are defined with same names as the signal Ids in package mfg. The additional tone id values are the same tone id values defined in package mfg.

Signal Name	Signal ID/tone id	Digitmap Symbol
mf signal code 0	mf0 (0x0050)	'0'
mf signal code 1	mf1 (0x0051)	'1'
mf signal code 2	mf2 (0x0052)	'2'
mf signal code 3	mf3 (0x0053)	'3'
mf signal code 4	mf4 (0x0054)	'4'
mf signal code 5	mf5 (0x0055)	'5'
mf signal code 6	mf6 (0x0056)	'6'
mf signal code 7	mf7 (0x0057)	'7'
mf signal code 8	mf8 (0x0058)	'8'
mf signal code 9	mf9 (0x0059)	'9'
mf signal code KP	mfa (0x005a)	'A' or 'a'
mf signal code KP'	mfb (0x005b)	'B' or 'b'
mf signal code KP''	mfc (0x005c)	'C' or 'c'
mf signal code KP'''	mfd (0x005d)	'D' or 'd'
mf signal code ST	mfe (0x005e)	'E' or 'e'
mf signal code ST'	mff (0x005f)	'F' or 'f'
mf signal code ST''	mfg (0x0060)	'G' or 'g'
mf signal code ST'''	mfh (0x0061)	'H' or 'h'

6.2.2 Digitmap completion event

EventID: ce (0x0004)

Generated when a digit map completes.

EventsDescriptor parameters:

Digit map processing is activated only if a digit map parameter is present, specifying a digit map by name or by value.

ObservedEventsDescriptor parameters:

Digit String

ParameterID: ds (0x0001)

Type: string

Possible values:

A sequence of characters '0' through '9', 'A' through 'H', and the long duration modifier 'Z', and the interdigit threshold timers 'T', 'S' and 'L'.

Description:

The collected address string which matched part or all of an alternative event sequence specified in the digit map.

Termination Method

ParameterID: meth (0x0002)

Type: enumeration

Possible values:

"UM" (0x0001) Unambiguous match

"PM" (0x0002) Partial match, completion by timer expiry or unmatched event

"FM" (0x0003) Full match, completion by timer expiry or unmatched event

Description:

Indicates the reason for generation of the event.

6.3 Signals

None.

6.4 Statistics

None.

6.5 Procedures

None.

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