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**FUNCTIONAL REQUIREMENTS ON  
MOBILE HANDSET TO  
RECEIVE AND DISPLAY  
EMERGENCY ALERT SYSTEM MESSAGE**



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## FOREWORD

1. The Government of the Hong Kong Special Administrative Region (HKSARG) has commissioned the mobile network operators (“MNOs”) to set up an emergency alert system (“EAS”) for dissemination of time-critical public announcements and messages via the MNOs’ networks (“EAS Messages”) to mobile service users in Hong Kong.
2. This Regulatory Guide sets out the functional requirements for mobile handsets to enable them to properly receive and display EAS Messages disseminated via the networks of the MNOs.
3. The Regulatory Guide should be observed by mobile handset suppliers/manufacturers for supply of mobile handsets supporting third generation (“3G”), fourth generation (“4G”) and fifth generation (“5G”) mobile technologies as well as any future mobile communications technologies to be deployed in Hong Kong in compliance with the relevant standards and specifications adopted by the Communications Authority (“Handsets”).
4. Mobile handset suppliers/manufacturers should make their best endeavours to ensure that –
  - (a) all new models of Handsets that are to be supplied to Hong Kong comply with the requirements specified in this document; and
  - (b) firmware and/or software updates are available for all models of Handsets that have been supplied to or are currently used or marketed in Hong Kong to enable their compliance with the requirements specified in this document.
5. Mobile handset suppliers/manufacturers should provide documentations on firmware / software update instructions and handset settings procedures in relation to the proper reception and display of EAS Messages, including the associated audio alarm signal and vibration, for all models of their Handsets already supplied or will be supplied to Hong Kong in both Chinese and English. Such information should be furnished to the Office of the Communications

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Authority (“OFCA”) upon its request and provided to users of the Handsets in a convenient manner (e.g. by publication in websites).

6. This Regulatory Guide issued by the Communications Authority related to the EAS can be downloaded from the website of the OFCA at <http://www.ofca.gov.hk>.
7. OFCA may update this Regulatory Guide as and when necessary.
8. Any enquiry and request for further information regarding this document can be addressed to –

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## AMENDMENT TABLE

| <b>Item</b> | <b>Issue No.</b> | <b>Paragraph</b>  | <b>Descriptions</b>  |
|-------------|------------------|-------------------|--|
| 1           | 1                | Whole document    | First issue  |
| 2           | 2                | Foreword, 2.3.4   | Editorial changes  |
| 3           | 2                | 2.2, 2.5.3, 2.6.2 | Revise the number and naming of alert classes and make necessary consequential changes |
| 4           | 2                | 2.5.3             | Clarify the requirement on audio alarm signal  |

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## 1 INTRODUCTION

- 1.1 The Government of the Hong Kong Special Administrative Region (HKSARG) has decided to implement an emergency alert system (“EAS”) for dissemination of time-critical public announcements and messages (“emergency messages”) via the networks of the MNOs to mobile service users connected to their networks.
- 1.2 The functional requirements for the Handsets to enable them to properly receive and display EAS Messages disseminated via the networks of the MNOs are set out in paragraph 2.

## 2 REQUIREMENTS

### 2.1 TECHNICAL SPECIFICATION

- 2.1.1 The Handsets shall support reception and display of EAS Messages broadcasted to handsets using Cell Broadcast Service, as defined in the technical specification of the 3rd Generation Partnership Project (3GPP) entitled “Technical realization of Cell Broadcast Service (CBS)” with specification number 3GPP TS 23.041.

### 2.2 TYPES OF EAS MESSAGES AND MESSAGE IDENTIFIERS

- 2.2.1 The Handsets shall be capable of receiving all EAS Messages with message identifiers of 4370 to 4378 and 4380, as well as 4383 to 4391 and 4393<sup>1</sup>, displaying the EAS Messages according to the alert classes in Chinese and English language, and supporting default setting and user opt-out function as set out in **Table 1** below –

**Table 1**

| Message Identifier<br>(Primary Block) |                          | Message Identifier<br>(Secondary Block) |                            | Handset<br>Requirements |              |
|---------------------------------------|--------------------------|---|----------------------------|-------------------------|--------------|
| Message Identifier                    | Alert Class<br>(Chinese) | Message Identifier                      | Alert Class<br>(English)   | Default Setting         | User Opt-out |
| 4370                                  | 極度緊急警示                   | 4383                                    | Extreme<br>Emergency Alert | On                      | No           |
| 4371 –<br>4378                        | 緊急警示                     | 4384 –<br>4391                          | Emergency Alert            | On                      | Yes          |
| 4380                                  | 測試訊息                     | 4393                                    | Test Message               | Off                     | Yes          |

- 2.2.2 The Handsets shall be configured by default to display EAS Messages with message identifiers 4370 to 4378 and 4383 to 4391 and not to display EAS Messages with message identifiers 4380 or 4393.
- 2.2.3 Except messages with message identifiers 4370 and 4383<sup>2</sup>, user opt-out shall be allowed for EAS Messages with the message identifiers specified in **Table 1** above.

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1 Please refer to sections 9.4.2.2.2 and 9.4.3.2.1 of 3GPP TS 23.041.

2 Based on 3GPP TS 23.041, user opt-out is not allowed for EAS Messages with message identifiers 4370 or 4383.

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2.2.4 The classification of EAS Messages for display in the Handsets (including the user interface for default and user settings) shall strictly follow the alert classes specified in **Table 1** above<sup>3</sup>.

### **2.3 RECEPTION AND DISPLAY OF EAS MESSAGES**

2.3.1 The Handsets shall be able to support concurrent reception of multiple EAS Messages.

2.3.2 The Handsets shall support receiving and displaying EAS Messages in English, traditional Chinese and simplified Chinese.

2.3.3 The Handsets shall support receiving and displaying each EAS Message with a maximum length of 1395 7-bit characters for English, 615 16-bit characters in Universal Coded Character Set (“UCS-2”) encoding for Chinese, or 615 16-bit characters in UCS-2 encoding for a mix of English and Chinese characters.

2.3.4 The Handsets shall support receiving and displaying EAS Messages containing phone numbers, Uniform Resource Locators (“URLs”) and email addresses. The phone numbers, URLs and email addresses contained in the EAS Messages shall be selectable and clickable to enable the users to make a call, access a website or compose a new email directly<sup>4</sup>.

2.3.5 The delivery of the EAS Message shall not disrupt or disconnect an active voice or data session.

2.3.6 The Handsets shall not support any function to allow users to forward or copy the EAS Messages received.

### **2.4 POP-UP MESSAGE NOTIFICATION UPON RECEPTION OF EAS MESSAGE**

2.4.1 The Handsets shall be able to alert the users of the reception of an EAS Message by display of pop-up message such that it cannot be mistaken for receipt of an ordinary message. The Handsets shall be able to have duplication detection of EAS Messages of the same contents (such as using the same serial number) received within a duplication detection time of 24 hours and display the EAS Message only once.

2.4.2 Each EAS Message received by a Handset shall stay on the display as pop-up message regardless of the user settings for pop-up notification, until the message indication is cancelled by the user.

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3 Message identifiers 4379 and 4392 are not used in Hong Kong. Handsets shall not display any setting options / selection icons enabling mobile users to opt in or opt out the receipt of the EAS messages with message identifiers 4379 or 4392.

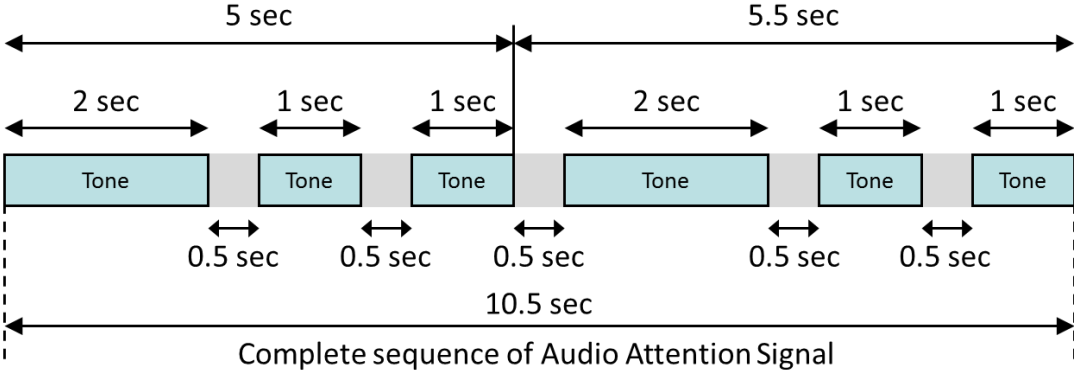
4 Mobile handset suppliers/manufacturers who are not able to ensure that the phone numbers, URLs and email addresses contained in the EAS Messages are selectable and clickable when this Regulatory Guide comes into effect should endeavour to make available this feature in the Handsets as soon as practicable.

2.4.3 The Handsets shall allow users to store and retrieve the EAS Messages received at a later time.

**2.5 AUDIO ALARM SIGNAL UPON RECEPTION OF EAS MESSAGE**

2.5.1 Upon receipt of EAS Messages with message identifiers specified in **Table 1** above, the Handsets shall be able to alert the users using audio alarm signal of standard pattern as shown in **Figure 1** below. The audio alarm signal shall have a pattern of one continuous tone of 2 seconds, followed by two short tones of 1 second each, with 0.5 second interval between tones. The same sequence of tones shall be repeated once more in the Handsets with a 0.5 second interval between sequences.

**Figure 1: Complete Sequence of Audio Alarm Signal**



2.5.2 The audio alarm signal of Handsets with polyphonic capability shall comprise dual tone frequencies of 853 Hz and 960 Hz while that of monophonic Handsets shall comprise single tone frequency of 960 Hz only.

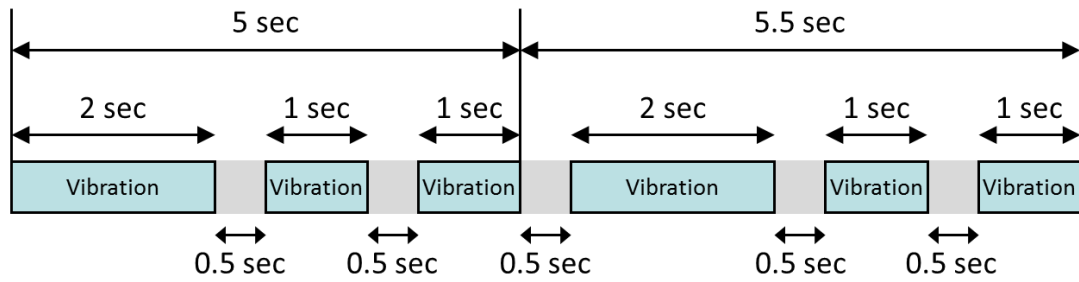
2.5.3 For EAS Messages with the Extreme Emergency Alert (極度緊急警示), the Handsets shall produce audio alarm signal at the maximum loudness level and shall not allow the users to mute the audio alarm signal.

**2.6 VIBRATION UPON RECEPTION OF EAS MESSAGE**

2.6.1 Upon receipt of EAS Messages with message identifiers specified in **Table 1** above, the Handsets shall be able to vibrate in accordance with the vibration cadence shown in **Figure 2** below. The vibration cadence shall have a pattern of one long vibration of 2 seconds, followed by two short vibrations of 1 second each, with 0.5 second interval between vibrations. The same sequence of vibrations shall be repeated once again with 0.5 second interval between sequences.



**Figure 2: Complete Vibration Cadence for EAS Message**



2.6.2 The Handsets shall not allow the users to deactivate the vibration for EAS Messages with the Extreme Emergency Alert (極度緊急警示).

### 3 REFERENCE DOCUMENT

3GPP TS 23.041: “Technical realization of Cell Broadcast Service (CBS)”