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

OIML Certificate No
R21/2007-GB1-17.04

OIML CERTIFICATE OF CONFORMITY

Issuing authority:	**NMO**
Person responsible:	**Mannie Panesar – Head of Technical Services**
Applicant:	**Streamax Technology CO LTD** **21-23/F B1 Building, Zhiyuan** **No.1001 Xueyuan Avenue** **Nanshan District, Shenzhen City** **Guangdong Province** **P.R.China**
Manufacturer:	**The applicant**
Identification of the certified pattern:	**TP2 series**

This certificate attests the conformity of the above-mentioned pattern (represented by the samples identified in the associated test report) with the requirements of the following Recommendation of the International Organisation of Legal Metrology (OIML):

OIML R21 - Edition 2007(E)

This certificate relates only to the metrological and technical characteristics of the pattern of the instrument concerned, as covered by the relevant OIML International Recommendation.

This certificate does not bestow any form of legal international approval.

Important note: Apart from the mention of the certificates reference number and the name of the OIML Member State in which the certificate was issued, partial quotation of the certificate or of the associated test report is not permitted, though they may be reproduced in full.

Issue Date: **19 December 2017**

G Stones
Technical Manager
For and on behalf of the Head of Technical Services

UKAS
PRODUCT
CERTIFICATION
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The conformity was established by testing and examinations described in the associated Evaluation Report P02187 which includes 15 pages.

Characteristics of the instrument:

Characteristics:

The pattern is a taximeter series designated the TP2 series, 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). The instrument is powered via the vehicle battery.

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

Main features:

The TP2 series is a mobile terminal device connected to a data hub. The terminal device comprises a PCB housed within a plastic enclosure. The device is composed of the following modules: microprocessor (CPU), data memory, real-time clock, GPS, touch screen display and IC card reader. Additional seven push buttons act as functional keys. The IC card reader is an access control service swipe card reader. The system runs on the Android platform.

The terminal device is connected to a data hub through a 4-pin cable, where the pulse signal from the transducer is received via a serial port. The data hub is composed of microcontroller (MCU), power supply and other interfaces. The taximeter can be connected to a thermal printer through RS232 interface.

The plastic enclosures of the terminal device and the data hub consist of front and rear parts held together with screws. The sealing points seal the enclosure of the terminal device and stickers seal the enclosure of the data hub.

The connections between the terminal/data hub and data hub/transducer shall be sealed.

An additional frame is fitted at the back of the instrument, which may be used to seal the instrument in the vehicle.

Devices:

- – Display check
- – Calculation mode S
- – Fare calculation (initial fare, fare increments, extras)
- – Display of tariff identification, operating 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)
- – Optional hardwired Thermal Printer (with detections of absence or malfunction)

Interfaces:

- RS232
- Passenger Sensor
- External Lights Input
- Odometer Input
- External Lights power output
- CAN Bus input
- Mobile data terminal interface
- Service/Programming IC card reader
- POS point of sale interface
- Interface for external Bluetooth device

Technical data:

Power supply	9 to 16 VDC (12 V nominal)
Taximeter constant k	500 to 65,500 pulses/km
Maximum speed	200 km/h
Pulse voltage amplitude (low/high)	0 - 0.3 VDC / 5 -12 V DC
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:

- activate administrator/tariff change/driver account using the corresponding IC card;
- select Setup icon to go into setup menu;
- select Maintain menu and slide to Valuate Setup tab;
- Terminal and Data hub versions are displayed at the bottom.

The software identification shall be as follows:

Software release name	CRC (checksum value)
Terminal: RMVST_TP2_T2017122101.13.385	ver crc: 1766921761
Data Hub: TP-M02-STM32-MCU-T711141	DATAHUB CRC: 3848018254

A non-editable counter designated "System ID" increments whenever the legally parameters are changed. The value of the counter can be displayed via the Valuate Setup tab.

Software download is only possible via the sealable serial interface, which is protected by the mechanical seal described in the Sealing measures section.

Tariff

The tariff can only be changed using the administrator/tariff change accounts, with all changes recorded in the audit trail described in the following section. The current tariff can be displayed as follows:

- activate administrator/tariff change/driver account using the corresponding IC card;
- select Setup icon to go into setup menu;
  select Maintain menu and slide to Valuate Setup tab to display current values and tariff ID

Audit trail

An audit trail records all legally relevant changes (application software, legally relevant parameters and tariff). This information can be accessed via:

- activate administrator/tariff change/driver account using the corresponding IC card;
- select Setup icon to go into setup menu;
- select Maintain menu and slide to Audit Trail tab

Sealing measures:

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

Alternatives:

There are currently no authorised alternatives

CERTIFICATE HISTORY

ISSUE NO.	DATE	DESCRIPTION
R21/2007-GB1-17.04	19 December 2017	Certificate first issued.
-	-	No revisions have been issued.