ALCATEL's
ONE TOUCH™ 525

DOWNLOAD
REFERENCE MANUAL

Document History

Version	Date	Type of modification
0.1	17/04/2002	Creation of the draft
0.2	30/05/2002	Modification after review (max sizes, MIDI files)
1.0	05/06/2002	Initial release

Table of Contents

1 Scope

This document will provide operators with a full understanding of the various data downloading capabilities of ALCATEL's ONE TOUCH™ 525 handsets.

2 References

2.1 Applicable documents

Document Title	Reference Name	
Download over SMS on Alcatel Mobiles	FRD Download over SMS	v1.0
Download over WAP for Alcatel Mobiles	FRD Download over WAP	v4.0
Data Formats for Alcatel Mobiles	FRD Data Formats	v4.0
EMS Reference Manual for ONE TOUCH™525	SW/BG3/REFMAN/EMS	v1.0
Technical Realization of the SMS	3GPP TS 23.040 (Release 5)	v5.3.0
Technical realization of the SMS	3GPP TS 23.040 (Release 4)	v4.4.0
Alphabets and Languages	3GPP TS 23.038	v4.3.0
Download Fun Protocol Specification	OPWV 102- June 2001	v1.0
M-Services Guidelines	PRD AA.35	v3.0
Fun Object Naming Convention	Openwave - June 2001	v1.1
Channel Coding	REC GSM 05.03	v7.3.0
Hale Rate Speech Transcoding	REC GSM 06.20	v7.0.1
iMelody	Specifications for Infrared Mobile Communications (IrMC), IrDA	v1.2

2.2 GLOSSARY

3GPP	3rd Generation Partnership Project
DF	Download Fun
EMS	Enhanced Message Service
iAlcatel	Alcatel proprietary melody format
iMelody	Standard melody format
IrDA	Infrared Data Association
IrMC	Infrared Mobile Communications
ME	Mobile Equipment
MIDI	Musical Instrument Digital Interface
MMS	Multimedia Messaging Service
MSB	Most Significant Bit
MSEQ	Multimedia Sequential Event Quantification
SAR	Segmentation And Re-assembly
SMF	Standard Midi File
SMS	Short Message Service
TDD	Terminal Data Download
UDH	User Data Header
VOX	Standard vocal format
WAP	Wireless Application Protocol
WSP	Wireless Session Protocol

3 Introduction

The ALCATEL ONE TOUCH™ 525 comes with data downloading capabilities which enable the user to enhance and/or personalize his handset and to communicate with other users in more interactive ways. Different types of data can be downloaded:

- Five types of **Melodies**

  - iMelody: standard format for buzzer melodies, as defined in EMS protocol.

  - iAlcatel: Alcatel format for buzzer melodies. It is similar to iMelody, but much more compressed and with richer features.

  - MSEQ: Alcatel format for polyphonic, multi-instruments melodies.

  - VOX: Alcatel proprietary format for sampled melodies.

  - MIDI: Standard Midi Files for polyphonic, multi-instrument melodies.

- Five types of **Pictures**

  - Alcatel pictures: static pictures in Alcatel format.

  - Alcatel animations: sequence of static pictures in Alcatel format.

  - WBMP pictures

  - EMS pictures: static pictures in standard EMS format.

  - EMS animations: sequence of static pictures in EMS format.

- **SMS templates**: sequence of text, pictures and melodies forwarded as an EMS by the user.

There are two ways of downloading data elements:

- **Download over SMS (using EMS or TDD)**

- **Download over WAP (using Download Fun or WSP GET)**

For more information on the protocols used for data downloading, please refer to the FRD documents listed in S*ection 2.1 Applicable Documents*.

4 Bearers limitations

The different means to download data do not have the same capabilities. The table below lists the usual size limitations for each type of bearer. Please remember that these limits are valid for ALL types of data and content types, **except when specified otherwise** (i.e., MIDI files).

Bearer	Maximum size
WSP GET	**13 Kbytes**[*]
DOWNLOAD FUN	**13 Kbytes**[*]
TDD OVER SMS	**4000 bytes**
EMS	**128 bytes**

Note: The 128 bytes limit for EMS implies that objects must be less than 128 bytes AFTER being converted into EMS in order to be forwarded as EMS-compatible objects.

[*] The maximum size for WSP GET and Download Fun can also be limited by the WAP Gateway.

05/06/2002

5 Data formats

5.1 Melodies

5.1.1 iMelody

The iMelody format is a minimal set of tones that can be used to transfer melodies between devices. **To be compliant with the EMS standard, the melody must be limited to 128 bytes**. The ONE TOUCH™ 525 supports iMelody 1.0, 1.1 and 1.2.

The ONE TOUCH™ 525 plays all melodies in continuous style (no rest between notes).

WSP GET

Type of data	Content type	Supported	Max. size (bytes)
iMelody	audio/iMelody	YES	13312
	application/vnd.alcatel.iMelody.EMS	YES	128

Download Fun

Type of data	Content type	Supported	Max. size (bytes)
iMelody	audio/iMelody	YES	13312
	application/vnd.alcatel.iMelody.EMS	YES	128

TDD over SMS

Type of data	Supported	Max. size (bytes)
iMelody	YES	4000

EMS

Type of data	Supported	Max. size (bytes)
iMelody	YES	128

5.1.2 iAlcatel melody

iAlcatel is a proprietary Alcatel monophonic melody format, which principle is to dissociate the duration and the frequency. It enables better compression rates and therefore faster downloads. To be compliant with the EMS standard, the iAlcatel melody must be limited to 128 bytes once converted into iMelody.

WSP GET

Type of data	Content type	Supported	Max. size (bytes)
iAlcatel	application/vnd.alcatel.iAlcatel	YES	13312
	application/vnd.alcatel.iAlcatel.EMS	YES	128

Download Fun

Type of data	Content type	Supported	Max. size (bytes)
iAlcatel	application/vnd.alcatel.iAlcatel	YES	13312
	application/vnd.alcatel.iAlcatel.EMS	YES	128

TDD over SMS

Type of data	Supported	Max. size (bytes)
iAlcatel	YES	4000

5.1.3 MSEQ melody

MSEQ (Multimedia Sequential Event Quantification) is an Alcatel-specific format which supports polyphony and mutli-timbrality (several notes and several instruments).

WSP GET

Type of data	Content type	Supported	Max. size (bytes)
MSEQ	application/vnd.alcatel.SEQ	YES	13312

Download Fun

Type of data	Content type	Supported	Max. size (bytes)
MSEQ	application/vnd.alcatel.SEQ	YES	13312

TDD over SMS

Type of data	Supported	Max. size (bytes)
MSEQ	YES	4000

5.1.4   VOX melody

VOX is a sampled melody. It is an Alcatel format which requires the Half Rate vocoder. If the user sends a VOX melody to a handset which does not support HR vocoding, then the VOX melody will NOT play.

WSP GET

Type of data	Content type	Supported	Max. size (bytes)
VOX	application/vnd.alcatel.VOX	YES	13312

Download Fun

Type of data	Content type	Supported	Max. size (bytes)
VOX	application/vnd.alcatel.VOX	YES	13312

5.1.5   MIDI melody

The ONE TOUCH™ 525 accepts the standard MIDI melody format. It is a very popular format for polyphonic and multi-instruments music sheets. Because it is lightweight, the MIDI format allows the download of longer high-quality melodies in messages.

WSP GET

Type of data	Content type	Supported	Max. size (bytes)
MIDI	audio/midi	YES	2500

Download Fun

Type of data	Content type	Supported	Max. size (bytes)
MIDI	audio/midi	YES	2500

Warning!   The ONE TOUCH™ 525 supports EMS Release 5 MIDI Files (see Reference Documents for further information). If the MIDI file is not Release 5, it will be supported BUT may be altered when played back.

IN ALL CASES, there is NO content adaptation, NO bandwidth control and NO polyphonic reduction. There can be up to 64 simultaneous tracks. The amplification coefficient is fixed and music will output with the capability of the synthesizer and audio chain (67 to 107 MIDI note = 392 Hz to 3951 Hz).

5.2 Pictures

5.2.1 Alcatel Picture

Alcatel Picture is a proprietary format. Alcatel pictures are used for EMS messages (when EMS compliant), idle screen and switch on/off. **Note**: Alcatel's ONE TOUCH™ 525 supports black and white pictures only (no gray levels).

Pictures must be limited to the sizes listed below (sizes are given *width* x *height*):

- **Idle screen**
    - Up to 35 x 39 pixels (with the picture displayed on the right of the screen and the clock on the left). Pictures up to 35 x 41 are also accepted BUT only 35 x 39 pixels will be displayed. Alcatel recommends a size of 32 x 32 for best results.

    - Up to 96 x 39 pixels (with the picture displayed full width across the screen and the clock at the bottom). Pictures up to 96 x 41 are also accepted BUT only 96 x 39 pixels will be displayed.

- **Switch on/off**
    - All sizes from 1 x 1 to 96 x 65 (full screen).

    - Alcatel recommends heights of 8, 16, 24, 32, 40, 48, 56 and 64.

- **EMS compatible pictures**
    - Picture's **width** (dx) must be a **multiple of 8** (8, 16, 32, 40, 48, 56, 64, 72, 80, 88, 96)

    - Picture's **height** must comply to the rule: **dx * dy/8 =< 128** (where dy is the picture's height)

    - Alcatel recommends an EMS picture size of 32 x 32.

WSP GET

Type of data	Content type	Supported	Max. size (bytes)
Alcatel Picture	application/vnd.alcatel.picture	YES	866
	application/vnd.alcatel.picture.EMS	YES	128

Download Fun

Type of data	Content type	Supported	Max. size (bytes)
Alcatel Picture	application/vnd.alcatel.picture	YES	866
	application/vnd.alcatel.picture.EMS	YES	128

TDD over SMS

Type of data	Supported	Max. size (bytes)
Alcatel Picture	YES	4000

5.2.2 WBMP Picture

The WBMP is a standard picture format. In all cases, the picture's size must NOT exceed 96 x 65 (if the picture exceeds this size, it will be rejected).

WSP GET

Type of data	Content type	Supported	Max. size (bytes)
WBMP Picture	application/vnd.alcatel.wbmp	YES	784
	application/vnd.alcatel.wbmp.EMS	YES	128

Download Fun

Type of data	Content type	Supported	Max. size (bytes)
WBMP Picture	image/vnd.wap.wbmp	YES	784
	application/vnd.alcatel.wbmp.EMS	YES	128

5.2.3 EMS Picture

EMS

Type of data	Supported	Max. size (bytes)
EMS Picture	YES	128

5.2.4   Alcatel Animation

The Alcatel Animation is a succession of static pictures which are associated with a display time. This format is compatible with the EMS animation format: it can be forwarded by the user as an EMS to any EMS-compatible mobile phone.

- The animation can include up to 7 pictures of equal sizes.
- All sizes are accepted, from 1 x 1 pixels to 96 x 65 pixels (full screen).
- The pictures must be Alcatel Pictures (refer to the previous section).

To be compliant with the EMS standard:

- The animation must be a sequence of 4 pictures with equal sizes.
- The size of the pictures must be either 8 x 8 pixels or 16 x 16 pixels (recommended size).

WSP GET

Type of data	Content type	Supported	Max. size (bytes)
Alcatel Animation	application/vnd.alcatel.animation	YES	13312
	application/vnd.alcatel.animation.EMS	YES	128

Download Fun

Type of data	Content type	Supported	Max. size (bytes)
Alcatel Animation	application/vnd.alcatel.animation	YES	13312
	application/vnd.alcatel.animation.EMS	YES	128

TDD over SMS

Type of data	Supported	Max. size (bytes)
Alcatel Animation	YES	4000

5.2.5   EMS Animation

EMS

Type of data	Supported	Max. size (bytes)
EMS Animation	YES	128

5.3   SMS template

A SMS template is a sequence of different data types. When the mobile receives such a template, it can be saved as a canned message. The user will then be able to edit the canned message and send it as an EMS-compatible message.

Note: The EMS message shall not exceed 10 SMS.

TDD over SMS

Type of data	Content type	Supported	Max. size (bytes)
SMS template	Application/vnd.alcatel.SMS	YES	4000

END OF DOCUMENT