

**Creation of a Class Licence for Regulating
the Use of and Trade in 79 GHz Automotive Radars
under Section 7B(2) of the Telecommunications Ordinance (Chapter 106)**

Consultation Paper

7 October 2016

INTRODUCTION

The automotive industry is devoted to the development and deployment of inter-alia automotive radars as an on-going improvement measure to ensure vehicles and road safety. In the early 2000s, automotive radars were designed to operate in the 76 – 77 GHz band (the “76 GHz band”). In Hong Kong, the former Telecommunications Authority made available the 76 GHz band for such purpose back in the last decade. Automotive radars operating in the 76 GHz band (“76 GHz Radars”) are now mostly deployed for long-range operation with a typical range of some 250 metres. With the advent of technology, automotive radars operating in the 77 – 81 GHz band (“79 GHz Radars”) are being developed, with the use of collision avoidance technology, for short-range applications (within 100 metres around a vehicle) with a view to further improving vehicles and road safety. Following the most recent decision of the International Telecommunication Union (“ITU”) on global frequency allocations, the Communications Authority (“CA”) has approved the allocation of the 77 – 81 GHz band (the “79 GHz band”) to radiolocation service¹ in Hong Kong with effect from 1 January 2017.

2. In view of the development of automotive radars and to enable the public to use and the industry to trade in 79 GHz Radars in Hong Kong, the CA proposes to create a class licence pursuant to section 7B(2) of the Telecommunications Ordinance (Cap. 106) (“TO”) to regulate the use/possession of and trade in 79 GHz Radars. This paper seeks to consult the public and the industry on the CA’s proposal.

3. For the avoidance of doubt, views expressed on matters covered in this paper are for the purpose of discussion and consultation only. Nothing in this paper represents or constitutes a decision made by the CA. The consultation contemplated by this paper is without prejudice to the exercise of powers by the CA under the TO.

¹ Radiolocation service is a radiocommunications service where radio signals are used to determine the position, velocity and other characteristics of an object.

BACKGROUND

Relevant Statutory Provisions

4. Under section 8(1) of the TO, save under and in accordance with a licence granted by the Chief Executive in Council or with the appropriate licence granted or created by the CA, no person shall in Hong Kong or on board any ship, aircraft or space object that is registered or licensed in Hong Kong –

- (a) establish or maintain any means of telecommunications; or
- (aa) offer in the course of business a telecommunications service; or
- (b) possess or use any apparatus for radiocommunications or any apparatus of any kind that generates and emits radio waves notwithstanding that the apparatus is not intended for radiocommunications; or
- (c) deal in the course of trade or business in apparatus or material for radiocommunications or in any component part of any such apparatus or in apparatus of any kind that generates and emits radio waves whether or not the apparatus is intended, or capable of being used, for radiocommunications; or
- (d) demonstrate, with a view to sale in the course of trade or business, any apparatus or material for radiocommunications.

5. Under sections 7B(1) and 7B(2) of the TO, the CA may create a class licence for telecommunications networks, systems, installations or services, with the class licence giving a person the right to carry on the activities specified therein that are prohibited under section 8(1) of the TO except under a licence, subject to the conditions of the class licence. Before creating a class licence, pursuant to section 7B(3) of the TO, the CA shall (a) by notice in the Gazette invite members of the public who are interested to make representations by a date not less than 21 days after the notice is published and as specified in the notice; and (b) consider the representations received by the date.

Class Licensing

6. Class licensing is commonly used by telecommunications regulators all over the world to license telecommunications networks, systems,

installations or services which share the use of a limited set of common frequencies under a common set of conditions. A class licence sets out the conditions under which any person is permitted to operate the telecommunications networks, systems, installations or services. It is not issued to an individual user and does not involve licence fees, and there is minimal licence administration by the regulators. The former Telecommunications Authority has adopted the class licensing approach since 2002 to regulate the use of telecommunications networks, systems, installations or services by various entities and individual members of the public, such as public wireless local area networking services, in-building telecommunications systems, 27 MHz citizens band radio stations, and 433 MHz short-range devices, etc. Recently, the CA also completed consultation with the public and industry on the creation of a class licence to regulate the use of radiocommunications equipment operating in the 57 – 66 GHz band.

7. In addition to creating class licences for the establishment, maintenance, possession and use of any means of telecommunications, section 7B(1) of the TO also empowers the CA to create class licences for regulating dealings in the course of trade or business in, and demonstration with a view to sale in the course of trade or business of, any radiocommunications equipment.

Industry Demand on 79 GHz Radars

8. In the early 2000s, automotive radars were designed to operate in the 76 GHz band and the said band was added to the Telecommunications (Telecommunications Apparatus) (Exemption from Licensing) Order (Cap. 106Z) some 10 years ago in order to facilitate the use of 76 GHz Radars in Hong Kong.

9. Most recently in the World Radiocommunication Conference (“WRC-15”) convened in November 2015, ITU decided to allocate the 77.5 – 78 GHz band to radiolocation service with effect from 1 January 2017. This effectively made available the entire 76 – 81 GHz band for radiolocation service as the sub-bands 76 – 77.5 GHz and 78 – 81 GHz had already been allocated to radiolocation service on a global basis prior to WRC-15. Following the ITU frequency allocation plan, the CA has approved the allocation of the 79 GHz band to radiolocation service in Hong Kong with effect from 1 January 2017.

10. 76 GHz Radars are now mostly deployed for long-range operation with a typical range of some 250 metres. With the advent of technology, 79 GHz Radars are being developed, with the use of collision avoidance technology, for short-range applications with a view to further improving vehicle and road safety since a large bandwidth of 4 GHz in the 79 GHz band

allows for higher spatial resolution and better capability of distinguishing surrounding objects at short distances within 100 metres around a vehicle. According to ITU, the use of collision avoidance technology through application of automotive radars can prevent or lessen the severity of a significant number of traffic accidents.²

THE PROPOSAL

The Proposed Licensing Regime

11. In response to the request and demand of the automotive industry for the deployment of 79 GHz Radars on vehicles, the CA proposes to create a class licence under section 7B(2) of the TO to regulate the use of and trade in 79 GHz Radars. The CA further proposes that the scope of the class licence should cover the possession, use, sale and demonstration of 79 GHz Radars, thereby obviating the need for individual licence application by users or traders.³ In view of the likely popularity of the use of 79 GHz Radars in the coming years, the class licence is considered an appropriate vehicle to regulate the use of and trade in these radiocommunications equipment in Hong Kong.

12. According to research by the Office of the Communications Authority (“OFCA”), many European countries, and Australia, Japan and Singapore in the Asian region allow the use of the 79 GHz band or part of it for automotive radar applications based on a light-handed licensing regime such as licence exemption or class licensing. In the United States, action is in hand to amend the relevant rules to allow operation of radars, including automotive radars, in the 79 GHz band using a class licensing approach. Regulating the use of 79 GHz Radars in Hong Kong with use of a class licence is therefore in line with the international regulatory practice.

13. Under the class licence, users of 79 GHz Radars will share the use of the 79 GHz band in an uncoordinated and unprotected basis. In view of the propagation characteristics of frequencies in the 79 GHz band, sharing the use of frequencies in an uncoordinated and unprotected manner is technically feasible. In fact, some developed economies including Hong Kong have successfully deployed 76 GHz Radars on vehicles in an uncoordinated and

² ITU report entitled “Report of the CPM to the World Radiocommunication Conference 2015”.

³ Without coverage by the class licence or licence exemption, the concerned traders would require a Radio Dealers Licence (Unrestricted) that authorises the licensee to possess and deal in the course of trade or business in apparatus or material for radiocommunications or in any component parts thereof, subject to the conditions set out in the licence. Respective users would also require a telecommunications licence for them to possess, maintain and use such automotive radars.

unprotected manner for years. In view of the similar propagation characteristics of the frequencies in the 76 GHz and 79 GHz bands, it is expected that 79 GHz Radars would also work well with other radiocommunications equipment operating in the same frequency band.

14. 79 GHz Radars will generally be installed on board a vehicle and be used in association with the relevant component parts of a vehicle. Such installation and use of the equipment on board of a vehicle will also need to comply with relevant safety requirements to be imposed by the Transport Department (“TD”). While the proposed class licence will permit the licensee to use/possess/trade in the equipment, it will not relieve the licensee from its obligation to comply with such safety requirements.

The Class Licence

15. The draft class licence is at **Appendix 1**. It authorises a person to establish, maintain, possess, use, deal in the course of trade or business in or demonstrate, with a view to sale in the course of trade or business, 79 GHz Radars, without the need to take out an individual licence. The major conditions and technical requirements of the proposed class licence are given below –

- (a) the proposed class licence does not authorise provision of any public telecommunications service with the use of 79 GHz Radars (which will be subject to separate consideration by the CA if technological advancement and service evolution allow such provision in the future);
- (b) 79 GHz Radars shall share use the same frequency band with other legitimate devices and applications in an uncoordinated and unprotected manner. That is to say, users shall not be protected from harmful interference and shall use the frequency band in such a way as to cause no harmful interference with other lawful telecommunications service or apparatus;
- (c) 79 GHz Radars must comply with a new specification HKCA 1075 entitled “Performance Specification for Short-Range Radar Equipment Operating in the 79 GHz Band” devised by OFCA. The draft specification HKCA 1075 is given at **Appendix 2**; and
- (d) the proposed class licence will not relieve the licensee from its obligation to comply with any safety requirements, if applicable, from TD for the installation of 79 GHz Radars on board a vehicle

and the use of the equipment in association with any component parts of a vehicle.

INVITATION OF VIEWS AND COMMENTS

16. The CA invites views and comments on the creation of the class licence, and the terms and conditions therein, as proposed in this consultation paper. After considering the views and comments received, the CA will finalise the regulatory framework for 79 GHz Radars and the class licence.

17. Any person wishing to respond to the public consultation should do so on or before 4 November 2016. The CA may publish all or part of the views and comments received, and disclose the identity of the source in such manner as the CA see fit. Any part of the submissions considered commercially confidential should be clearly marked. The CA would take such markings into account in making the decision as to whether or not to disclose such information. Submissions should be sent to –

Office of the Communications Authority
29/F Wu Chung House
213 Queen's Road East
Wanchai, Hong Kong
Attention: Senior Telecommunications Engineer
(Spectrum Planning) 1
Fax: 2803 5112
Email: spenq@ofca.gov.hk

An electronic copy of the submission should be provided by email to the address indicated above.

Office of the Communications Authority
7 October 2016

[DRAFT]

**TELECOMMUNICATIONS ORDINANCE
(Chapter 106)**

CLASS LICENCE

79 GHz AUTOMOTIVE RADAR

The Communications Authority, in exercise of the powers conferred on it by sections 7(5) and 7B(2) of the Telecommunications Ordinance (Chapter 106), issues this Licence on this [] day of [], 2017].

1. Interpretation

1.1 In this Licence –

“79 GHz Radar” means a radio station as described in the Schedule to this Licence;

“Authority” means the Communications Authority established by section 3 of the Communications Authority Ordinance (Chapter 616);

“Licensee” means a person licensed under Condition 2 of this Licence;

“Ordinance” means Telecommunications Ordinance (Chapter 106); and

“Telecommunication Convention” means any Constitution and Convention of the International Telecommunication Union and the Radio Regulations annexed thereto, which have from time to time or at any time been acceded to by or applied to Hong Kong.

1.2 Any word or expression used in this Licence shall, unless otherwise provided, have the same meaning as it has in the Ordinance or regulations made under the Ordinance.

1.3 For the purposes of interpreting this Licence, headings and titles shall be disregarded.

2. Grant of Licence

- 2.1 Subject to the terms and conditions of this Licence, a person is licensed to establish, maintain, possess, use, deal in the course of trade or business in and demonstrate, with a view to sale in the course of trade or business, 79 GHz Radar.

3. General

- 3.1 This Licence shall not be construed as granting an exclusive right to the Licensee.
- 3.2 This Licence replaces any licence or any exemption from licensing for the establishment, maintenance, possession and use of, dealing in the course of trade or business in and demonstration, with a view to sale in the course of trade or business, of 79 GHz Radar, however described, which the Authority may have granted to the Licensee.
- 3.3 This Licence shall remain in full force unless expressly revoked by the Authority.

4. Compliance Generally

- 4.1 The Licensee shall comply with the Ordinance, regulations made under the Ordinance, licence conditions or any other instruments which may be issued by the Authority under the Ordinance and such guidelines or codes of practices which may be issued by the Authority as in its opinion are suitable for the purpose of providing practical guidance on any particular aspect of any conditions of this Licence.
- 4.2 The Licensee shall observe and comply with all provisions of the Telecommunication Convention relevant to 79 GHz Radar.
- 4.3 The Licensee shall not use 79 GHz Radar to provide a public telecommunications service, except under and in accordance with an appropriate licence granted by the Authority.
- 4.4 Nothing contained in the Licence relieves the Licensee from its obligation to comply with any requirements, as applicable, from the Transport Department for the installation of 79 GHz Radar on board a vehicle and the use of 79 GHz Radar in association with any component

parts of a vehicle.

5. Interference

5.1 Where the Licensee establishes, operates, maintains or uses the 79 GHz Radar, the Licensee shall take reasonable measures to do so in such a way as not to cause any direct or indirect harmful interference with any lawful telecommunications service or any telecommunications apparatus licensed or authorised under the Ordinance. Where the Licensee deals in or possesses any 79 GHz Radar, the Licensee shall ensure compliance with Condition 6.

5.2 The Authority may give such reasonable directions as it thinks fit to avoid any direct or indirect harmful interference referred to in Condition 5.1. The Licensee shall comply with the directions.

5.3 The Licensee shall make 79 GHz Radar available for inspection and testing, if so required, by any person authorised for the purpose by the Authority.

5.4 The Licensee should be aware that the frequencies allocated to 79 GHz Radar are shared with other applications in an uncoordinated manner and not protected from harmful interference caused by other telecommunications installations or radio equipment operating in accordance with the provisions of the Ordinance, or regulations or orders made under the Ordinance.

6. Technical Criteria

6.1 The Licensee shall ensure that at all times they establish, maintain, operate, use, deal in the course of trade or business in, and demonstrate, with a view to sale in the course of trade or business, 79 GHz Radar which fully complies with the technical criteria specified in the Schedule.

SCHEDULE

79 GHz Radar

A 79 GHz Radar under this Licence refers to a radio station of the radiolocation service operating in the 79 GHz band and intended to be used as automotive radar. The 79 GHz Radar shall comply with the technical criteria below and the technical specification HKCA 1075 issued by the Authority pursuant to section 32D of the Ordinance.

Technical Criteria

Frequency band: 77 – 81 GHz

Maximum peak power: 55 dBm Equivalent Isotropically Radiated Power

Appendix 2

HKCA 1075

ISSUE 1

[Date]

[DRAFT]

PERFORMANCE SPECIFICATION FOR SHORT-RANGE RADAR EQUIPMENT OPERATING IN THE 79 GHz BAND



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 short-range radar equipment operating in the frequency range 77 – 81 GHz (the “79 GHz band”). Radiocommunications apparatus falling into the scope of this specification shall meet the stipulated requirements.
2. Under the Ordinance, the possession or use of any radiocommunications apparatus or any apparatus emitting radio frequency energy must be covered by an appropriate licence issued by the Communications Authority (CA) with the exception of those specifically exempted from licensing under the Ordinance, such as those covered by the Telecommunications (Telecommunications Apparatus) (Exemption from Licensing) Order.
3. At present, the Office of the Communications Authority (OFCA) operates a Hong Kong Telecommunications Equipment Evaluation and Certification (HKTEC) Scheme. Details of the HKTEC Scheme can be found in the information note OFCA I 421. Under the Scheme, suppliers or manufacturers of the radiocommunications apparatus may apply for certification of their apparatus against this specification. The application procedures for certification of radiocommunications apparatus can be found in the information note OFCA I 401. A prescribed label may be affixed to the equipment which has been certified. Details of the labelling arrangement can be found in the Standardisation Guide HKCA 3211.
4. The CA may amend any part of this specification as and when it deems necessary.
5. 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 CA shall be final.
6. The HKCA specifications and information notes issued by the CA can be downloaded from OFCA’s website at <http://www.ofca.gov.hk>. Enquiries about this specification may be directed to:

Senior Telecommunications Engineer,
Standards Section
Office of the Communications Authority,
29/F Wu Chung House,
213 Queen’s Road East,
Wanchai, Hong Kong.

Fax : +852 2838 5004
Email : standards@ofca.gov.hk

AMENDMENT TABLE

Item	Issue No.	Paragraph	Description
1.	Issue 1 [Date]	All	First Release

CONTENT

- 1. SCOPE OF SPECIFICATION**
- 2. TECHNICAL REQUIREMENTS**
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1. SCOPE OF SPECIFICATION

This specification sets out the minimum performance requirements for short-range radar equipment operating in the 77 – 81 GHz band (the “79 GHz band”) (hereafter referred as “the equipment”).

2. TECHNICAL REQUIREMENTS

2.1 The equipment shall meet the following technical requirements:

- (i) Frequency band : 77 – 81 GHz
- (ii) Maximum radiated peak power (e.i.r.p.): 55 dBm

2.2 The equipment shall meet the technical requirements in accordance with ETSI EN 302 264-2 “Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices; Road Transport and Traffic Telematics (RTTT); Short Range Radar equipment operating in the 77 GHz to 81 GHz band; Part 2: Harmonized EN covering the essential requirements of article 3.2 of the R&TTE Directive” published by the European Telecommunications Standards Institute.

3. EVALUATION REQUIREMENTS

Compliance of the equipment with the technical requirements shall be evaluated in accordance with the procedures specified in the standard given in clause 2.2 above.

4. REFERENCE

ETSI EN 302 264-2 “Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices; Road Transport and Traffic Telematics (RTTT); Short Range Radar equipment operating in the 77 GHz to 81 GHz band; Part 2: Harmonized EN covering the essential requirements of article 3.2 of the R&TTE Directive”

- END -