



**OIML Member State**  
United Kingdom of Great Britain  
and Northern Ireland

**OIML Certificate No.**  
**R21/2007-B-GB1-20.01**  
**Revision 1**

**OIML CERTIFICATE ISSUED UNDER SCHEME B**

OIML Issuing Authority **NMO**  
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Person responsible: **Mannie Panesar – Head of Technical Services**

Applicant **ITALTAX SRL**  
**Via dell'Industria, 16**  
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**Italy**

Manufacturer **The applicant**

Identification of the certified type **F4 Plus, F4 Slim and F4 Plus - F**  
*(the detailed characteristics are defined in the Descriptive Annex)*

This OIML Certificate attests the conformity of the above identified type (represented by the sample(s) identified in the OIML type evaluation report) with the requirements of the following Recommendation of the International Organization of Legal Metrology (OIML):

**OIML R21 – Edition 2007(E)**

Issue date: 21 December 2020

**The OIML Issuing Authority**

**Grégory Glas**  
**Lead Technical Manager**  
*For and on behalf of the Head of Technical Services*

This OIML Certificate relates only to metrological and technical characteristics of the type of measuring instrument covered by the relevant OIML Recommendation identified above.

This OIML Certificate does not bestow any form of legal international approval.

The conformity was established by the results of tests and examinations provided in the associated OIML type evaluation report:

No. P02733 dated 17 January 2020 that includes 16 pages.

The technical documentation relating to the identified type is contained in documentation file:

No. P02733-D dated 17 January 2020.

No. P02874-D dated 21 December 2020.

#### **OIML Certificate History**

<b>Revision No.</b>	<b>Date</b>	<b>Description of the modification</b>
0	17 January 2020	OIML Certificate first issued.
1	21 December 2020	Frontpage addition of F4 Plus - F. Section Devices: taximeter and printer configurations separated for F4 Slim and F4 Plus (different methods). Addition of Alternative Section 3.

This revision replaces previous versions of the certificate.

*Important note:*

*Apart from the mention of the Certificate's reference number and the name of the OIML Member State in which the Certificate is issued, partial quotation of the Certificate and of the associated OIML type evaluation report(s) is not permitted, although either may be reproduced in full.*

## DESCRIPTIVE ANNEX

### Characteristics of the instrument:

The pattern is a family of taximeters designated the F4 Plus and F4 Slim, designed to be installed in a road vehicle for the calculation of fares. The fares are calculated based on measurement of distance and time; the instrument operates in calculation modes S (single application of tariff) or D (double application of tariff). The instrument is powered via the vehicle battery.

The distance measuring device (transducer) is not covered by this certificate.

### Model variants and designation:

#### Construction:

The F4 Plus comprises a PCB housed within a plastic enclosure, one LED or LCD display, seven push buttons, and a thermal printer built-in at the back of the meter. The F4 Slim comprises a PCB housed within a plastic enclosure, one LED or LCD display, seven push buttons, and an external thermal printer connect to the meter.

The PCB holds all the electronics, including the components associated to the remote download of tariff (GPRS modem, GSM Simcard, GSM antenna).

The plastic enclosure consists of front and rear parts held together with screws, with a sealed removable part on the right-hand side allowing access to the test connector. The manufacturer seal seals the enclosure. The third sealing point is the wiring harness seal.

An additional plate is fitted at the bottom (F4 Plus) / rear (F4 Slim) of the instrument, which is used to seal the instrument in the vehicle.

### Devices:

- Display check
- Calculation modes S or D
- Fare calculation (initial fare, fare increments, extras)
- Display of rate, mode (For Hire, Hired, Stopped) and fare (actual fare and total fare with extras)
- Display of distance and time for the journey
- Loading of tariffs and software (via sealed interface)
- Real time clock
- Long-term totalisers (non-resettable)
- Display of parameters, software and tariff information (read-only)
- Test connector
- Remote download of tariff (“Over The Air”)
  
- Hardwire connected Thermal Printer for F4 Slim:  
The taximeter has a secure RS232 serial connection-link with a Digitax printer, which for any trip starts the secure connection checks:
  - a) The online presence of the Printer

- b) The pairing serial number between the taximeter and printer (only the paired taximeter & printer will work)
- c) The paper presence

The taximeter is blocked if any of the above checks fails.

- Hardwire connected Thermal Printer for F4 Plus:  
The F4 Plus has an internally connected Printer mechanism controlled by taximeter CPU directly. For any trip start, it checks:
  - a) The online presence of the printer mechanism
  - b) The paper presence

The taximeter is blocked if any of the above checks fails.

Interfaces:

- 2 x RS232
- Passenger Sensor
- External Lights Input
- Odometer Input
- External Lights power output
- Magnetic Card reader
- Dallas 1-Wire Net
- CAN Bus input
- Mobile data terminal interface
- Test Connector
- Service/Programming Keys
- POS point of sale interface
- TIM Reader
- Protocol Interface with third part device
- Interface for external Bluetooth device

Technical data:

Power supply	9 to 16 VDC (12 V nominal)
Taximeter constant k	500 to 65,535 pulses/km
Maximum speed	200 km/h
Pulse voltage amplitude (low/high)	0 - 0.3 VDC / 5 -12 VDC
Pulse frequency	≤ 1 kHz
Minimum pulse width	50 μs
Electromagnetic environment	E3
Mechanical environment	M3
Climatic environment	-25°C to +70 °C
	Condensing (closed)

Firmware:

The legally relevant software is held in the firmware and is unambiguously identified by its release name and CRC-16 checksum value.

The firmware release name and CRC versions programmed in the taximeter can be displayed as follows:

- From For Hire Position press at the same time K2+K3+K4
- Wait few seconds
- In the main display will be shown the CRC Firmware number
- In the secondary display will be shown the Country identification with 3 letters and 2 numbers.

The software identification shall be as follows:

<b>Software release name</b>	<b>CRC (checksum value)</b>	<b>Country / Language</b>
F4G01	64883	Generic / Programmable

Software download is only possible via the Service programming key, which is protected by the mechanical seal described in the Sealing measures section.

### Tariff

The instrument allows the remote download of tariff (“Over The Air”, OTA), without breaking the mechanical seal.

In order to be able to download the tariff and the firmware OTA, the taximeter has to be enrolled to the OTA Server. This is a manual procedure that is started from the taximeter, using a dedicated ID memory key, and then confirmed from the OTA Server.

Taximeter communication with the OTA server is protected using SSL and uses both client and server certificates for authentication. Access to the OTA Server Web Interface is only allowed using HTTPS and registered security tokens for client and user identification and authentication.

Using the OTA Server Web Interface, it is possible to load a new tariff or firmware into the server, and then download them to all the registered taximeters or only to a group of them. Each taximeter periodically polls the OTA server, and if a new tariff or firmware is found then it is automatically downloaded, authenticated and programmed into the taximeter itself, without the need for breaking the mechanical seal.

The tariff is protected by a CRC-16 checksum, the checksum value can be displayed on the taximeter by pressing K1+K4 keys in For Hire status: the taximeter will start the display self-check procedure and at the end will show the tariff CRC in its main display and the firmware name in the secondary display.

### Sealing measures:

The taximeter is fitted with sealing points preventing access to the metrological components and sealing the instrument to the vehicle.

### Alternatives:

1. Having alternative software identifications as follows:

<b>Software release name</b>	<b>CRC (checksum value)</b>	<b>Country / Language</b>
ECU03	20512	Republic of Ecuador / Spanish
GRE02	62969	Greece / Greek

2. Having the following alternative configuration for instruments installed in Greece (GRE02), to comply to the Greek fiscal regulations. The combined taximeter and printer are designated as “F4 Slim – Digitax Printer Six.

The taximeter has a secure RS232 serial connection link, paired with a “Digitax Printer six” printer, that at any trip starts the secure connection checks:

- a) The online presence of the “Digitax Printer six”
- b) The pairing serial number between the taximeter and printer (only the paired taximeter & printer will work)
- c) The paper presence

The taximeter is blocked if any of the above checks fails.

3. Having the following alternative model designated F4 Plus – F

The taximeter F4 Plus – F (only LCD screen version, Figure 9) is installed in Greece. This taximeter F4 Plus – F has an integrated printer mechanism and fiscal memory (PROM memory) manufactured by ITALTAX SA.

The taximeter is fitted with an expansion board which includes 2 microSD slots (one internal for fiscal files (receipts) and one external and removable for driver files backup), and an additional RS232 serial port which can be connected to a PC to read the fiscal memory and fiscal files.

When the taximeter issues the receipts, the receipts are printed and saved in appropriate text files in the internal microSD, together with their digital signature.

The removable microSD has the sole purpose of receiving the backup copy of some of the files that are produced at the end of a shift, to allow the driver to store them in another place as backup.

The microSD cards cannot be used for uploading tariffs or taximeter firmware, and has no influence on the metrological characteristics of the taximeter.

If the taximeter is not able to communicate with the expansion board, the taximeter is locked.

The F4 Plus – F has an internally connected Printer mechanism controlled by taximeter CPU directly. At the beginning of every trip:

- a) Checks Printer Mechanism presence
- b) Checks paper presence
- c) Check internal SD presence

The taximeter is blocked if any of the above checks fails. The taximeter cannot start a new measurement unless the legal receipt of the current trip has been printed.

The Taximeter F4 Plus – F is sealed with plastic or lead seal with a metal screw in A (programming port), B (housing), C (cable harness) positions.

The fiscal memory is sealed inside the enclosure.

The software identification is as follow:

<b>Software re-lease name</b>	<b>CRC (checksum value)</b>	<b>Country / Language</b>
F4F01	57961	Greece / Greek