

1 EC-TYPE EXAMINATION CERTIFICATE



2 **Equipment or Protective systems intended for use in Potentially
Explosive Atmospheres - Directive 94/9/EC**

3 **EC-Type Examination Certificate No:** FM13ATEX0023X

4 **Equipment or protective system:
(Type Reference and Name)** HD795Ex, PD79aEx, and PD71aEx Radios

5 **Name of Applicant:** Hytera Communications Co., Ltd.

6 **Address of Applicant:** HYT Tower, Shenzhen Hi-Tech Industrial Park North,
Beihuan Road
Nanshan District, Shenzhen
China. 518057

7 This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and documents therein referred to.

8 FM Approvals Ltd, notified body number 1725 in accordance with Article 9 of Directive 94/9/EC of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential report number:

3042538 dated 13th August 2013

9 Compliance with the Essential Health and Safety Requirements, with the exception of those identified in item 15 of the schedule to this certificate, has been assessed by compliance with the following documents:

EN 60079-0:2012, EN 60079-11:2012

10 If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

11 This EC-Type Examination certificate relates only to the design, examination and tests of the specified equipment or protective system in accordance to the directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

12 The marking of the equipment or protective system shall include:



HD795Ex*, PD79aEx* Radio, and PD71aEx* Radio.

*UHF and VHF Bands

I M2 Ex ib I

-20 °C ≤ Ta ≤ +50 °C, IP5X

II 2 G Ex ib IIC T4

-20 °C ≤ Ta ≤ +50 °C, IP5X

II 2 D Ex ib IIIC T120 °C

-20 °C ≤ Ta ≤ +50 °C, IP5X

Mick Gower
Certification Manager, FM Approvals Ltd.

Issue date: 27th May 2015

THIS CERTIFICATE MAY ONLY BE REPRODUCED IN ITS ENTIRETY AND WITHOUT CHANGE

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SCHEDULE

to EC-Type Examination Certificate No. FM13ATEX0023X

13 Description of Equipment or Protective System:

The HD795Ex, PD79aEx, and PD71aEx are UHF and VHF Radios designed for industrial and explosive atmospheres. The main radio system consists of two major assemblies, which are the radio and battery, and also includes an optional push-to-talk microphone speaker attachment accessory. The battery pack enclosure contains two lithium-ion cells and a protection circuit board to ensure the battery is intrinsically safe on its own at the battery output terminal. The radio consists of two subassemblies which is the front housing and chassis.

The ambient operating temperature range of the HD795Ex, PD79aEx, and PD71aEx Radio is -20 °C to +50 °C.

In type of protection intrinsic safety, the HD795Ex, PD79aEx, and PD71aEx Radio operates at 8.4 V, 1.5 A.

The model codes are as follows;

HD795Ex* Radio

PD79aEx Radio

a = Region: 0(China mainland), 2(North America, Australia & New Zealand), 5(EMEA), 6(South & Latin America), 8(Asia (except China mainland))

PD71aEx Radio

a = Region: 0(China mainland), 2(North America, Australia & New Zealand), 5(EMEA), 6(South & Latin America), 8(Asia (except China mainland))

14 Specific Conditions of Use:

1. The HD795Ex, PD79aEx, and PD71aEx Radios shall only be used with optional remote speaker microphone accessory identified as Hytera Communications Co., Ltd. Part number SM18N4-Ex.
2. The HD795Ex, PD79aEx, and PD71aEx Radios shall only be used with Lithium-ion rechargeable battery pack identified as Hytera Communications Co., Ltd. part number BL1807-Ex.
3. Do not replace battery pack when an explosive gas or dust atmosphere is present.
4. Recharging of the Lithium-ion rechargeable battery pack shall only be performed in a non-hazardous area with a maximum ambient temperature of +40 °C.

15 Essential Health and Safety Requirements:

The relevant EHSRs that have not been addressed by the standards listed in this certificate have been identified and assessed in the confidential report identified in item 8.

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16 Test and Assessment Procedure and Conditions:

This EC-Type Examination Certificate is the result of testing of a sample of the product submitted, in accordance with the provisions of the relevant specific standard(s), and assessment of supporting documentation. It does not imply an assessment of the whole production.

Whilst this certificate may be used in support of a manufacturer's claim for CE Marking, FM Approvals Ltd accepts no responsibility for the compliance of the equipment against all applicable Directives in all applications.

This Certificate has been issued in accordance with FM Approvals Ltd's ATEX Certification Scheme.

17 Schedule Drawings

A list of the significant parts of the technical documentation is annexed to this certificate and a copy has been kept by the Notified Body.

18 Certificate History

Details of the supplements to this certificate are described below:

Date	Description
15 th August 2013	Original Issue.
17 th March 2014	<u>Supplement 1:</u> Report References: 3046833 dated 17 th March 2014. Description of the Change: Added VHF frequency band
27 th May 2015	<u>Supplement 2:</u> Report References: 3053589 dated 19 th May 2015 Description of the Change: Added non display version PD71aEx of the PD79aEx.

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Blueprint Report

Hytera Communications Co Ltd (123102)

Class No 3610

Original Project I.D. 3042538

Certificate I.D. FMI3ATEX0023X

<u>Drawing No.</u>	<u>Revision Level</u>	<u>Drawing Title</u>	<u>Last Report</u>	<u>Electronic Drawing</u>
152PD79000000	00	BOM, FRONT CASE	3042538	Yes (pdf)
CLCMSZ0455-E	1.0	BOM, TFT1P5766 LCD FPC	3042538	Yes (pdf)
CLCMSZ0455	D	ASSEMBLY, TFT1P5766 LCD FPC	3042538	Yes (pdf)
HYT-BOM-71XEx-001	1	BOM, PD710Ex CHANNEL SWITCH BOARD	3053589	Yes (pdf)
HYT-BOM-71XEx-002	1.0	BOM, PD710Ex 16 PIN FPC	3053589	Yes (pdf)
HYT-BOM-71XEx-003	1.0	BOM, PD710Ex 50 PIN FPC	3053589	Yes (pdf)
HYT-BOM-71XEx-004	1.0	BOM, PD710Ex RADIO MECHANICAL	3053589	Yes (pdf)
HYT-BOM-71XEx-005	1	BOM, PD710Ex FRONT HOUSING	3053589	Yes (pdf)
HYT-BOM-79XEx-001	3.0	BOM, PD79XEx (400-470 MHZ) UHF MAIN BOARD	3042538	Yes (pdf)
HYT-BOM-79XEx-002	2.0	BOM, PD79XEx CHANNEL SWITCH BOARD	3042538	Yes (pdf)
HYT-BOM-79XEx-003	1.0	BOM, PD79XEx 16 PIN FPC	3042538	Yes (pdf)
HYT-BOM-79XEx-004	2.0	BOM, PD79XEx KEYPAD BOARD	3042538	Yes (pdf)
HYT-BOM-79XEx-005	1.0	BOM, PD79XEx EARBUD FPC	3042538	Yes (pdf)
HYT-BOM-79XEx-006	3.0	BOM, BL1807Ex BATTERY PROTECTION BOARD	3042538	Yes (pdf)
HYT-BOM-79XEx-007	1.0	BOM, PD79XEx PTT FPC	3042538	Yes (pdf)
HYT-BOM-79XEx-008	1.0	BOM, PD79XEx 50 PIN FPC	3042538	Yes (pdf)
HYT-BOM-79XEx-009	1.0	BOM, PD79XEx RADIO MECHANICAL	3042538	Yes (pdf)
HYT-BOM-79XEx-010	2.0	BOM, PD79XEx FRONT HOUSING	3042538	Yes (pdf)
HYT-BOM-79XEx-011	2.0	BOM, PD79XEx RADIO BATTERY HOUSING	3042538	Yes (pdf)
HYT-BOM-SM18-001	2.0	BOM, SM18N4-Ex	3042538	Yes (pdf)
HYT-EXP-71XEx-001	1	PD71XEx FM LABEL	3053589	Yes (pdf)
HYT-EXP-71XEx-002	1	PD71XEx ATEX LABEL	3053589	Yes (pdf)
HYT-EXP-71XEx-003	1	PD71XEx CA LABEL	3053589	Yes (pdf)
HYT-EXP-71XEx-004	1	PD71XEx IECEx LABEL	3053589	Yes (pdf)
HYT-EXP-79XEx-002	5.0	PD79XEx ATEX LABEL	3042538	Yes (pdf)
HYT-I&M-79XEx-001	2.0	PD79XEx INSTRUCTION MANUAL	3042538	Yes (pdf)
HYT-MD-79XEx-003	D1	ASSEMBLY, PD79XEx MAIN BOARD	3042538	Yes (pdf)
HYT-MD-79XEx-004	D2	ASSEMBLY, CHANNEL SWITCH PCB	3042538	Yes (pdf)
HYT-MD-79XEx-005	D1	ASSEMBLY, 16 PIN FPC	3042538	Yes (pdf)
HYT-MD-79XEx-006	D1	ASSEMBLY, KEY BOARD PCB	3042538	Yes (pdf)
HYT-MD-79XEx-007	D1	ASSEMBLY, 50 PIN FPC	3042538	Yes (pdf)
HYT-MD-79XEx-008	D1	ASSEMBLY, EARPHONE FPC	3042538	Yes (pdf)
HYT-MD-79XEx-009	D1	ASSEMBLY, PTT FPC	3042538	Yes (pdf)
HYT-MD-79XEx-010	D1	ASSEMBLY, PD79XEx FRONT CASE	3042538	Yes (pdf)
HYT-MD-79XEx-011	D1	ASSEMBLY, PD79XEx FRONT COVER	3042538	Yes (pdf)
HYT-MD-79XEx-012	D1	ASSEMBLY, PD79XEx REAR COVER	3042538	Yes (pdf)
HYT-MD-79XEx-013	D1	ASSEMBLY, PD79XEx BATTERY FRONT CASE	3042538	Yes (pdf)
HYT-MD-79XEx-014	D1	ASSEMBLY, PD79XEx BATTERY BOTTOM CASE	3042538	Yes (pdf)
HYT-MD-79XEx-015	D1	ASSEMBLY, PD79XEx ALUMINUM CHASSIS	3042538	Yes (pdf)
HYT-MD-SM18-002	D1	ASSEMBLY, SM18N4-Ex ENCLOSURE	3042538	Yes (pdf)
HYT-MD-SM18-003	D1	ASSEMBLY, SM18N4-Ex CABLE & CONNECTORS	3042538	Yes (pdf)
HYT-PCB-79XEx-001	D	PCB LAYOUT, PD79XEx (400-470 MHZ) UHF MAIN BOARD	3042538	Yes (pdf)
HYT-PCB-79XEx-002	D	PCB LAYOUT, PD79XEx PCB	3042538	Yes (pdf)
HYT-PCB-79XEx-004	C	PCB LAYOUT, PD79XEx CHANNEL SWITCH BOARD	3042538	Yes (pdf)
HYT-PCB-79XEx-005	B	PCB LAYOUT, PD79XEx 16 PIN FPC BOARD	3042538	Yes (pdf)
HYT-PCB-79XEx-006	C	PCB LAYOUT, PD79XEx KEYPAD BOARD	3042538	Yes (pdf)
HYT-PCB-79XEx-007	B	PCB LAYOUT, PD79XEx 16 PIN ACCESSORY BOARD	3042538	Yes (pdf)
HYT-PCB-79XEx-008	B	PCB LAYOUT, PD79XEx EARBUD FPC BOARD	3042538	Yes (pdf)
HYT-PCB-79XEx-009	C	PCB LAYOUT, BL1807Ex BATTERY BOARD	3042538	Yes (pdf)
HYT-PCB-79XEx-010	C	PCB LAYOUT, BL1807Ex BATTERY BOARD	3042538	Yes (pdf)
HYT-PCB-79XEx-011	B	PCB LAYOUT, BL1807Ex BATTERY FPC BOARD	3042538	Yes (pdf)
HYT-PCB-79XEx-012	B	PCB LAYOUT, PD79XEx PTT FPC BOARD	3042538	Yes (pdf)
HYT-PCB-79XEx-013	B	PCB LAYOUT, PD79XEx 50 PIN FPC BOARD	3042538	Yes (pdf)
HYT-PCB-79XEx-014	B	PCB LAYOUT, PD79XEx 16 PIN ACCESSORY BOARD	3042538	Yes (pdf)
HYT-PCB-79XEx-015	B	PCB LAYOUT, PD79XEx 16 PIN FPC BOARD	3042538	Yes (pdf)
HYT-PCB-79XEx-016	B	PCB LAYOUT, PD79XEx 50 PIN FPC BOARD	3042538	Yes (pdf)
HYT-PCB-79XEx-017	C	PCB LAYOUT, PD79XEx CHANNEL SWITCH BOARD	3042538	Yes (pdf)
HYT-PCB-79XEx-018	C	PCB LAYOUT, PD79XEx KEYPAD BOARD	3042538	Yes (pdf)
HYT-PCB-79XEx-019	B	PCB LAYOUT, PD79XEx PTT FPC BOARD	3042538	Yes (pdf)
HYT-PCB-79XEx-020	B	PCB LAYOUT, PD79XEx EARBUD FPC BOARD	3042538	Yes (pdf)
HYT-PCB-SM18-001	D	PCB LAYOUT, SM18N4-Ex BOARD	3042538	Yes (pdf)

HYT-SCH-79XEx-001	4.0	SCHEMATIC, PD79XEx (400-470 MHZ) UHF MAIN BOARD	3042538	Yes (pdf)
HYT-SCH-79XEx-002	1.0	SCHEMATIC, PD79XEx CHANNEL SWITCH BOARD	3042538	Yes (pdf)
HYT-SCH-79XEx-003	1.0	SCHEMATIC, PD79XEx 16 PIN FPC BOARD	3042538	Yes (pdf)
HYT-SCH-79XEx-004	1.0	SCHEMATIC, PD79XEx KEYPAD BOARD	3042538	Yes (pdf)
HYT-SCH-79XEx-005	1.0	SCHEMATIC, PD79XEx 16 PIN ACCESSORY BOARD	3042538	Yes (pdf)
HYT-SCH-79XEx-006	1.0	SCHEMATIC, PD79XEx EARBUD FPC BOARD	3042538	Yes (pdf)
HYT-SCH-79XEx-007	4.0	SCHEMATIC, BL1807Ex BATTERY BOARD	3042538	Yes (pdf)
HYT-SCH-79XEx-008	1.0	SCHEMATIC, PD79XEx PTT FPC BOARD	3042538	Yes (pdf)
HYT-SCH-79XEx-009	1.0	SCHEMATIC, PD79XEx 50 PIN FPC BOARD	3042538	Yes (pdf)
HYT-SCH-SM18-001	2.0	SCHEMATIC, SM18N4-Ex BOARD	3042538	Yes (pdf)