

**GENERIC CODE OF PRACTICE ON  
TELEVISION TECHNICAL STANDARDS**

**BROADCASTING AUTHORITY**

**31 AUGUST 2007**

## **Contents**

<b>1.</b>	<b>Preamble</b>	<b>3</b>
<b>2.</b>	<b>I/PAL Colour Television System</b>	<b>4</b>
<b>3.</b>	<b>M/NTSC Colour Television System</b>	<b>5</b>
<b>4.</b>	<b>Multisound I/PAL System</b>	<b>6</b>
<b>5.</b>	<b>Technical Quality Standards and Reliability</b>	<b>7</b>
<b>6.</b>	<b>Conversion of Widescreen Programmes to 4:3 Programmes</b>	<b>9</b>
<b>7.</b>	<b>Loudness Control Limits</b>	<b>10</b>



## **Chapter 1                      Preamble**

1.1            This Code of Practice is issued by the Broadcasting Authority (BA), after consulting the Telecommunications Authority (TA), pursuant to section 3 of the Broadcasting Ordinance (Cap.562).

1.2            This Code is applicable to television programme services licensed under the Broadcasting Ordinance (Cap.562) except for a service provided to hotel rooms.

1.3            Unless otherwise approved by the BA, the signal formats of television programmes delivered on a licensed television programme service should comply with the formats, if any, specified in the statements (including statements of intention) and representations made by, or on behalf, of the licensee in its licence application. In particular,

- (a) Chapter 2 applies to a television programme service which employs the I/PAL Colour Television System;
- (b) Chapter 3 applies to a television programme service which employs the M/NTSC Colour Television System; and
- (c) Chapter 4 applies to a television programme service which employs the Multisound I/PAL System for the audio signals.

1.4            A licensee shall comply with the technical standards and directions issued from time to time by the TA which are applicable to it.

1.5            The standards set out in this Code should be read in conjunction with relevant legislation and licence conditions currently in force.

## **Chapter 2            I/PAL Colour Television System**

### **Introduction**

2.1        This chapter specifies the I/PAL Colour Television System and technical standards adopted for television programme services in Hong Kong.

### **The Television Signal**

#### *Television System*

2.2        The I/PAL television system used in Hong Kong must comply with the latest version of ITU-R Recommendation BT 470: Conventional Television Systems.

#### *Video Characteristic*

2.3        All picture signal, number of lines per picture, interlace, aspect ratio, gamma, colour subcarrier frequency, field frequency and video bandwidth broadcast and used by the I/PAL system must comply with the latest version of ITU-R Recommendation BT 470.

#### *Synchronizing and Blanking Waveforms*

2.4        The horizontal and vertical synchronizing, blanking and colour burst blanking waveforms used by the I/PAL system must comply with the latest version of ITU-R Recommendation BT 470.

#### *Video Signal*

2.5        The video characteristics broadcast and used by the I/PAL system must comply with the latest version of ITU-R Recommendation BT 470.

#### *Colour Picture Signal*

2.6        The colour picture signal broadcast and used by the I/PAL system must comply with the latest version of ITU-R Recommendation BT 470.

## **Chapter 3                    M/NTSC Colour Television System**

### **Introduction**

3.1            This chapter specifies the M/NTSC Colour Television System and technical standards adopted for television programme services in Hong Kong.

### **The Television Signal**

#### *Television System*

3.2            The M/NTSC television system used in Hong Kong must comply with the latest version of ITU-R Recommendation BT 470: Conventional Television Systems.

#### *Video Characteristic*

3.3            All picture signal, number of lines per picture, interlace, aspect ratio, gamma, colour subcarrier frequency, field frequency and video bandwidth broadcast and used by the M/NTSC system must comply with the latest version of ITU-R Recommendation BT 470.

#### *Synchronizing and Blanking Waveforms*

3.4            The horizontal and vertical synchronizing, blanking and colour burst blanking waveforms used by the M/NTSC system must comply with the latest version of ITU-R Recommendation BT 470.

#### *Video Signal*

3.5            The video characteristics broadcast and used by the M/NTSC system must comply with the latest version of ITU-R Recommendation BT 470.

#### *Colour Picture Signal*

3.6            The colour picture signal broadcast and used by the M/NTSC system must comply with the latest version of ITU-R Recommendation BT 470.

## **Chapter 4                      Multisound I/PAL System**

### **Introduction**

4.1        This chapter specifies the provision of multichannel sound television broadcast service for I/PAL system in Hong Kong.

### **Performance Specification for Multichannel Sound Television Broadcast**

#### *Frame Format*

4.2        The frame format used by the I/PAL multichannel sound television system used in Hong Kong must comply with the latest version of ITU-R Recommendation BS 707: Transmission of Multisound in Terrestrial Television Systems PAL B, D1, G, H and I, and SECAM D, K, K1 and L.

#### *Coding of Information*

4.3        The coding of information used by the I/PAL multichannel sound television system used in Hong Kong must comply with the latest version of ITU-R Recommendation BS 707.

#### *Modulation Parameters*

4.4        The modulation parameters used by the I/PAL multichannel sound television system used in Hong Kong must comply with the latest version of ITU-R Recommendation BS 707.

## **Chapter 5            Technical    Quality    Standards    and Reliability**

### **Introduction**

5.1        This chapter specifies the Technical Quality Standards and Reliability required for television programme services in Hong Kong.

### **Technical Quality Standards**

#### *Description of Standards of Technical Quality*

5.2        Licensees shall submit to the BA on request, a description of their procedures for ensuring high standards of technical quality.

#### *Monitoring of Technical Quality*

5.3        Licensees are required to make their own assessment of the technical quality of their services and to adopt procedures for ensuring high standards of technical quality.

#### *Quality Grading Scale*

5.4        Live studio outputs should normally achieve a sound and vision grade of 5 on the ITU-R 5-Point Quality Grading Scale (5-Excellent, 4-Good, 3-Fair, 2-Poor and 1-Bad) as specified in the latest version of ITU-R Recommendation BT 500: Methodology for the Subjective Assessment of the Quality of Television Pictures. Recorded programmes based on electronic production should normally achieve a grade of at least 4 and other programmes should normally achieve a grade of at least 3. However, where the materials include historical materials, news inserts, topical or actuality materials, and it is impracticable for licensees to improve the quality without affecting the integrity of the materials, or where low quality clearly forms part of the editorial intent of the programme, a lower score may be permitted.

5.5        Timing differences between the sound and vision of the transmitted programmes should not be, in the opinion of the BA, annoying to the viewer.



## **Reliability**

### *Standards of Reliability*

5.6 Standards of reliability, measured in terms of service availability to viewers, must be maintained to levels that are as high as reasonably practicable. The minimum standard of availability is 99.0% averaged over the preceding six months. This standard shall apply on an individual channel basis. Service availability should be measured at the connecting point at the viewers' end. For video-on-demand service, the reliability standard shall apply when the service is activated and service availability shall count on receipt of the video programme signals at the viewers' end (i.e. television programme signals alone, e.g. on the availability of video programmes, should not be counted as service availability). This availability figure should take account of a loss of video and sound or control data essential to view the services due to any cause under the control, either directly or through contract arrangements, of the licensees.

### *Monitoring of Reliability*

5.7 Licensees shall submit to the BA, within a reasonable time after being required to do so, a return on transmission performance that should include a summary of reliability performance results for distribution and transmission and an analysis of viewer complaints associated with poor reception quality during such period, and in such form, as the BA may direct.

5.8 A domestic free television programme service licensee and a domestic pay television programme service licensee shall, on or before the first of April of each year, submit a return in the specified form on transmission performance during the calendar year immediately preceding the calendar year to which the return relates.

## **Chapter 6                      Conversion of Widescreen Programmes to 4:3 Programmes**

### **Introduction**

6.1            Widescreen television picture commonly adopts an aspect ratio of 16 : 9 or other aspect ratios other than 4:3, and is wider than conventional television picture with an aspect ratio of 4:3. The widescreen television picture showing on conventional (4:3) screen involves some processing of the picture. If no processing takes place, the widescreen picture appears squashed on the 4:3 screen and distorted images may result.

### **Broadcasting or Processing Widescreen Picture**

6.2            In broadcasting or processing a widescreen picture for showing on a conventional screen (with an aspect ratio of 4:3), a licensee shall ensure that the objects in the frame will retain their true shape. It is not acceptable to distort the image to fill the 4:3 frame.

## **Chapter 7                      Loudness Control Limits**

### **Introduction**

7.1            This chapter specifies the loudness control limits for television programme services in Hong Kong.

### **Loudness Control Limits**

7.2            The subjective volume should be consistent with the programme material whilst at the same time preventing excessive loudness. Table 1 specifies the permitted normal peaks and full ranges on a peak programme meter for speech, music and advertisements of a television programme. The loudness of the output of a studio television programme should comply with the specified limits in Table 1 at all time.

**Table 1****PEAK PROGRAMME LEVELS OF STUDIO OUTPUT**

<b>Programme Type</b>	<b>Normal Peaks</b>	<b>Full Range</b>
<i>Speech</i>		
Talks, news, drama, documentaries, discussions, panel games, quiz shows etc.	5	3 - 6
<i>Music</i>		
Variety shows, dance music	4.5	2 - 6
Brass bands, military bands	4	2 - 5
Orchestral concerts	-	1 - 6
Light music	5.5	2 - 6
'Pop' records (and any recorded programme containing a high degree of compression)	4	2 - 4
Recorded programmes, live 'pop' shows (material not containing a high degree of compression)	5	2 - 6
<i>Advertisements/Promotional Material</i>		
Highly compressed	4.5	2 - 5
Slightly compressed	5	2 - 6

Notes: The levels specified above are related to standard peak programme meter readings with reference to a steady state reading of '4' corresponding to 0 dBu.

Normal peak is the upper limit for the volume of programme, whereas the full range limits the transients within the programme.