OPERATIONAL DESCRIPTION

1.1. EUT description

Satellite Terminals

iST150

Design/ergonomics

Compact, robust and easy-to-use, the iST150 can be installed as a tabletop device or mounted on any vertical surface for maximum versatility in any Point-of-Sale. Offering a wide range of functions, it features a buzzer, four LED indicators for intuitive use and a large graphic color backlit display. Its loading facility enables contactless e-purses as well as other stored value cards to be credited. It allows acquirer, scheme or issuer, to highlight card acceptance at merchant locations.

Performance

The iST150 combines speed, convenience and ease-of-integration. Its 32 bit ARM9 microprocessor and 8 + 16 MB memory ensure the high processing power required for contactless payment – to embed applications and ensure fast payment. A transaction can be carried out in milliseconds by simply passing a card in front of the iST150 unit. Transaction times are significantly reduced and existing terminal investments optimized.

Security

Optimum security is guaranteed through an embedded crypto-processor supporting standard encryption algorithms, and all devices are equipped with a SAMs (Secure Access Modules) reader as standard. 2 SAMs can be accommodated for the acceptance of e-purses and private stored value schemes to maximize overall security from side image angles.

Communications

Equipped with a USB link to speed up the data exchange with host systems such as payment terminals, cash registers or PCs, the iST150 can also be equipped with a RS232 serial link to upgrade non USB-capable terminals.

Software development

Thanks to its advanced software development environment, the iST150 series offers a wide choice of additional applications to increase operational versatility. Applications such as "Add-on-contactless", "PC-to-Telium", "and "External-Access-to-Telium" enable merchants to tailor their solution and interface with diverse systems and devices.

Field Services

To reduce total cost of ownership and enable banks and 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 professional 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		iST 150
Processor	Type	RISC 32-bit ARM 9
	Speed	450 MIPS
Memory	SDRAM + Flash	8 MB + 16 MB
Contactless protocol	ISO 14443 A B	●
Contactless card reading	MasterCard (Mag sripe)	●
	Visa (Mag sripe)	●
	One Smart PayPass	●
	Paywave	●
	Mifare	●
Display	Graphic 128 x 64 pixels	Color RGB backlit display
	Backlit	●
Connections	USB or RS 232	●
Buzzer		●
Power	USB	+5V 400 mA
	RS232	+8 to + 12V 300 mA
	External power supply	Optional (RS232 only)
Size (in mm)	l x W x H	83 x 27 x 124
Weight (in gr)		150
SAM		2
Customization		By sticker
Environment	Operating temperature	+5°C to + 40°C
	Relative humidity, non condensing	85% HR at + 55°C

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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:

- **Equipment under test (EUT):**

E.U.T. : **iST150-00T1428A** Serial number: **10347CL40045131** Power supply interface : 1: 5Vdc 2: 8-12Vdc	
-	-

Highest internal frequency: 96.768 MHz

- **Input/output:**

- 1 x Power supply “Type HDMI” 

- **Auxiliaries used for testing:**

- 1 x Laptop TOSHIBA SATELLITE	PS141E-04YC	(Configuration n°1)	sn : 13594938G
- 1 x AC/DC Power supply adapter (LAPTOP)	TOSHIBA API4AD19	(Configuration n°1)	sn : None
- 1 x AC/DC Power supply adapter	SAGEM AD5632	(Configuration n°2)	sn : None
- 1 x Power supply	TDK-LAMBDA (30V-50A)		

- 2 x Sam Cards
- 1 x Contact Less Card 3M Oberthur Technologies

- **I/O cables used for testing:**

- **Configuration 1**: 1 x USB cable (2m) shielded, Ref: 296116774
- **Configuration 2**: 1 x RS232 cable (2m),Type RJ11 unshielded, Ref: 296120004

1.4. Running Mode

Sequence n°1 :	Sequence n°2:
A reading process are performed on contactless Card COM0 A continuous writing/reading process is performed on SAM Card	Sequence n°1 + serial communication on RX and TX is connected each other in order to performed a continuous communication

Configuration Running mode	1	2
Sequence n°1	x	
Sequence n°2		x

1.5. Equipment modifications

None

1.6. Test Methodology

OS : 8200360833
Test software : TEST CAM0107

1.7. EUT Configuration

Configuration 1 : *Communication access* : - USB
Power supply : - (5Vdc) Provided by Laptop THOSHIBA (Auxilliary Equipment)
Option Cable: - Ref: 296116774

Configuration 2 : *Communication access* : - RJ11
Power supply : - Power through AC/DC power supply type
Option Cable: - Ref: 296120004

Remark :

2 x externals power supplies are used
in this configuration permits to emulate 8-12Vdc power supply source

(1) : Power supply adapter (SAGEM AD5632) is used for Conducted Emission (8Vdc).

(2) : A laboratory power supply (TDK-Lambda 30V-50A) is also used in order to performed following tension from 4.25Vdc to 13.8Vdc (Extreme condition Test, and 12Vdc rating for Radiated emission : Configuration 2)

1.8. 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.

1.9. Test facility

Tests have been performed from September 7th to November 23rd , 2010.

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.