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GA/T 1056-2013

**Police digital trunking communication system-General
technical specifications
(English Translation)**

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1 Scope

This Standard specifies the technical characteristics, system composition and functional requirements, operating frequency band, address and identification code, network management, basic performance indicators of channel equipment, AC power supply system, information security and confidentiality, environment and electromagnetic compatibility, reliability and other general requirements of the police digital trunking (PDT)

communication system.

This Standard applies to the overall planning, network design, equipment development, production, engineering construction and acceptance 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 7610-1987, Characteristics of pulse code modulation for voice-frequencies

GB/T 13426-1992, Reliability requirements and test methods for digital communication equipment

GB/T 14013-1992, Mobile communication equipment -- Transport package

GB/T 15540-2006, EMC specification and test methods for land mobile communication equipment

GB/T 15844.3-1995, Reliability requirements and test methods for radio transceiver employing F3E emission used in the mobile services

GB/T 17626.2-2006, Electromagnetic compatibility (EMC) -- Testing and measurement techniques -- Electrostatic discharge immunity test

3.1 Terms and definitions

The following terms and definitions apply to this document.

3.2 Abbreviations

The following abbreviations apply to this document.

BS. Base Station

DMO. Direct Mode

FGN. Fleet Group Number

FIN. Fleet Individual Number

GN. Group Number

4.1.2 RF modulation method

The RF modulation method uses four-level frequency shift keying (4FSK).

4.1.3 Modulation rate

The modulation is transmitted at 4800 symbols/s. Each symbol consists of two bits of information.

4.1.4 Speech coding

The speech coding rate shall be greater than or equal to 2 kbps. The rate after speech coding plus channel coding shall be 3.6 kbps.

4.2.1 User terminal services

User terminal services are services that provide complete communication capabilities between user terminals.

4.2.2 Carrying services

Carrying services are telecommunication services that provide signal transmission capabilities between user terminals and network interfaces.

4.3 Basic protocols and signaling

The basic protocols and signaling of the air interface shall comply with the provisions of GA/T 1057-2013 and GA/T 1058-2013.

4.5 Call setup time

The time to establish a group call within the same exchange shall be less than or equal to 300 ms.

5.1.1 Network infrastructure

Network infrastructure equipment includes switches, gateways, network management equipment, base station control equipment and access points, as shown in Figure 1.

5.2.1.1 Registration

Registration is the process of a mobile station initiating a network access request and confirming it to the trunking system. Authentication may be required during registration.

5.2.1.5 Voice private call

A voice private call is a point-to-point two-way voice call established between a mobile station and other user terminals. The participants of a call are only the caller and the called party. There are two types of voice private calls between mobile stations.

FOACSU and OACSU.

5.2.1.10 Emergency call

An emergency call is a special call initiated by a user in an emergency situation. It has the highest priority. When there are no channel resources, the system will release channel resources of other low-level calls for emergency calls.

5.2.1.11 Priority call

Priority calls are calls that are given priority to obtain resources when the system is busy. The way to obtain resources can be to seize the channel of low-priority calls or to jump the queue in the queue.

5.2.1.12 Alarm

An alarm is when a user presses a special button on a mobile station device in an emergency, sending a predefined status message to a pre-set destination (mobile station or dispatch station) on the system control channel to notify other mobile stations or dispatch stations that the user is in an emergency state.

5.2.1.14 Monitoring

Monitoring refers to the process of authorizing a user terminal to obtain voice on a specified mobile station, talk group or channel.

5.2.1.15 Interruption

Interruption means that when the dispatch station is monitoring or participating in a voice call, it forcibly interrupts the ongoing speech and seizes the right to speak.

5.2.1.16 Forced disconnection

Forced disconnection refers to the process in which the system forcibly disconnects an ongoing call and releases the corresponding resources occupied.

5.2.1.17 Handover

Handover refers to the process in which a mobile station switches base stations during a voice call without interrupting the ongoing service.

5.2.1.18 Call time limit

The call time limit is a function that the system uses to control the maximum duration allowed for a user to make a voice call, including a single push-to-talk time limit and a single call total duration limit.