

	
OIML Member State United Kingdom of Great Britain and Northern Ireland	OIML Certificate No. R21/2007-B-GB1-20.01
OIML CERTIFICATE ISSUED UNDER SCHEME B	
OIML Issuing Authority	NMO Stanton Avenue Teddington TW11 0JZ United Kingdom Person responsible: Mannie Panesar – Head of Technical Services
Applicant	ITALTAX SRL Via dell'Industria, 16 62017 Porto Recanati (MC) Italy
Manufacturer	The applicant
Identification of the certified type	F4 Plus & F4 Slim <i>(the detailed characteristics are defined in the Descriptive Annex)</i>
<p>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):</p> <p>OIML R21 – Edition 2007(E)</p>	
Issue date: 17 January 2020 The OIML Issuing Authority  Grégory Glas Lead Technical Manager <i>For and on behalf of the Head of Technical Services</i>	

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.

OIML Certificate History

Revision No.	Date	Description of the modification
0	17 January 2020	OIML Certificate first issued.
-	-	No revisions have been issued.

No revisions have been issued.

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
 - Hardwire connected Thermal Printer (built into the enclosure or stand out):
The taximeter has a secure RS232 serial connection-link with a Digitax 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
- In case of one of the above checks is False, the taximeter gets blocked.
In case that the pair has been done successfully and the taximeter is not

- blocked, then the taximeter and printer are defined as a one combined system.
- Remote download of tariff (“Over The Air”)

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:

Software release name	CRC (checksum value)	Country / Language
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:

Software release name	CRC (checksum value)	Country / Language
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.