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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB 20600-2006

**Framing structure, channel coding and modulation for digital
television terrestrial broadcasting system**

数字电视地面广播传输系统帧结构、信道编码和调制

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1 Scope

This standard specifies the framing structure, the channel coding and the modulation of the digital television terrestrial broadcasting transmission system.

It applies to the terrestrial broadcasting of digital television signals in the VHF and UHF bands.

How the system is defined

The standard works from the transport stream inwards. The frame structure is built from signal frames, super frames and calendar day frames, with a PN sequence frame header that does double duty as synchronisation and as the training sequence from which the receiver estimates the channel.

The forward error correction is a concatenation of an outer BCH code and an inner low density parity check code, offered at several code rates so that a network can trade robustness against payload. Time interleaving spreads a burst error across the codewords,

and the mapping is onto constellations from 4QAM-NR through 4QAM and 16QAM to 32QAM and 64QAM.

Single carrier and multi carrier

The distinctive feature of the system is that the same frame structure and the same coding chain serve both a single carrier and a multi carrier transmission mode, the choice being made by the network operator.

The standard also fixes the system information carried in the frame header, the pilot arrangement and the spectrum shaping. It is written to be implementable on both sides of the link, so it functions as a receiver specification as much as a transmitter one, and the parameter combinations it defines are what determine whether a given network delivers a high data rate over a small cell or a rugged low rate signal over a large one and into moving vehicles.

About this edition

GB 20600-2006 is the current edition. It was issued on 18 August 2006 and has been in force since 1 August 2007.

The interval between issue and effect is the transition period. It exists so that producers, laboratories and buyers can requalify products, revise procedures and use up documentation before the new text becomes the one that applies. The date on this page is the official one from the record of the Standardization Administration.

Classification and status

GB 20600-2006 is classified under ICS 33.160. ICS is the International Classification for Standards, the same scheme used by ISO and by the national bodies of most countries, which is what allows a Chinese standard to be placed beside its foreign counterparts on subject rather than on number.

Its Chinese Standard Classification code is CCS M 63. CCS is the domestic scheme, a letter for the sector and two digits for the subject within it, and it is the code by which the standard is filed and searched in China.

The GB prefix marks a mandatory national standard. Compliance is required by law within China: it applies to what is made, sold or imported there, and an inspection body will judge a product against it whether or not a contract names it.

How a Chinese national standard is set out

Chinese national standards are drafted to the rules of GB/T 1.1, which fixes the order in which a standard is set out. The document opens with a foreword recording the issuing

bodies, the relationship to any previous edition and the technical committee responsible for it. Clause 1 is the scope. Clause 2 lists the normative references - the other standards that have to be applied together with this one, and without which its requirements cannot be met. Clause 3 gives the terms and definitions. The technical clauses follow: the requirements themselves, the test or measurement methods by which conformity is established, the inspection rules that say how a lot is sampled and judged, and, for a product standard, the provisions on marking, packaging, transport and storage. Annexes, normative or informative, come last.

GB 20600-2006 runs to 15 pages in the English translation. What is delivered is the complete document in that order: every clause, every table, every figure and every annex of the Chinese original, with the same numbering, so that a reference to a clause number in a contract or a test report points to the same place in both languages.

About this English translation

The English edition of GB 20600-2006 is a full translation of the official Chinese text, not a summary, an abstract or a machine rendering left unchecked. Clause and subclause numbers, table and figure numbers and annex letters are those of the original, because they are what a specification, a purchase order or a test report cites.

Technical terms are translated against the vocabulary standards of the same field, so that a term used in GB 20600-2006 reads the same way as in the other Chinese standards it is used beside. Where a term has an established English form in an ISO or IEC document on the same subject, that form is used; where China's term has no foreign counterpart, it is translated literally and the Chinese is kept alongside it rather than replaced by an approximation.

Quantities, units and symbols are carried over unchanged. Chinese standards use SI, so a value in the translation is the value in the original document, not a conversion, and a limit read from the English text is the limit that will be applied by a Chinese inspection body reading the Chinese one.

This page is compiled from the official publication record: the standard number and both titles, the issuing bodies, the dates of issue and effect, the ICS and CCS classification. The requirements, limits, tables and test conditions are in the document itself.