

OPERATIONAL DESCRIPTION

1.1. EUT description

UNattended

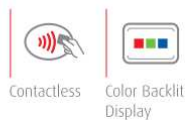
 **iUC180**



Incorporating electronic secure payment into your unattended solution has never been easier thanks to the new UNattended Series from Ingenico (iUN). Featuring the iUC150 and the iUC180 UNattended contactless readers, the iUP250 UNattended PINPad with RGB backlit display, and a separate iUR250 Hybrid Card Reader (HCR) to ensure maximum design integration into any kiosk chassis, the iUN series is designed to reach latest standards, such as **EMV and PCI PTS 3.x** – it delivers all the necessary **security certifications and hardware safeguards**. Tough enough to meet the demands of any **indoor or outdoor self-service scenari** – including parking, ticketing, petrol, transport and vending – these iUN compact modules are resistant enough to cope with inclement weather, vandalism and truly challenging climate conditions.

The iUC180 **delivers the convenience and speed of the latest in contactless payment to your unattended solutions** with ease. This **stand-alone terminal, state-of-the-art solution fully compliant with EVA (European Vending Association) requirements**, offers a true User Interface with an RGB backlit display, a wide range of connectivity options and maximum versatility for integration into any chassis (even metallic) – with no interference for the contactless performance.

The iUC180 guarantees high-speed payments and optimal selling convenience. It supports the **latest EMV contactless payment standards, including PayPass™, PayWave™, etc.** and is ready for future evolutions.



iUC180

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Security

Ingenico's trusted Telium® architecture enables the iUC180 to provide assured, secure data and application management. It is MasterCard PayPass™ and Visa PayWave™ certified (in progress) and supports all EMV contactless cards in accordance with international regulations.

Performance

Thanks to its 32-bit architecture and EMV level 2 kernel, the iUC180 delivers super fast authentication and contactless transaction processing (payment in 80 ms). What's more, it manages all contactless payment EMV cards and supports NFC mobile phone payments.

Design/Ergonomics

With exceptional integration capabilities, the iUC180 is designed to be easy to customize and compatible with any chassis. It complies with EVA (European Vending Association) specifications and features an ergonomically styled PIN Pad, an RGB backlit display, 4 well visible transaction indicator LEDs, buzzer and is shock, water and dust resistant (IP65/IK10). Performing in highly demanding environmental conditions, it operates in an extended range of temperatures from -20°C to +65°C. The iUC180 is easy to customize – the layout sheet may be changed in the field.

Communication

The iUC180 features a wide range of integrated connectivity features including USB Slave, USB Master, RS232, RS485, MDB (Multi Drop Bus), and Ethernet and optional GPRS for maximum versatility and faultless operation. It ensures ease-of-integration in the field to existing self-service solutions – for a simple and fast rollout of the very latest in contactless payment features.

Software development

Ingenico delivers incremental revenue today and future proofs the terminal investments of tomorrow. Compatible with all previous Ingenico applications, the iUC180 can support today's applications with ease, as well as tomorrow's next generation services.

Field Services

To reduce total cost of ownership and enable merchants to maximize their terminal investments, Ingenico provides a comprehensive range of terminal and software update and management services – both remotely and in the field. Fully certified professionals and local language helpdesks operate in every territory to ensure Ingenico is on hand to support customers 24 hours a day, seven days a week, 365 days a year.

NAME	iUC180	
Processor	Type	Risc 32-bits ARM9
	Speed	450 MIPS
Memory	RAM/Flash	16MB/128MB
Removable memory	µSD Card	1
Communication mode	GPRS	Option
	Ethernet	•
	Bluetooth	Option
SAM		2
SIM		Option
Card readers	Contactless	ISO 14443 A/B
Display	Graphic 128 x 64 pixels	•
	Backlit RGB	•
	Black & white	•
Buzzer		•
Connections	RS232	1 or 2
	USB Host	4
	USB Slave	1
	MDB Slave	•
	MDB Master	Option
Power supply	External power supply	12V – 3A
	Stand by mode	•
Size	W x H x D mm	132 x 120 x 62
Weight		620g
Environment	Operating temperature	-20°C to +65°C
	Storage temperature	-20°C to +65°C
	Relative humidity, non condensing	90% HR at +55°C
IP	Ingress protection	IP65
IK	Shock protection	IK10

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1.2. Related Submittal(s) / Grant(s)

All host equipment used in the test configuration are FCC granted, when relevant.

1.3. Tested System Details

The FCC IDs for all equipment, plus description of all cables used in the tested system are:

- Internal max frequencies <500MHz (Declaration of provider)

- **Power supply:**

- DC voltage, 12-30VDC, tested at 12VDC (worst case)

During all the tests, EUT is supplied by an AC/DC adaptor, not supplied with EUT so not tested, PHIHONG PSM36W-120TW, 100-240VAC / 1.5A / 50-60Hz, output 12VDC / 3A.

- **Input/output:**

- 1 x Power supply connector, 2 wires

- 5 x USB

- 1 x LAN

- 2 x COM

- 1 x Earth

- 1 x Jack "Clock"

- 1 x MDB master

- 1 x MDB slave, same connector that power supply

- 2 x SMA connector, GPRS and Bluetooth

- 2 x SAM

- 1 x SIM

- 1 x MicroSD

- **Modular Approval contained:**

- 1 x GPRS module, SAGEMCOM, HILO V2 INGENICO, FCC ID: VW3HILOV2

- **Auxiliaries used for testing:**

- 1 x Laptop TOSHIBA SATELLITE, PS141E-04YC, Sn: 13594938G

- 2 x SAM

- 1 x SIM

- 1 x Contactless card

• **I/O cables used for testing:**

- 1 x AC power cord, 2 wires, unshielded: 2m
- 1 x DC power supply cable (fixed on mains power unit), unshielded: 1.75m
- 1 x Ethernet cable Type: STP Cat 5e, shielded: 1m
- 5 x USB cables, shielded: 1m
- 2 x RS232 Com cables, RJ11, unshielded, 1.5m (COM 0 & COM 2)
- 1 x MDB-slave '6 pins' <-> MDB-master '8 pins' cable, unshielded, 4 wires, length: 1m
- 1 x Jack cable, unshielded, length: 0.2cm

• **Equipment information – 13.56MHz:**

- Type: Bluetooth Other: 13.56MHz RFID
- Frequency band: [13.56] MHz
- Number of channel: 1
- RF mode: TX/RX RX Standby
- Antenna type: Internal
- Antenna connector: Permanent external Permanent internal Temporary None
- (only for tests)
- Normal power source: 12VDC (host)
- Extreme temperature range: -30°C to +55°C
- Extreme test source voltage: 12VDC ±10% other:

• **Equipment information:**

- Type: Bluetooth Other:
- Frequency band: [2400.0 – 2483.5] MHz
- Number of channel: 79
- Channel tested: Full test on 2402MHz / 2441MHz / 2480MHz
- Modulation Technology: FHSS DSSS
- Modulation type: GFSK Pi/4 DQPSK 8DPSK
- Packet type: DH1 DH3 DH5
- Transfert data rate: 1Mbps 2Mbps 3Mbps
- RF mode: TX/RX RX Standby
- Antenna type: SMA connector + Whip antenna (not supplied)
- Antenna connector: Permanent external Permanent internal Temporary None
- (only for tests)
- Normal power source: 12VDC (host)
- Extreme temperature range: -30°C to +55°C
- Extreme test source voltage: 12VDC ±10% other:

- **EUT configuration**

For all tests:

A generic program test is loaded on EUT, in order to perform in loop following functions:

- Reading / writing SAM card (SAM1 & SAM2)
- Reading / writing μ SD card (MMC)
- RX/TX on Serial port (COM0 & COM2)
- RX/TX between MDB master and slave
- Reading Contactless card

With laptop:

- Continuous Ethernet communication is performed from EUT to Laptop (Ping)

For special Bluetooth tests:

With a special mode of EUT a communication is performed with CMU, a permanent link with followings parameters is tested (worst case):

- Lowest, middle, highest channel
- Max power
- EDR / DH5
- Hopping mode: ON or OFF following test

- **Equipment modifications**

A ferrite (integrated secondary power supply PHIHONG PSM36W-120TW) is set on two wires which provided 12Vdc (MDB slave connector side).

A ferrite type WE 74271222(Two turns) is set on others MDB slave wires



1.4. Test Methodology

Both conducted and radiated testing were performed according to the procedures in ANSI C63.4-2003, FCC Part 15 Subpart B and C.

Radiated testing was performed at an antenna to EUT distance of 10 meters. During testing, all equipment's and cables were moved relative to each other in order to identify the worst case set-up.

1.5. Test facility

Tests have been performed from April 2nd to 12th, 2012.

This test facility has been fully described in a report and accepted by FCC as compliant with the radiated and AC line conducted test site criteria in ANSI C63.4-2003 in a letter dated March 25th, 2008 (registration number 94821). This test facility has also been accredited by COFRAC (French accreditation authority for European Union test lab accreditation organization) according to NF EN ISO/IEC 17025, accreditation number 1-1633 as compliant with test site criteria and competence in 47 CFR Part 15/ANSI C63.4 and EN55022/CISPR22 norms for 89/336/EEC European EMC Directive application. All pertinent data for this test facility remains unchanged.