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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB 13614-2012

Replacing GB 13614-1992

Electromagnetic environment requirements for short-wave radio receiving and direction finding stations

短波无线电收信台(站)及测向台(站)电磁环境要求

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Foreword

All the technical contents of this standard is mandatory. This standard was drafted in accordance with GB/T 1.1-2009 given rules. This standard replaces GB 13614-1992 "shortwave radio direction finding station (station) Electromagnetic environment requirements" and GB 13617-1992 "no shortwave Radio receiving station (station) Electromagnetic environment requirements. " This standard and GB 13614-1992 and GB 13617-1992 compared to the main technical differences are.

--- Protection of formula pitch high voltage overhead power transmission lines were corrected;

--- The protection of the pitch, shortwave transmitters were harmonized. The standard proposed by the Ministry of Industry and Information Technology of the People's Republic of China. The standard by the China Communications Standards Association. This standard was drafted. the Ministry of Industry and Information Technology and Telecommunications Research Institute, State Radio Monitoring Center. The main drafters of this standard. Guo Lin, Li, Xiao Gimli, Lubing Song. This standard replaces the previous standard published case.

--- GB 13614-1992;

--- GB 13617-1992. Shortwave radio receiving station (station) and DF station (station) Electromagnetic environment requirements

1 Scope

GB 13614 protects the sites where short-wave signals are received and where their direction is found - two functions that depend entirely on a quiet radio background and are ruined by interference a transmitting station would not even notice. The standard sets the electromagnetic environment requirements around those stations: the protection zones, the permitted field strength of other emitters, and the conditions to be verified before building nearby. It merges and replaces two 1992 documents, GB 13614-1992 and GB 13617-1992. Issued on 29 June 2012 by AQSIQ and SAC, in force since 1 April 2013. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the edition it replaces are taken from there. The clause text, the tables and the numeric limits are not reproduced on this page - they are in the document itself, which is delivered in full in English translation.

This standard specifies the shortwave radio receiving station (station) and radio direction finding station (station) electromagnetic environmental requirements, and clearly the short-wave radio Receiving station (station) and radio direction finding station (station) radio transmitting and generating electromagnetic radiation interference protection requirements of the facility. This standard applies to the frequency of 1.5MHz ~ 30MHz fixed radio centralized receiving station (station) and the fixed radio direction finding station.

1.0 Three stations (stations)

1.5 When sunny, frequency of 500kHz, the radio interference from high-voltage overhead transmission wire reference level at the edge of the phase conductors 20m by the formula (A.7) calculated as follows: E0 = 3.5gmax 12r-30 (A.7) Where. E0

--- from the high-voltage overhead transmission line side with wire to the ground at the projection 20m radio interference level in units of dB (μV/m);

--- Gmax maximum potential gradient surface of the wire, in units of kV (rms)/cm; R

--- single wire radius, in units of cm. A.3 industrial, scientific and medical equipment, radio interference protection calculation pitch Radio interference limits for industrial, scientific and medical equipment in the shortwave bands in Table A.3 value. Table A.3 radio interference of industrial, scientific and medical equipment limits Frequency Range MHz E30 users from interfering field strength at the boundary 30m dB (μV/m) 1.50 1.705 65 ~ 1.705 2.194 70 ~ 65 3.95 2.194 ~ 3.95 2050 20 ~ 3040 Interference threshold receiving system is calculated as follows: ERT = -35-7lgf 10lgb (A.8) Where. ERT

--- interference threshold limit in dB (μV/m); f

--- frequency in MHz; b

--- receiver bandwidth in Hz. Protection principles spacing values of active and passive influence A.4 same source of interference When a source of interference, containing both affect the source of interference, but also including the impact of obstacles, it should be the larger of protection spacing values determined.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version suitable for use herein Member. For undated references, the latest edition (including any amendments) applies to this document.

GB/T 7349-2002 high-voltage overhead transmission line and substation Methods of measurement of radio interference (IEC /CISPR18,1983, EQV)

2.5

Note. The value of the guard in the middle of the pitch range, power and protection should be a linear relationship to determine the pitch. 6 shortwave radio receiving station (station) on the source of electromagnetic interference protection requirements

6.1 shortwave radio receiving station (station) to protect against high voltage overhead line spacing Shortwave radio receiving station (station) for the protection of high-voltage overhead line spacing shown in Table 4. Table 4 shortwave radio receiving station (station) to protect against high voltage overhead line spacing Voltage level kV Protection spacing/km A station (station) two stations (stations) three stations (stations) 5002 1.1 0.7 220 330 1.6 0.8 0.6 110 1.0 0.6 0.5

6.2 shortwave radio receiving station (station) for the protection of the roads pitch Shortwave radio receiving station (station) for the protection of road spacing shown in Table 5. Table 5 guard band shortwave radio receiving station (station) on the road Highway level Protection spacing/km A station (station) two stations (stations) three stations (stations) High-speed, highway 1.0 0.7

0.5 Secondary roads 0.8 0.5 0.3

6.3 shortwave radio receiving station (station) distance protection for industrial, scientific and medical equipment Shortwave radio receiving station (station) for the protection of industrial, scientific and medical equipment spacing shown in Table 6. Table 6 shortwave radio receiving station (station) distance protection for industrial, scientific and medical equipment Industrial, scientific and medical RF devices Protection spacing/km A station (station) two stations (stations) three stations (stations) General equipment 3.0 1.4

0.7 Multiple high-power devices 5.0 3.5 1.5

6.4 Protection of the pitch in special circumstances determined Short-wave radio (station) and high-voltage overhead transmission line distance protection, and calculating shortwave radio (station) protection of various sources of interference When the guard spacing, background noise field strength used, can be calculated in accordance with Appendix A of the formula. 7 shortwave radio direction finding protection station (station) electromagnetic environmental requirements

7.1 shortwave radio direction finding station (station) electromagnetic environment restricted area DF antenna from the leading edge within 300m of shortwave radio direction finding station (station) Electromagnetic Environmental penalty area. In the penalty area protection, without Sources of radio interference, and obstructions. In between 200m ~ 300m wide to allow no more than 2m, depth 1m or 1m high embankment of the canal.

7.2 shortwave radio direction-finding (station) distance to station electromagnetic environment protection Spacing to protect the station (station) between the various sources of radio interference and obstructions and shortwave radio test shall meet the requirements of Table 7. Table 7 lists the various protection spacing sources of radio interference and obstructions and short-wave radio direction finding station (station) between Name of a protected spacing sources of radio interference or obstacles/m High-voltage overhead transmission line (Single-loop) Voltage/kV 220 to 330 <=35 220V ~ 380V overhead distribution line 500 Overhead communication, broadcasting channels 400 ~ 600a 500 non-electrified railway Table 7 (continued) Name of a protected spacing sources of radio interference or obstacles/m Electrified Railway 1200b Industrial, scientific and medical equipment, c General 3000 Multiple, high-power 5000 Medium and short wave power Transmitter d Transmit power/kW >=100 >=10000 highway And a high-speed 1000 Two 800 Three 500 Small agricultural machinery and equipment 500 Power Not more than 2m metal wire fence 400 Not more than 3m isolated hut, a small cottage, etc. Nonmetallic roof or wall 300 Metal roof or wall 500 Not more than 10m of isolated buildings Non-metallic roof 600 Metal roofs 900 Gas or oil storage tank and other tall metal building 1800 Width greater than 5m drains 500 Woodlots 500 Hamlet 1000 City 5000 Pond 500-1000 Rivers (including the bed) 1000 Lake 2000 Coast 5000 Mountains (with hills) elevation < 2 ° a guard band press bar high 6.5m ~ 10m linear interpolation. b The protection distance according to the provisions of the Ministry of Railways par high ground 8.7m, 0.5m high ground to