GA

PUBLIC SAFETY INDUSTRY STANDARD

OF THE PEOPLE'S REPUBLIC OF CHINA

ICS 13.020

A 91

GA/T 1711-2020

Controlling limits and measurement methods for electromagnetic environment in surveillance center of security systems

安防监控中心电磁环境控制限值和测量方法

Issued on: February 11, 2020 **Implemented on: August 01, 2020**

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

Table of Contents

Controlling limits and measurement methods for electromagnetic environment in surveillance center of security systems

1 Scope

This Standard specifies controlling limits and measurement methods for electromagnetic environment in surveillance center of security systems.

This Standard is applicable to electromagnetic environment evaluation for surveillance center of security systems. The electromagnetic environment evaluation in areas such as security inspection and radio frequency reading in the security protection system may refer to this Standard to implement.

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 8702-2014, *Controlling limits for electromagnetic environment*

GB 50348-2018, *Technical code for engineering of security and protection system*

HJ 972, *Monitoring method for electromagnetic radiation environment*

3 Terms and definitions

For the purposes of this document, the terms and definitions defined in GB 8702-2014, GB 50348-2018 as well as the followings apply.

3.1 surveillance center of security system

the central control room that receives and processes security system information, handles alarm events, and manages control system equipment; it is usually divided into guard area and equipment area

5 Measurement method

5.1 Requirements for measuring instruments

5.1.1 Electric field and magnetic field measuring equipment below 100kHz meet the following requirements:

a) 8Hz~100kHz electric and magnetic field measuring instruments shall be used. Discrete probes can be used for electric and magnetic field measuring instruments. It can also be a combination of the two;

b) Three-dimensional probe shall be used;

c) When the probe is connected to the host (handheld) through an optical fiber, the fiber length shall not be less than 2.5m;

d) Measuring instruments shall be battery powered. Continuous working time shall not be less than 12h;

e) The probe holder shall be made of non-conductive material;

f) The measuring range of electric field strength of the electric field probe shall cover at least 3V/m~100kV/m. The measuring range of magnetic induction intensity of the magnetic field probe shall cover at least 30nT~1mT;

g) The area of the magnetic field probe shall be less than $0.01m^2$;

h) There shall be automatic data storage function. Storage interval shall not be greater than 15s.

5.1.2 Electric and magnetic field measuring instruments above 100kHz shall meet the requirements of HJ 972.

5.1.3 When a non-selective frequency tester is used for measurement and the measurement result is higher than the limit in Table 1, it needs to use frequency selective tester for final measurement.

5.2 Measuring position

5.2.1 Guard area of surveillance center of security system

5.2.1.1 Staff position on duty

Measure the positions of the guards in the surveillance center of security system. When the working posture is sitting, the height of the measuring point from the ground is 1.2m, 1m and 0.8m respectively. When the posture is

5.4 Measurement frequency band and physical quantity

The principles for selection of measurement frequency band and physical quantity are as follows:

a) Determine the measurement frequency band and physical quantity according to the frequency range of the electromagnetic field in the measurement environment;

b) When the frequency is less than 30MHz, the electric field intensity and magnetic induction intensity shall be measured;

c) When the frequency is not less than 30MHz, only the electric field strength or magnetic field strength, or equivalent plane wave power density can be measured.

6 Measurement time and data processing

The measurement shall be performed during the normal working hours of the equipment of surveillance center of security system. Each height of each measuring point is measured 5 times respectively. Each measurement time shall not be less than 15s. Take the steady state value. Record the maximum value of 5 times as the measurement result.

If the measurement result at a certain position exceeds 30% of the environmental limit in Table 1, the physical quantity shall be measured for not less than 24h (the battery replacement time is not included) at the measurement position. It shall be recorded at least every 15s. Respectively count the maximum, minimum, 95% and 50% time probability of not exceeding the field strength values E95 and E50. Draw the distribution diagram of electric field or magnetic field and time as needed. List the maximum, minimum, E95 and E50. Use E95 as the basis for evaluation.

NOTE: If measure once every 15s and continuously measure for 24h, a total of 5760 measurement data will be generated. When processing, sort all data from largest to smallest. Take the first data as the maximum value. Take the 289th data as E95. Take the 2880th data as E50. Take the 5760th data as the minimum value.

7 Measurement record or report

The measurement record and report for electromagnetic environment of the surveillance center of security system shall include at least the following:

- Environmental conditions such as temperature and relative humidity during

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

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