

HKTA 1041
ISSUE 1
FEBRUARY 2003

**PERFORMANCE SPECIFICATION FOR
RADIOCOMMUNICATIONS APPARATUS
OPERATING IN THE 27 MHz BAND
FOR PRIVATE USE**



**TELECOMMUNICATIONS AUTHORITY
HONG KONG**

FOREWORD

1. This specification is prescribed under section 32D of the Telecommunications Ordinance (Cap 106) (“the Ordinance”) to set out the technical and evaluation requirements for radiocommunications apparatus operating in the 27 MHz band for private use, as covered by the Telecommunications (Telecommunications Apparatus)(Exemption from Licensing) Order (“the Order”).
2. Under section 39 of the Ordinance, a person is exempted from the obligation to hold a licence under the Ordinance so long as the conditions set out in the Order are satisfied. Radiocommunications apparatus falling into the scope of this specification, unless covered by other specification with more specific scope, shall meet the requirements stipulated to fulfil the conditions of the Order.
3. It is the responsibility of the suppliers to ensure that their radiocommunications apparatus operating in the 27 MHz band comply with this specification. Compliance with this specification should be determined in accordance with the method of measurement contained in Annex 1 of this specification as far as possible. Where a test method specified in this specification cannot be followed, an alternatively appropriate method may be used. Suppliers may seek advice from the Telecommunications Authority (TA) if necessary.
4. At present, the Office of the Telecommunications Authority (OFTA) operates a **Hong Kong Telecommunications Equipment Evaluation and Certification (HKTEC) Scheme**. Details of the HKTEC Scheme can be found in the information note OFTA I 421. Under the Scheme, suppliers or manufacturers of the radiocommunications apparatus may apply to OFTA for certification of their apparatus against this specification. The application procedures for certification of radiocommunications apparatus can be found in the information note OFTA I 401. A prescribed label may be affixed to the equipment which has been certified by the TA. Details of the labelling arrangement can be found in the Standardisation Guide HKTA 3211.
5. Radiocommunications apparatus operating in the 27 MHz band are required to operate on a “no-interference no-protection” basis, i.e. they may not cause radio interference and cannot claim protection from interference. Manufacturers or suppliers of the apparatus are advised to consider the potentiality of interference due to the shared use of the frequencies.
6. The TA reserves the right to give separate certification to models he considers to be technical variants and the performance of which may differ between models.
7. The TA may amend any part of this specification as and when he deems necessary.
8. In case of doubt about the interpretation of this specification, the methods of carrying out the test and the validity of statements made by the equipment manufacturers or suppliers about the equipment, the decision of the TA shall be final.

9. The HKTA specifications and information notes are issued by the TA. The documents can be obtained through one of the following methods :-

- downloading direct through the OFTA's Internet Home Page. The Home Page address is <http://www.ofta.gov.hk>;
- making a request for hard copies to :-

Radio Laboratory, Standards Section
Office of the Telecommunications Authority,
29/F Wu Chung House,
213 Queen's Road East, Wanchai, Hong Kong.

Fax : +852 2343 5824
Email : radiolab@ofta.gov.hk

10. Enquiries about this specification may be directed to :-

Radio Laboratory, Standards Section,
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1 GENERAL

1.1 SCOPE OF SPECIFICATION

This specification defines the technical requirements for radiocommunications apparatus operating in the 27 MHz frequency band for private use, as covered by the Telecommunications (Telecommunications Apparatus)(Exemption from Licensing) Order.

1.2 DEFINITION

- (a) "mean power" has the meaning assigned to it by Article 1 of the Radio Regulations published by the International Telecommunication Union, edition of 1998, as revised from time to time;
- (b) "spurious emission" has the meaning assigned to it by Article 1 of the Radio Regulations published by the International Telecommunication Union, as revised from time to time;

1.3 MECHANICAL AND ELECTRICAL DESIGN

The equipment shall be so designed, constructed and manufactured in accordance with good engineering practice, and with the aim of minimising harmful interference to other equipment and services. Control knobs and the like, which if maladjusted might increase the interfering potentialities of the equipment, shall not be made accessible to the end user.

2. TECHNICAL REQUIREMENTS

The equipment shall satisfy the following conditions -

- (a) The operating frequency shall be within the frequency band 26.96 MHz to 27.28 MHz;
- (b) The mean power of the emission from the equipment shall not exceed 0.5 W;
- (c) The equipment shall have its emission confined within a 20 kHz band centred on the carrier frequency; and
- (d) The strength of the electric field of the spurious emissions produced by the equipment shall not exceed 500 $\mu\text{V/m}$ measured at a distance of 3 m from the equipment.

- END -

**METHOD OF MEASUREMENT FOR
RADIOCOMMUNICATIONS APPARATUS AGAINST HKTA 1041**

1. INTRODUCTION

This Annex describes a recommended method of measurement for radiocommunications apparatus against HKTA 1041 specification (hereafter referred to as the "Specification").

Compliance with the technical requirements in the Specification should be determined in accordance with this Annex as far as possible. Where a test method specified in this Annex cannot be followed, an alternatively appropriate method may be used. Suppliers may seek advice from the TA if necessary.

2. TEST CONDITIONS

The test conditions as specified in Clauses 2 and 3 of Annex 1 of HKTA 1035 "Performance Specification for Low Power Device" shall be followed wherever applicable.

3. TRANSMITTER TESTS

3.1 Mean Power

3.1.1 The mean power is the average power supplied to the antenna transmission line by a transmitter during an interval of time (T) sufficiently long compared with the lower frequency encountered in the modulation taken under normal operating conditions.

3.1.2 The mean power shall be determined as follows:

- (a) Method of measurement for equipment with antenna output terminals

The measurement applies only to equipment with a permanent external 50 ohm antenna connector.

The transmitter shall be connected to an artificial antenna (see Clause 3.3 of HKTA 1035 Annex 1) and shall be switched on, if possible, with modulation. The average power supplied to the artificial antenna over the time interval T shall be measured. The measured power shall be taken as the mean power.

- (a) Method of measurement for equipment with integral antenna

The mean power shall be taken as the average effective radiated power divided by the antenna gain. The effective radiated power shall be measured according to the method in Clause 3.6.3 of HKTA 1035 Annex 1 and averaged over the time interval T. The effective gain of the equipment antenna shall be stated based on measurement or on data supplied by the antenna manufacturer. The mean power shall be taken as the measured average effective radiated power divided by the stated antenna gain.

3.1.3 The mean power determined by the methods in Clause 3.1.2 above shall not exceed 0.5 W.

3.2 Emission Bandwidth

The emission bandwidth shall be taken as the necessary bandwidth, which is the width of the frequency band that is just sufficient to ensure the radio transmission of information at the rate and quality required. The necessary bandwidth shall be determined by one of the following methods —

- (a) Use of the formulae and examples of necessary bandwidths and designation of corresponding emissions given in ITU-R Recommendations SM.1138 "Determination of Necessary Bandwidths Including Examples for Their Calculation and Associated Examples for the Designation of Emissions" and SM.853-1 "Necessary Bandwidth" published by the International Telecommunication Union;
- (b) Computation, in accordance with other ITU-R Recommendations published by the International Telecommunication Union; and
- (c) Measurement, in cases not covered by (a) or (b) above.

The necessary bandwidth so determined shall not exceed 20 kHz.

3.3 Spurious Emission

To the extent possible, the equipment under test shall be measured on an open field site at a distance of 3 metres.

For any emission outside the authorised frequency band and separated by 250% or more of the necessary bandwidth from the carrier frequency, the measured electric field strength shall not exceed 500 $\mu\text{V/m}$.

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