



TESTCOM – Certifying Body for Certification of Products No. 3136,
accredited by CAI according to ČSN EN ISO/IEC 17065:2013
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EU-type examination **C E R T I F I C A T E**

(Radio Equipment Directive 2014/53/EU, Annex III, module B)

No. 0220-CC-V0003-24

Product:	PROGRAMMABLE UHF FM TRANSCEIVER MODULE
Trade name / brand name	UHF FM Transceiver module
Model / Type:	DTX-446 / DTX-446-F
Manufacturer	Ritron, INC.
Manufacturer address:	505 West Carmel Drive, Carmel, IN460032, USA
Software version:	DTXL-PCPX-2.4-USB
Hardware version:	DTX-446-0BN5E
Frequency bands of operation:	450 – 490 MHz MHz

The Notified Body No.:1383 - Czech Metrology Institute,
after the examination of the technical documentation as drawn by the manufacturer,
announces
that the essential requirements of Article 3.1a, 3.1b and Article 3.2
of Radio Equipment Directive 2014/53/EU (Government Decree No.: 426/2016 Coll.)
have been met.

The conformity assessment on the radio equipment listed above and as described in Annex 1 to this EU-type examination certificate has been carried out in accordance with Annex III (module B) of Radio Equipment Directive 2014/53/EU (Government Decree No.: 426/2016 Coll., Annex 3).

A list of documentation forming the basis for the EU-type examination is provided in Annex 2 to this EU-type examination certificate.

This EU-type Examination certificate relates only to the documents as provided to CMI.

Brno, May 23, 2024



Dr. Pavel Klenovský
Head of Notified Body

Annex 1 to EU-type examination certificate for RED 2014/53/EU

No.: 0220-CC-V003-24

Model: DTX-446 / DTX-446-F

Date of issue: May 23, 2024

Technical description:

RITRON's DTX-446 transceiver module operates in the 450 to 490 MHz frequency band. Typical radio parameters such as frequency, power, deviation, deviation balance, squelch level and audio input and output gain are PC adjustable. The transceiver is a single board unit with components on one side.

The unit supports voice through a microphone input and a nominal one watt speaker output or data through the auxiliary in and auxiliary out ports. Each radio can be programmed to contain a unique set of eight operating frequencies and sub-audible tones.. The channel selection is done in a binary manner on the CS2, CS1 and CS0 inputs. Separate RX and TX Quiet Call (CTCSS) or Digital Quiet call (DCS) tones can be programmed per channel. Transmitter wide or narrow deviation can be programmed on a per channel basis. The unit is factory set up to transmit 2 or 5 watts when operating at 12 VDC. The standby current drain at 12 VDC is typically about 50 mA.

The DTX-446 is available in an aluminum encased version with a BNC connector or a board-only. To meet the requirements of the ETSI EN 300 086 standard, it is necessary to operate the DTX-446 device with a DTX-446-F type filter inserted on the antenna connector of the DTX-446 device.

Basic technical parameters:

Frequency range:	450 MHz to 490 MHz
RF channels:	Eight Independent TX/RX frequencies
Channel Separation:	12,5 kHz
Maximum transmit power:	1,0W to 5W
Frequency Stability:	+/-1.5 PPM (-15°C to +40°C)
Tone/Code Signaling:	CTCSS (Quiet Call) and DCS
Sensitivity (12 dB SINAD):	0.3 µV (RECEIVER - 12.5 kHz Narrow band)
Power Supply:	10,8 VDC to 13,2 VDC , nominal 12VDC
Current Drain:	<i>RX Standby:</i> 50 mA at 12 VDC
Max. current consumption:	3 A
Operating conditions:	
temperature:	-15°C to +40°C
Dimensions:	(125 x 75 x 30) mm
Weight:	277 g

Český metrologický institut
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Annex 2 to EU-type examination certificate for RED 2014/53/EU

No.: 0220-CC-V003-24

Model: DTX-446 / DTX-446-F

Date of issue: May 23, 2024

1. Test report:

Radio parameters

EMC

Product Safety

RF safety

Report number:

1226AUT18 TestReport_Rev2
(TIMCO Engineering, Inc.)
8551-PT-R0060-24
8551-PT-E0291-23
8551-PT-B0060-24
RITRON01-24
(Manufacturer Report)

Dated:

August 21 2018

May 14, 2024

December 27, 2023

February 29, 2024

January 17, 2024 - - -

2. Certificate: - - -

3. Technical Documentation Provided:

- DTX-446 International transceiver – Datasheet
- DTX-446 Programmable UHF FM Transceiver module – Users Manual
- DTX-446 EU-Photos
- DTX-446 Wiring diagram
- DTX-446 Assembly drawings
- DTX-446 DoC
- Risk Assessment
- Label

4. Standards used to demonstrate conformity with the essential requirements of Radio Equipment Directive 2014/53/EU:

Radio Spectrum (Article 3.2):	ETSI EN 300 086 2.1.2
EMC (Article 3.1.b):	ETSI EN 301 489-1 V2.2.3
	ETSI EN 301 489-3 V2.3.2
Product Safety (Article 3.1a)	EN IEC 62 368-1:2020 + A11:2020
RF Safety (Article 3.1a)	EN 62311:2020

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Additional information:

This is Class 1 device.

Radio Equipment Directive 2014/53/EU, Article 10.4: Manufacturers shall keep the technical documentation and the EU declaration of conformity for 10 years after the radio equipment has been placed on the market.

Radio Equipment Directive 2014/53/EU, Article 10.6: Manufacturers shall ensure that radio equipment which they have placed on the market bears a type, batch or serial number or other element allowing its identification, or, where the size or nature of the radio equipment does not allow it, that the required information is provided on the packaging, or in a document accompanying the radio equipment.

Radio Equipment Directive 2014/53/EU, Article 10.7: Manufacturers shall indicate on the radio equipment their name, registered trade name or registered trade mark and the postal address at which they can be contacted or, where the size or nature of radio equipment does not allow it, on its packaging, or in a document accompanying the radio equipment. The address shall indicate a single point at which the manufacturer can be contacted. The contact details shall be in a language easily understood by end-users and market surveillance authorities.

Radio Equipment Directive 2014/53/EU, Article 10.8: Manufacturers shall ensure that the radio equipment is accompanied by instructions and safety information in a language which can be easily understood by consumers and other end-users, as determined by the Member State concerned. Instructions shall include the information required to use radio equipment in accordance with its intended use. Such information shall include, where applicable, a description of accessories and components, including software, which allow the radio equipment to operate as intended. Such instructions and safety information, as well as any labelling, shall be clear, understandable and intelligible.

The following information shall also be included in the case of radio equipment intentionally emitting radio waves:

- (a) frequency band(s) in which the radio equipment operates;
- (b) maximum radio-frequency power transmitted in the frequency band(s) in which the radio equipment operates.

Radio Equipment Directive 2014/53/EU, Article 10.9: Manufacturers shall ensure that each item of radio equipment is accompanied by a copy of the EU declaration of conformity or by a simplified EU declaration of conformity. Where a simplified EU declaration of conformity is provided, it shall contain the exact internet address where the full text of the EU declaration of conformity can be obtained.

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Radio Equipment Directive 2014/53/EU, Article 10.10: In cases of restrictions on putting into service or of requirements for authorization of use, information available on the packaging shall allow the identification of the Member States or the geographical area within a Member State where restrictions on putting into service or requirements for authorization of use exist. Such information shall be completed in the instructions accompanying the radio equipment.

Radio Equipment Directive 2014/53/EU, Article 19.2: On account of the nature of radio equipment, the height of the CE marking affixed to radio equipment may be lower than 5 mm, provided that it remains visible and legible.

Radio Equipment Directive 2014/53/EU, Article 20.1: The CE marking shall be affixed visibly, legibly and indelibly to the radio equipment or to its data plate, unless that is not possible or not warranted on account of the nature of radio equipment. The CE marking shall also be affixed visibly and legibly to the packaging.

Radio Equipment Directive 2014/53/EU, Annex III, Module B7: The manufacturer shall inform the notified body that holds the technical documentation relating to the EU-type examination certificate of all modifications to the approved type that may affect the conformity of the radio equipment with the essential requirements of this Directive or the conditions for validity of that certificate. Such modifications shall require additional approval in the form of an addition to the original EU-type examination certificate.

In accordance with Notified Body guidance; if there are no changes, a Notified Body EU-type examination certificate has a validity of 10 years from the date of issue.

The manufacturer may make changes to the specified types of hardware (HW) and software (SW) with the notification of the notified body of the changes made.

The Declaration of Conformity under Directive 2014/53/EU or a copy thereof must be supplied with each device.

Device designation:



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