1.1.   EUT description

UNattended
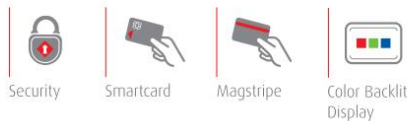
iUP250 & iUR250

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 UNattented contactless readers, the iUP250 UNattended PIN Pad 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.0

The iUP250 unattended PIN Pad and its separate iUR250 HCR deliver Chip and PIN feature with increased assurance. RGB Backlit display offers a true User Interface in addition to a wide range of connectivity options and delivers the ultimate in flexible chassis design and integration. These units, designed for PCI PTS 3.x deliver unrivalled performance and include a stand-by mode to optimize energy efficiency.

Security   Smartcard   Magstripe   Color Backlit Display

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iUP250 & iUR250

UNattended

Security

The Ingenico iUP250 and iUR250 unattended devices are universally designed for PCI PTS 3.x, delivering security-as-standard for consumer and merchant alike. A 32-bit RISC crypto-processor provides a uniquely scaleable and high-performance platform to support a host of new generation security applications, with no impact on transaction speed or reliability.

Performance

Utilizing ARM7 and ARM9 microprocessor technology, EMV L1 and L2 approved, and with a wide range of connectivity options, the robust yet powerful iUP250 and iUR250 combine innovation and performance. They assure a faster, more convenient and more reliable transaction every time while the stand-by feature guarantees optimal energy efficiency when not in use.

Design/Ergonomics

Developed to meet the demands of any unattended card payment transaction in any sector and fully vandalism-proof, these compact modules are designed to integrate easily into any unattended payment machine, both indoor and outdoor in challenging environmental conditions. The iUP250 boasts 2 function keys for user-friendly selection, an ergonomic metallic bezel Pin Pad; both iUP250 & iUR250 enclosed RGB backlit display for a clear User Interface.

Communication

The iUP250 and iUR250 provide a wide range of integrated connectivity features including USB Slave, USB Master, RS232, RS485, MDB, and optional Ethernet & GPRS for maximum versatility and faultless operation. The modules ensure ease-of-integration in the field to existing self-service solutions – for a simple and fast rollout of the very latest in electronic payment features.

Software development

Ingenico delivers incremental revenue today and future proofs the terminal investments of tomorrow. Compatible with all previous Ingenico applications, the iUP250 and iUR250 based on Telium2 technology 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		iUR250	iUP250
Processor	Type	Risc 32-bits ARM7	Risc 32-bits ARM7 Risc 32-bits ARM9
	Speed	50 MIPS	450 MIPS + 50 MIPS
Memory	RAM/Flash	96Kb/512Kb	16MB/128MB
Removable memory	µSD Card		1
Communication mode	GPRS		Option
	Ethernet		●
	Bluetooth		Option
SAM			2
SIM			Option
Card readers	Smart card	●	
	Magstripe	ISO 1/2/3	
	Hybrid	●	
Display	Graphic 128 x 64 pixels		●
	Backlit RGB		●
	Black & white		●
Keyboard	Number of keys		15+2
	Key texture		Metallic
Buzzer		●	●
Connections	RS232		1 or 2
	USB Host		4
	USB Slave	1	1
	MDB Slave		●
	MDB Master		Option
Power supply	External power supply	5V by USB Slave	12V – 3A
	Stand by mode	●	●
Size	WxHxD mm	72x108x140	132x120x45
Weight		700g	620g
Environment	Operating temperature	-20°C to +65°C	-20°C to +65°C
	Storage temperature	-20°C to +65°C	-20°C to +65°C
	Relative humidity, non condensing	90% HR at +55°C	90% HR at +55°C
IP	Ingress protection	IP34	IP65
IK	Shock protection	IK10	IK10
PCI PTS	3.x	●	●

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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:

The system was configured for testing in a typical fashion (as a customer would normally use it).
The equipment IUP250 can be used with several internal option cards:

| COM2 + MDB + Bluetooth | Configuration n°1 – IUP250-01T1998 |
| COM2 + MDB + Bluetooth + GPRS modular approval | Configuration n°2 – IUP250-01T1869 |

The Equipment Under Test will be the configuration n°2 to represent others configurations (Worst case)
IUP250 has to be is integrated in unattended devices. The test configuration is given by the manufacturer

- Internal max frequencies: 400MHz

- **Modular Approval contained:**

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

- **Power supply: 12-30Vdc**

EUT is not sold with any power supply, an AC/DC power supply adapter is used to provide **12VDC (worst case)** during whole tests.(worst case)

- **Input/output:**

- 1 x MDB slave port "DC power input (12VDC – 30VDC)"   - 2 x SAMs slot
- 2 x Serial link (COM0 & COM 2)   - 1 x SIM slot
- 1 x Ethernet line   - 1 x MicroSD slot
- 1 x USB port (Slave)   - 2 x SMA connectors, (GSM & Bluetooth)
- 4 x USB ports (Host)
- 1 x MDB Master (4 wires).
- 1 x 5V output port

- **Cables:**

- 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: 2m
- 5 x USB cables,shielded, (4 x spiraled: 1m & 1x non spiraled: 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
- 1 x Jack cable , unshielded, length: 0.3cm
- 1 x GPRS Antenna type GC300M-011-2500, length: 2m

- **Auxiliaries equipment used during test:**

- 1 x Laptop TOSHIBA SATELLITE   PS141E-04YC   sn : 13594938G
- 1 x AC/DC Power supply adapter   PHIHONG PSM36W-120TW, 100-240VAC / 1.5A / 50-60Hz, output 12VDC / 3A

- **Functions:**

- 1 x SAM card reader
- 1 x Serial link communication (COM0 & COM2)
- 1 x µSD card reader (SAM1 & SAM2)
- 1 x Bluetooth at 2400-2483.5MHz, always ON

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
	☐ None		☐ Temporary
	(only for tests)		
- Normal power source:	12VDC (host)		
- Extreme temperature range:	-30°C to +55°C		
- Extreme test source voltage:	☒ 12VDC ±10%	☐ other:	

- **Configuration n°1:**

A generic program test is loaded on EUT, in order to perform in loop following functions:
- Reading / writing SAM card (SAM1 & SAM2)
- Reading / writing µSD card (MMC)
- RX/TX on Serial port (COM0 & COM2)
- RX/TX between MDB master and slave

With laptop: Continuous Ethernet communication is performed from EUT to Laptop (Ping)

- **Configuration n°2:**

A Bluetooth communication link is performed between CMU 200 and EUT.
EUT program wich performed Bluetooth communication is loaded from a terminal application on laptop, through USB link.

This running mode allowed to monitor the correct communication between EUT and an external device (Laptop in this test report) through USB link.

With Laptop : Continous Ethernet communication is performed from EUT to Laptop (Ping)

- **Configuration n°3:**

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

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.
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 January 31st to February 8th, 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.