GA

PUBLIC SECURITY INDUSTRY STANDARD

OF THE PEOPLE'S REPUBLIC OF CHINA

ICS 33.060.01

A 90

GA/T 1366-2017

Police digital trunking communication system - technical specifications for mobile stations

警用数字集群(PDT)通信系统 移动台技术规范

Issued on: February 08, 2017 **Implemented on: February 08, 2017**

Issued by: Ministry of Public Security of the People's Republic of China

Table of Contents

Police digital trunking communication system - technical specifications for mobile stations

1 Scope

This Standard specifies the composition, functions, application development interface, performance indicators, over the air programming and numbering plan requirements for mobile stations of the police digital trunking (PDT) communication system.

This Standard applies to the development, production and acceptance of mobile stations of the police digital trunking (PDT) communication system.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

GB/T 191, Packaging. Pictorial marking for handling of goods

GA/T 1056-2013, Police digital trunking communication system - General technical specifications

GA/T 1058-2013, Police digital trunking communication system - Technical specifications for call control layer of air interface;

GA/T 1059-2013, Police digital trunking communication system - Security technical specifications

GA/T 1255-2016, Police digital trunking communication system - Technical requirements and measurement methods for radio frequency equipment

SJ/T 11072-1996, Type BNC radio-frequency coaxial connectors

SJ/T 11073-1996, Type SMA radio-frequency coaxial connectors

SDA SD Card Specification - Part 1: Simplified Physical Layer Specification

USB Power Delivery Specification V1.0

– data cable.

5 Mobile station requirements

5.1 General requirements

5.1.1 Design requirements

The mobile station shall be designed following the principles of serialization, standardization, modularization and downward compatibility, and shall be designed for reliability, maintainability, ease of use, security and electromagnetic compatibility.

Documents guiding users on correct installation, use and daily maintenance shall be provided with the product.

5.1.2 Appearance and mechanical structure

The surface of the mobile platform shall be smooth and flat, and shall not have defects such as cracks, deformation, scratches, burrs, paint peeling, etc. The metal surface shall have anti-rust and anti-corrosion coatings and shall not have rust or other mechanical damage.

The enclosure shall provide reliable protection for the internal mechanisms and parts of the mobile station, taking into account factors such as strength, personnel safety, and external connections.

The protection grade of the mobile station enclosure shall comply with corresponding requirements in 5.5.4 of GA/T 1255-2016.

The components of the mobile station shall be tightened without loosening; the control of switches, buttons and other control components shall be flexible and reliable; the layout shall be convenient and practical.

5.1.3 Technical specifications

The technical specifications shall comply with the provisions of 4.1.1 of GA/T 1056-2013.

5.1.4 Speech coding

The mobile station shall support or be compatible with NVOC speech coding. NVOC speech coding realizes speech encoding and decoding based on linear prediction technology and using DBELP (Division-Band Excitation Linear Prediction).

The speech coder used for PDT shall also support the following functions:

– Voice codec;

It shall have a microphone and a PTT button.

5.1.18 Shoulder microphone

It shall be provided with a microphone, a speaker and a PTT button, and be equipped with a well-designed clip for easy wearing.

5.1.19 Microphone and speaker

The recommended microphone impedance is 2.2 KΩ, and the recommended speaker impedance is 16 Ω ~ 32 Ω.

5.1.20 Data cable

The USB interface shall be supported. The programming computer connection side shall be a USB-A male interface, and the mobile station side is recommended to be MicroUSB or TYPE-C.

5.1.21 Universal USB data cable adapter

This accessory is optional. If the portable station cannot directly provide a MicroUSB or TYPE-CUSB interface, this accessory can be used to provide the ability to convert the extended interface into a standard USB interface. The interface is recommended to be MicroUSB or TYPE-C.

If this accessory is provided, it shall be possible to connect to the programming computer through this interface for wired configuration.

5.1.22 Power cord

The power cord length of the vehicle station shall be no less than 3 m, with a fusible fuse; the cross-sectional area of the copper power cord shall be no less than 1.5 mm^2, and the interface shall be 2PIN.

5.2 Functional requirements

5.2.1 Basic functional requirements

Basic functions shall comply with the provisions of 5.2 in GA/T 1056-2013.

5.2.2 Extended functional requirements

5.2.2.1 Parameter configuration

The mobile station shall be provided with parameter configuration capability, and the mobile station parameters can be configured either through the programming computer system management software or the air interface packet data.

5.2.2.2 Peripheral equipment interface

The mobile station shall support the Peripheral Equipment Interface protocol.

The extended interface of the mobile station shall support the connection of peripheral equipment and shall support the Peripheral Equipment Interface protocol. The protocol rules shall comply with the requirements of Chapter 8.

5.2.2.3 Key dialing

For mobile stations with numeric keys, the key dialing rules shall comply with the requirements of Appendix B.

5.3 Performance requirements

5.3.1 Electrical performance requirements

Electrical performance requirements shall comply with relevant requirements in 5.4 of GA/T 1255-2016.

5.3.2 Battery

The battery of the portable station shall be replaceable. Under the operating conditions that the ratio of transmission time, reception time and standby time is 1:1:8, the working time of the whole machine shall be no less than 8 hours; the voltage shall be 7.4 V; the cycle bi-directional charging shall be no less than 300 times.

5.4 Requirements for electromagnetic compatibility

Shall comply with relevant requirements in 5.3 of GA/T 1255-2016.

5.5 Requirements for environmental adaptability

Shall comply with relevant requirements in 5.5 of GA/T 1255-2016.

5.6 Durability requirements

The life of the PTT button shall be no less than 400 000 times.

6 Test methods

The functional test method shall meet the requirements of GA/T 1367-2017, and the performance, environment and electromagnetic compatibility test methods shall meet the relevant requirements of Chapters 6 ~ 9 of GA/T 1255-2016.

7 Parameter configuration

7.1 Wired configuration

be visible in the mobile station address book. When the frequency and group number currently stationed by the mobile station are switched to the participation group, or when the mobile station is stationed to the participation group when it is turned on, the terminal shall have the ability to initiate group attachment. When the mobile station is not stationed in this group, it will not receive services issued by this group;

– Background group: the mobile station has the ability to receive call services for this group in the system. This group shall not be visible in the mobile station address book, or marked as a background group. The mobile station cannot actively call the background group in the address book. The services of the background group do not need to be stationed, and shall be received when idle;

– Response group: indication user, the mobile station has the ability to receive calls for this group in the system. This group shall be visible in the mobile station address book. The frequency and group number currently stationed by the mobile station can be switched to the response group. Regardless of whether the mobile station is stationed to the response group, it shall be able to receive the voice call content of the response group.

7.2.3 Over the air process

7.2.3.1 Parameter configuration process

The parameter configuration service process is as follows:

– The system sends configuration parameters to the MS through a configuration request (ParamCfgReq) (mandatory);

– The mobile station returns a link layer response (mandatory);

– The MS reports the result of the configuration request to the system through the configuration response command (ParamCfgRsp) (optional);

– The system queries the configuration completion status (ParamCfgQry) through the configuration result query signaling, and the mobile station responses to the configuration completion status (ParamCfgRsp) through the configuration result query command (optional).

The system sends configuration parameters to the MS via a configuration request command. The command message format is shown in Table 4.

The process flow of configuring the mobile station parameters through the air interface is shown in Figure 5. This figure is described in MSC format. For the symbol description of MSC, refer to Appendix E.

– n is omitted, all types of transfer calls are canceled;

– n=1, only voice transfer call is canceled;

– n=2, only data transfer call is canceled.

B.2.7.7.4 Cancellation of transfer by a third party

#44n, where:

– n is omitted, all types of transfer calls are cancelled;

– n=1, only voice transfer call is canceled;

– n=2, only data transfer call is canceled.

B.2.7.8 Status call

*0n,n range 0~127.

B.2.7.9 Control channel short data call

*2.

B.2.7.10 Circuit data call

*3n, where:

– n=1, occupying 1 slot;

– n=2, occupying 2 slots;

B.2.7.11 IP call

*7, followed by the IP address, and ends with #. EXAMPLE:

"*7*213*48*132*2#" means calling the IP address "213.48.132.2".

B.2.7.12 Switching between plain and secret working modes

*46, plain/secret switching;

*461, switched to plain language;

*462, switched to secret language.

B.2.7.13 Do not disturb settings (optional)

B.2.7.13.1 Setting do not disturb

*49n, where:

– n is omitted, all types of calls are not received;

– n=1, only voice calls are not received;

– n=2, only packet and circuit data calls are not received.

B.2.7.13.2 Canceling do not disturb

#49n, where:

– n is omitted, all types of calls are canceled;

– n=1, only voice call is canceled;

– n=2, only packet and circuit data calls are canceled.

B.2.7.14 Display self number

*47.

B.2.7.15 System selection

*51, stay in the current base station and do not start automatic roaming;

#51, cancel the resident status at the current base station.

*52*n, where:

– n=frequency number, the mobile station switches to the control channel of the specified frequency number;

– If *n is omitted, the mobile station switches to the next control channel according to the roaming strategy.

B.2.7.16 Manually adding and deleting temporary groups

*61n, manually adding a temporary group, where n is the position number of the manually added temporary group.

Example: *611*90998# adding group 90998 at position 1.

#61n, deleting the manually added temporary group, where n is the position number of the manually added temporary group to be deleted.

Example: #611# Deleting the temporary group stored at position 1.

B.2.7.17 Canceling call/disconnecting

*#, this dial will cancel the call during the call establishment process and return to the idle state; it will disconnect the line during the call.

This is an excerpt of the PDF (Some pages are marked off intentionally)

------ The End ------