

# 3G ORANGE UK PUBLIC INTERFACE SPECIFICATION



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### AMENDMENT HISTORY

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# 1 INTRODUCTION

## 1.1 Purpose

The Radio Equipment and Telecommunications Terminal Equipment Directive 99/5/EC (R&TTE Directive) was implemented in the United Kingdom (UK) on the 8 April 2000 by The Radio Equipment and Telecommunications Terminal Equipment Regulations 2000, Statutory Instrument 2000 No. 730. In accordance with Articles 4.1 and 7.2 of Directive 1999/5/EC, this document details the public interface of Orange UK's 3<sup>rd</sup> Generation FDD Cellular Network.

This document has been written to satisfy the R&TTE Directive to publish the public interface on the Orange Personal Communications Ltd network, and is based on the UK interface requirements published by OFCOM.

The document is primarily aimed at providing technical information to equipment manufacturers in order to allow them to design equipment that is compatible with Orange's network and services.

## 1.2 Scope

The public interface is considered to be the interface between the mobile station and the base station equipment. This document specifies the standard GSM interfaces.

## 1.3 Responsibilities

Orange UK Radio Engineering will be responsible for updating this interface document, as and when the need arises.

## 1.4 Disclaimer

This document is published only for the purpose of compliance with the Radio and Telecommunications Terminal Equipment Directive (1999/5/EC) and the instruments implementing it into UK law and Orange's licence. Orange shall not be liable for any form of direct or indirect consequential or special loss of profit or business opportunity howsoever occurring from the issue or use of this document save that Orange does not restrict its liability for death or injury caused by the negligence of Orange. Nothing in this document shall preclude or impair any third party's intellectual property rights. The recipient of this document shall be responsible for ensuring that any work arising from its use shall not infringe the rights of any third party.

## 1.5 Intellectual Property Rights

For the avoidance of doubt, publication of this specification does not constitute a licence to use Orange's intellectual property rights.

## 1.6 Contact Information

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## 1.7 Reference / Related Documentation

[1] Ofcom UK Interface Requirement 2019 - Third Generation Mobile.

- [2] Recommendation ITU-R M.1457 - Detailed specifications of the radio interfaces of International Mobile Telecommunications-2000 (IMT-2000).
- [3] ERC/DEC/(99)25 - ERC Decision of 29 November 1999 on the harmonised utilisation of spectrum for terrestrial Universal Mobile Telecommunications System (UMTS) operating within the bands 1900 - 1980 MHz, 2010 - 2025 MHz and 2110 - 2170 MHz.
- [4] ETSI EN 301 908-01 V2.2.1 - Electromagnetic compatibility and Radio spectrum Matters (ERM); Base Stations (BS) and User Equipment (UE) for IMT-2000 Third Generation cellular networks; Part 1: Harmonized standard for IMT-2000, introduction and common requirements, covering essential requirements of article 3.2 of the R&TTE Directive.
- [5] ETSI EN 301 908-02 V2.2.1 - Electromagnetic compatibility and Radio spectrum Matters (ERM); Base Stations (BS) and User Equipment (UE) for IMT-2000 Third-Generation cellular networks; Part 2: Harmonized standard for IMT-2000, CDMA Direct Spread (UTRA FDD) (UE) covering essential requirements of article 3.2 of the R&TTE Directive.
- [6] ETSI EN 301 908-03 V2.2.1 - Electromagnetic compatibility and Radio spectrum Matters (ERM); Base Stations (BS) and User Equipment (UE) for IMT-2000 Third-Generation cellular networks; Part 3: Harmonized standard for IMT-2000, CDMA Direct Spread (UTRA FDD) (BS) covering essential requirements of article 3.2 of the R&TTE Directive.
- [7] ETSI EN 301 908-06 V2.2.1 - Electromagnetic compatibility and Radio spectrum Matters (ERM); Base Stations (BS) and User Equipment (UE) for IMT-2000 Third-Generation cellular networks; Part 6: Harmonized standard for IMT-2000, CDMA TDD (UTRA TDD) (UE) covering essential requirements of article 3.2 of the R&TTE Directive.
- [8] ETSI EN 301 908-07 V2.2.1 - Electromagnetic compatibility and Radio spectrum Matters (ERM); Base Stations (BS) and User Equipment (UE) for IMT-2000 Third Generation cellular networks; Part 7: Harmonized standard for IMT-2000, CDMA TDD (UTRA TDD) (BS) covering essential requirements of article 3.2 of the R&TTE Directive.
- [9] ETSI EN 301 908-11 V2.3.1 - Electromagnetic compatibility and Radio spectrum Matters (ERM); Base Stations (BS), Repeaters and User Equipment (UE) for IMT-2000 Third-Generation cellular networks; Part 11: Harmonized EN for IMT-2000, CDMA Direct Spread (UTRA FDD) (Repeaters) covering essential requirements of article 3.2 of the R&TTE Directive.

## 1.8 Definition of Terms

16QAM	16 Quadrature Amplitude Modulation
CDMA	Code Division Multiple Access
ETSI	European Telecommunications Standards Institute
FDD	Frequency Division Duplex
QPSK	Quadrature Phase Shift Keying

## 2 MINIMUM EQUIPMENT REQUIREMENTS FOR THIRD GENERATION MOBILE STATIONS AND REPEATERS OPERATING IN 1969.7 TO 1979.7 MHz BAND

1	Frequency band (or bands)	1969.7 to 1979.7 MHz
2	Radio service	Mobile service
3	Application	Third generation mobile
4	Channelling modulation	QPSK 200 kHz channel raster
5	Transmit power limit	24 dBm Power class 3 21 dBm Power class 4
6	Channel occupation rules	CDMA
7	Duplex type/separation	FDD, Mobile transmit, Repeater transmit/receive Paired carrier downlink 190 MHz above uplink
8	Licensing Regime	Network user equipment, meeting the minimum requirements outlined in this interface requirement, is exempt from licensing provided that it meets the requirements of the relevant exemption regulations  WT Act Third generation mobile licence required for repeaters
9	Additional essential requirements	None
10	Frequency planning assumptions	ETSI TS 125.101 ETSI TS 125.106
11	Reference	None
12	Remarks	None
13	Notification number	N/A

### 3 MINIMUM EQUIPMENT REQUIREMENTS FOR THIRD GENERATION BASE STATIONS AND REPEATERS OPERATING IN 2159.7 TO 2169.7 MHz BAND

1	Frequency band (or bands)	2159.7 to 2169.7 MHz
2	Radio service	Mobile service
3	Application	Third generation mobile
4	Channelling modulation	QPSK or 16QAM 200 kHz channel raster
5	Transmit power limit	62 dBm EIRP 58 dBm/MHz EIRP
6	Channel occupation rules	CDMA
7	Duplex type/separation	Base station transmit/Repeater transmit/receive Paired carrier with uplink 190 MHz below.
8	Licensing Regime	WT Act Third generation mobile licence
9	Additional essential requirements	None
10	Frequency planning assumptions	ETSI TS 125.104 ETSI TS 125.106
11	Reference	None
12	Remarks	None
13	Notification number	N/A