




# IECEx Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit [www.iecex.com](http://www.iecex.com)

Certificate No.:	IECEx LCIE 15.0043X	issue No.:0	Certificate history:
Status:	Current		
Date of Issue:	2015-09-10	Page 1 of 3	
Applicant:	<b>COMUFRANCE</b> 62 Avenue de l'Europe 77184 EMERAINVILLE France		
Electrical Apparatus:	<b>THYR9 adapters, Interfaces PTT online, Electro-acoustic devices for portable transceiver, types : COMU ADP, COMU LOCIN, COMU ALEX09, COMU ALEX795, COMU OSTEO, COMU LARYNGO</b>		
Optional accessory:			
Type of Protection:	<b>ib</b>		
Marking:	<b>Ex ib IIC T4 Gb</b> <b>IECEx LCIE 15.0043 X</b> (see annex for full informations)		
Approved for issue on behalf of the IECEx Certification Body:	Remi Hanot		
Position:	Certification Officer		
Signature: (for printed version)			
Date:	<u>2015/09/10</u>		

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the [Official IECEx Website](http://www.iecex.com).

Certificate issued by:  
**Laboratoire Central des Industries Electriques (LCIE)**  
**33 Avenue du General Leclerc**  
**FR-92260 Fontenay-aux-Roses**  
**France**

Documents relative to LCIE certification activities (Certificates, QARs, ExTRs) can be registered under the references "LCI" or "LCIE".





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Page 2 of 3

Manufacturer: **COMUFRANCE**  
62 Avenue de l'Europe  
77184 EMERAINVILLE  
France

Additional Manufacturing location  
(s):

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

## STANDARDS:

The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

**IEC 60079-0 : 2011** Explosive atmospheres - Part 0: General requirements  
Edition: 6.0

**IEC 60079-11 : 2011** Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"  
Edition: 6.0

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

## TEST & ASSESSMENT REPORTS:

*A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in*

Test Report:  
[FR/LCIE/ExTR15.0081/00](#)

Quality Assessment Report:  
[FR/LCI/QAR10.0009/05](#)



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Page 3 of 3

## Schedule

### EQUIPMENT:

*Equipment and systems covered by this certificate are as follows:*

**Description :** see annex for full informations  
THR9 adapters type COMU ADP and COMU LOCIN.  
Interfaces PTT online type COMU ALEX09 and COMU ALEX795.  
Electro-acoustic device type COMU OSTEO.  
Electro-acoustic device type COMU LARYNGO.

**Marking :** see annex for complete marking

**Electrical parameters :** see annex

**Routine test :** none

### CONDITIONS OF CERTIFICATION: YES as shown below:

The apparatus must be only connected to a certified intrinsically safe equipment. This combination must be compatible regarding intrinsic safety rules (see electrical parameters).

Operating ambient temperature : -20°C to +55°C

**Annex:** LCIE 15.0043X Issue 00-annex 01.pdf

## Description of the equipment :

### THR9 adapters type COMU ADP and COMU LOCIN :

The THR9 adapters are intended to be connected to all types of certified intrinsically safe two-way radios whose electrical characteristics of the accessory connector do not exceed any electrical parameters defined for the apparatus.

The THR9 adapters consist of :

- a specific case,
- one (ADP) or two (LOCIN) printed circuit,
- one receptacle intended to connect an electroacoustic device.

### Interfaces PTT online type COMU ALEX09 and COMU ALEX795:

The interfaces PTT online are intended to be connected to all types of transmitters receivers radio certified intrinsically safe (with or without adapter) whose electrical characteristics of the accessory connector (or adapter) do not exceed any electrical parameters defined for the apparatus.

The interfaces PTT online are connected to the portable transceivers directly on the connectors provided for this purpose by the manufacturers of the radio equipment or through adapters. A connector (panel mounted receptacle) allows a connection of one electro-acoustic device (head accessory).

The interfaces PTT online consist of :

- a specific case,
- a printed circuit board,
- a PTT command (push button) intended to put the transmitter receiver in transmission mode,
- a connector (panel mounted receptacle) intended to connect an electro-acoustic device.

The interfaces PTT online are connected to the portable transceivers sockets (through or not an adapter) provided for this purpose via a cable and a connector.

### Electro-acoustic device type COMU OSTEO :

The electro-acoustic devices are heads equipment with microphone at osseous conduction (osteo-microphone) and speaker (named OSTEO system) intended to be connected to all types of portable transceivers or to interfaces PTT online (themselves connected to all types of portable transmitters receivers) of certified intrinsically safe whose the electrical characteristics of the connectors do not exceed any electrical parameters defined for the apparatus.

The electro-acoustic devices are connected to the portable transceivers directly on the connectors provided for this purpose by the manufacturers of the radio equipment or to the interfaces PTT online on the connectors provided for the purpose (themselves connected to the portable transceivers through or not an adapter).

The OSTEO systems consist of :

- a microphone at osseous conduction,
- a printed circuit board screwed on the microphone,
- one earpiece with housing or two earpieces with housing.

The electro-acoustic devices are connected to the portable transceivers sockets or to the connector (panel mounted receptacle) of the interfaces PTT online provided for this purpose via a cable and a connector.

### Electro-acoustic device type COMU LARYNGO :

The electro-acoustic devices are heads equipment with two microphones (positioned around the neck) and one earpiece kit (named LARYNGO system) intended to be connected to all types of portable transceivers or to interfaces PTT online (themselves connected to all types of portable transmitters receivers) of certified intrinsically safe whose the electrical characteristics of the connectors do not exceed any electrical parameters defined for the apparatus.

The electro-acoustic devices are connected to the portable transceivers directly on the connectors provided for this purpose by the manufacturers of the radio equipment or to the interfaces PTT online on the connectors provided for the purpose (themselves connected to the portable transceivers through or not an adapter).

The OSTEO systems consist of :

- two microphones,
- one speaker,
- spiral acoustic tube,
- earplug insert,
- curved bar.

The electro-acoustic devices are connected to the portable transceivers sockets or to the connector (panel mounted receptacle) of the interfaces PTT online provided for this purpose via a cable and a connector.



## Annex 01 to Certificate IECEX LCIE 15.0043X issue 00



### Marking :

COMUFRANCE      Address :  
Type : COMU  
Model : ADP  
Serial number : ...  
Year of construction : ...  
Ex ib IIC T4 Gb  
IECEX LCIE 15.0043 X  
 $U_i$  : 4.2V,  $I_i$  : 7.8A,  $P_i$  : 4.68W,  $C_i$  : 10 $\mu$ F,  $L_i$  : 0  
 $U_o$  : 4.2V,  $I_o$  : 7.8A,  $P_o$  : 4.68W,  $C_o$  : 10 $\mu$ F,  $L_o$  : 0

COMUFRANCE      Address :  
Type : COMU  
Model : LOCIN  
Serial number : ...  
Year of construction : ...  
Ex ib IIC T4 Gb  
IECEX LCIE 15.0043 X  
 $U_i$  : 4.2V,  $I_i$  : 7.8A,  $P_i$  : 4.68W,  $C_i$  : 10 $\mu$ F,  $L_i$  : 0  
 $U_o$  : 4.2V,  $I_o$  : 7.8A,  $P_o$  : 4.68W,  $C_o$  : 5 $\mu$ F,  $L_o$  : 0

COMUFRANCE      Address :  
Type : COMU  
Model : ALEX09  
Serial number : ...  
Year of construction : ...  
Ex ib IIC T4 Gb  
IECEX LCIE 15.0043 X  
 $U_i$  : 4.2V,  $I_i$  : 7.8A,  $P_i$  : 4.68W,  $C_i$  : 1.8 $\mu$ F,  $L_i$  : 0  
 $U_o$  : 4.2V,  $I_o$  : 7.8A,  $P_o$  : 2.4W,  $C_o$  : 2 $\mu$ F,  $L_o$  : 0

COMUFRANCE      Address :  
Type : COMU  
Model : ALEX795  
Serial number : ...  
Year of construction : ...  
Ex ib IIC T4 Gb  
IECEX LCIE 15. 0043X  
 $U_i$  : 8.7V,  $I_i$  : 0.425A,  $P_i$  : 3.57W,  $C_i$  : 0.1 $\mu$ F,  $L_i$  : 0  
 $U_o$  : 8.7V,  $I_o$  : 0.425A,  $P_o$  : 3.57W,  $C_o$  : 25nF,  $L_o$  : 0

COMUFRANCE      Address :  
Type : COMU  
Model : OSTEO  
Serial number : ...  
Year of construction : ...  
Ex ib IIC T4 Gb  
IECEX LCIE 15.0043 X  
 $U_i$  : 4.2V,  $I_i$  : 7.8A,  $P_i$  : 2.4W,  $C_i$  : 10nF,  $L_i$  : 0  
or  
 $U_i$  : 8.7V,  $I_i$  : 0.425A,  $P_i$  : 3.57W,  $C_i$  : 10nF,  $L_i$  : 0

COMUFRANCE      Address :  
Type : COMU  
Model : LARYNGO  
Serial number : ...  
Year of construction : ...  
Ex ib IIC T4 Gb  
IECEX LCIE 15.0043 X  
 $U_i$  : 4.2V,  $I_i$  : 7.8A,  $P_i$  : 2.4W,  $C_i$  : 0,  $L_i$  : 0  
or  
 $U_i$  : 8.7V,  $I_i$  : 0.425A,  $P_i$  : 3.57W,  $C_i$  : 0,  $L_i$  : 0

**Electrical parameters :**

**Type COMU ADP :**

$U_i$  : 4.2V,  $I_i$  : 7.8A,  $P_i$  : 4.68W,  $C_i$  : 10 $\mu$ F,  $L_i$  : 0  
 $U_o$  : 4.2V,  $I_o$  : 7.8A,  $P_o$  : 4.68W,  $C_o$  : 10 $\mu$ F,  $L_o$  : 0

**Type COMU LOCIN :**

$U_i$  : 4.2V,  $I_i$  : 7.8A,  $P_i$  : 4.68W,  $C_i$  : 10 $\mu$ F,  $L_i$  : 0  
 $U_o$  : 4.2V,  $I_o$  : 7.8A,  $P_o$  : 4.68W,  $C_o$  : 5 $\mu$ F,  $L_o$  : 0

**Type COMU ALEX09 :**

$U_i$  : 4.2V,  $I_i$  : 7.8A,  $P_i$  : 4.68W,  $C_i$  : 1.8 $\mu$ F,  $L_i$  : 0  
 $U_o$  : 4.2V,  $I_o$  : 7.8A,  $P_o$  : 2.4W,  $C_o$  : 2 $\mu$ F,  $L_o$  : 0

**Type COMU ALEX795 :**

$U_i$  : 8.7V,  $I_i$  : 0.425A,  $P_i$  : 3.57W,  $C_i$  : 0.1 $\mu$ F,  $L_i$  : 0  
 $U_o$  : 8.7V,  $I_o$  : 0.425A,  $P_o$  : 3.57W,  $C_o$  : 25nF,  $L_o$  : 0

**Type COMU OSTEO :**

$U_i$  : 4.2V,  $I_i$  : 7.8A,  $P_i$  : 2.4W,  $C_i$  : 10nF,  $L_i$  : 0  
or  
 $U_i$  : 8.7V,  $I_i$  : 0.425A,  $P_i$  : 3.57W,  $C_i$  : 10nF,  $L_i$  : 0

**Type COMU LARYNGO :**

$U_i$  : 4.2V,  $I_i$  : 7.8A,  $P_i$  : 2.4W,  $C_i$  : 0,  $L_i$  : 0  
or  
 $U_i$  : 8.7V,  $I_i$  : 0.425A,  $P_i$  : 3.57W,  $C_i$  : 0,  $L_i$  : 0