Laboratory Test Report

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Report No.: 11157-00
Date Issued: 14 June 2006

SUBJECT: Proximity Card Reader
Model: PRT-NPRX S/N 000019
Rating: 9.5 – 14 V d.c., 120 mA

REQUESTED BY: Integrated Control Technology
Unit C
6 Ascension Place
Mairangi Bay
Auckland
NEW ZEALAND

INSTRUCTIONS: Test for compliance with FCC 47 Part 15:2005 "Code of Federal Regulations: Title 47 Telecommunication. Part 15 Radio frequency devices".

CONTENTS:

SUMMARY: All test results in this report in relation to the Proximity Card Reader Model PRT-NPRX confirmed that the specimen Complied with the relevant provisions of FCC 47 Part 15:2005 as a Class B digital device and as an intentional radiator.

APPROVED BY:	*TESTED BY:*	*PREPARED BY:*
Manuel Shimasaki	Brian Drumm	Amy McCracken
IANZ Signatory	EMC Compliance Engineer	Admin Assistant

GENERAL

a) As detailed in this report, one specimen of the Proximity Card Reader Model PRT-NPRX was received for testing.

b) The results detailed in this report are based on the specimen, Serial Number 000019, submitted by the manufacturer under Purchase Order Number NANO PROX FCC.

c) The specimen was tested for compliance with Electromagnetic Interference (EMI) in accordance with the relevant sections of CFR 47 Part 15:2005. Parkside Laboratories' Test Firm Registration Number is 96815.

d) The results of the testing from 30 MHz to 1000 MHz under Subpart B-Unintentional Radiators are included in this report while the results of the testing from 100 kHz to 30 MHz under Subpart C-Intentional Radiators are included in the attached EMC Technologies report number 60530.1 of 30 May 2006.

e) All testing was carried out under the following environmental conditions, unless otherwise noted:

Ambient temperature	15 °C to 35 °C
Relative humidity	30 % to 60 %
Atmospheric pressure	86 kPa to 106 kPa.

f) Note: N/R = Not Relevant to design assessed, N/T = Not Tested at manufacturer's request, EUT = Equipment Under Test, DNC = Did Not Comply.

g) The reported expanded uncertainties (U) listed below are based on standard uncertainties multiplied by a coverage factor k = 2, and define an interval $\pm U$ providing a level of confidence of approximately 95 %. The uncertainty calculations have been carried out in accordance with IANZ requirements.

(ii) Radiated EMI Measurement	30 – 1000 MHz	± 4.6 dB

h) For radiated emission measurements, maximum peak disturbance scans were performed over the frequency range of 30 MHz to 1 GHz while varying the products azimuth 0° to 360° and the antenna height from 1 to 4 meters with both horizontal and vertical polarities. Eleven maximum disturbance points were analysed and subjected to a Quasi-Peak analysis for > 1 s at each point. The exact EUT azimuth, antenna height and polarisation and frequency of the maximum disturbance were recorded. All eleven quasi-peak points were manually verified and ambient signal results removed.

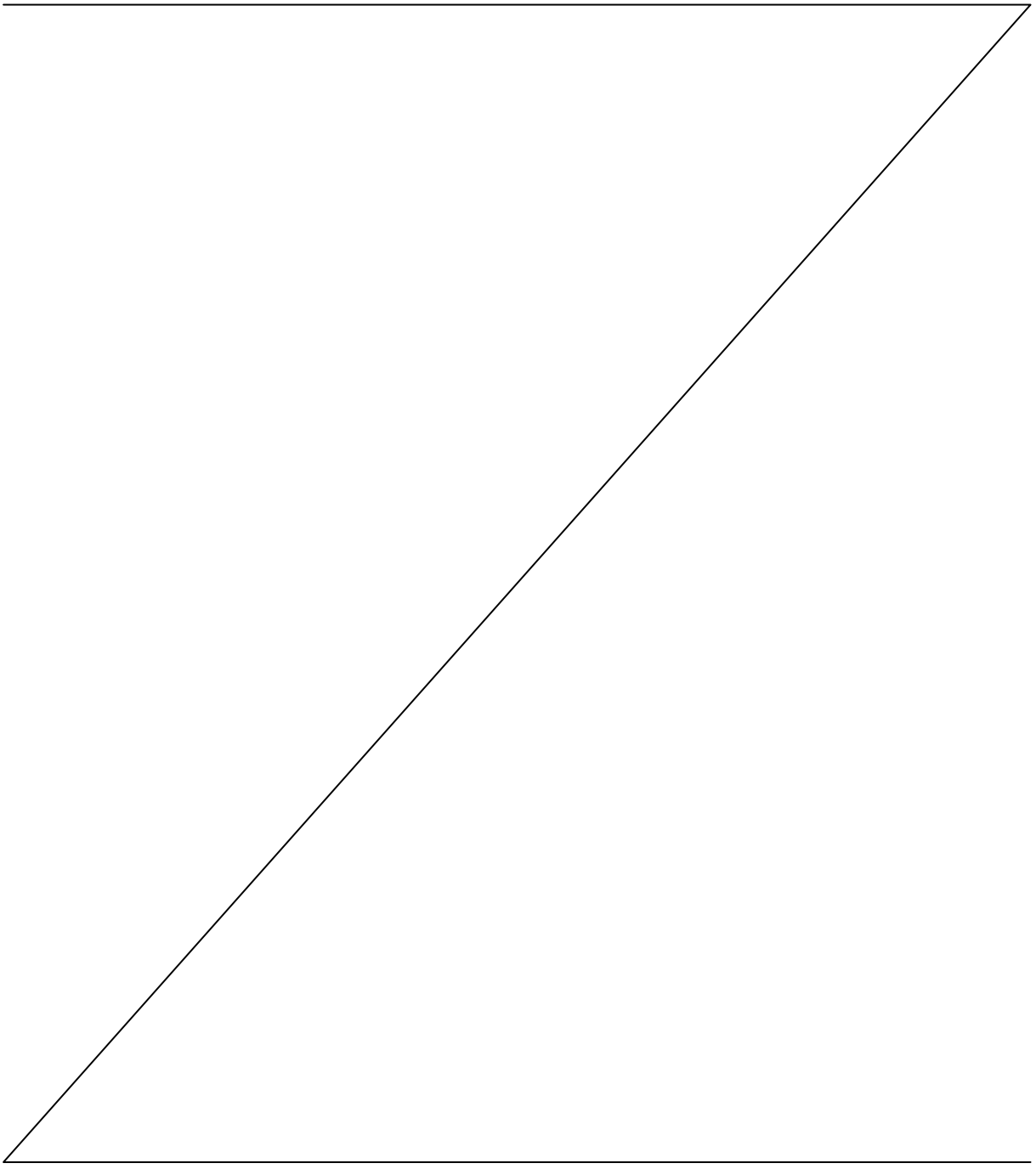
TEST SPECIFICATION

FCC 47 Part 15:2005 "Code of Federal Regulations: Title 47 Telecommunication. Part 15 Radio frequency devices"

This specification was applicable at the time of testing.

DATE OF TEST

Testing was completed on 26 May 2006.



DESCRIPTION

The Integrated Control Technology Proximity Card Reader Model PRT-NPRX was a radio-frequency identification device (RFID) for use in security, building automation and access control. It provided multiple format compatability, high speed data transmission and sabotage protection.

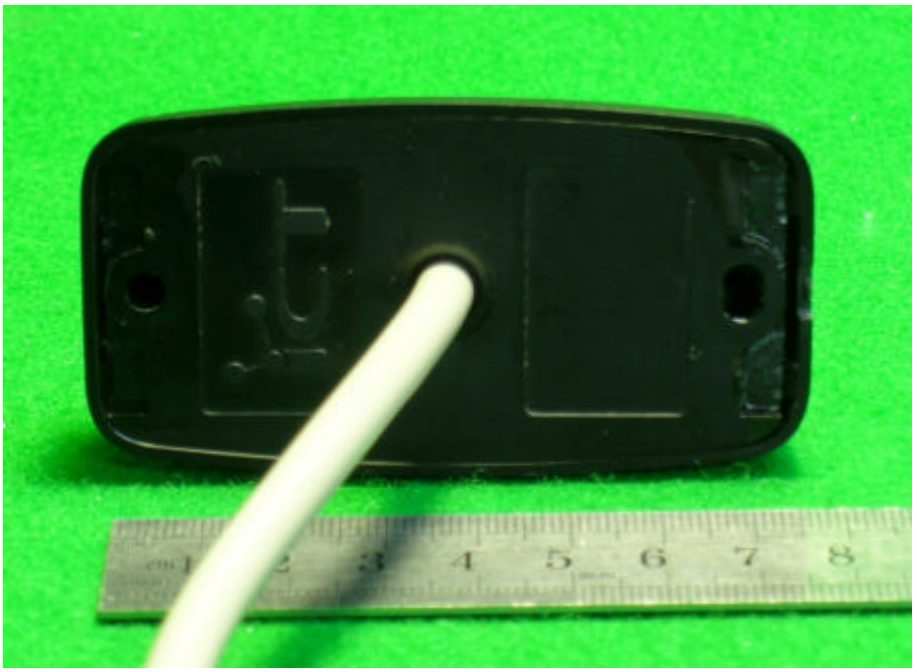
When a suitable card was presented to the Card Reader the information stored on the card was read and appropriate data sent to a host controller.

The highest clock frequency of the Proximity Card Reader Model PRT-NPRX was 16 MHz.

Approximate Dimensions [mm]: H 81 × W 42 × D 11 [mm]

Proximity Card Reader Model PRT-NPRX : Front View

Proximity Card Reader Model PRT-NPRX : Interior View



Proximity Card Reader Model PRT-NPRX : Back View

RESULTS: FCC 47 Part 15:2005 "Code of Federal Regulations: Title 47 Telecommunication. Part 15 Radio frequency devices".

SUBPART A – GENERAL	Applied
Section 15.1 Scope of this part	Applied
Section 15.3 Definitions	Noted
Section 15.5 General conditions of operation	Noted
Section 15.7 Special temporary authority	N/R
Section 15.9 Prohibition against eavesdropping	N/A
Section 15.11 Cross reference	Noted
Section 15.13 Incidental radiators	N/A
Section 15.15 General technical requirements	Noted
Section 15.17 Susceptibility to interference	Noted
Section 15.19 Labelling requirements	Noted
Section 15.21 Information to user	Noted
Section 15.23 Home-built devices	N/R

Section 15.25 Kits N/R

Section 15.27 Special accessories Noted

Section 15.29 Inspection by the Commission Noted

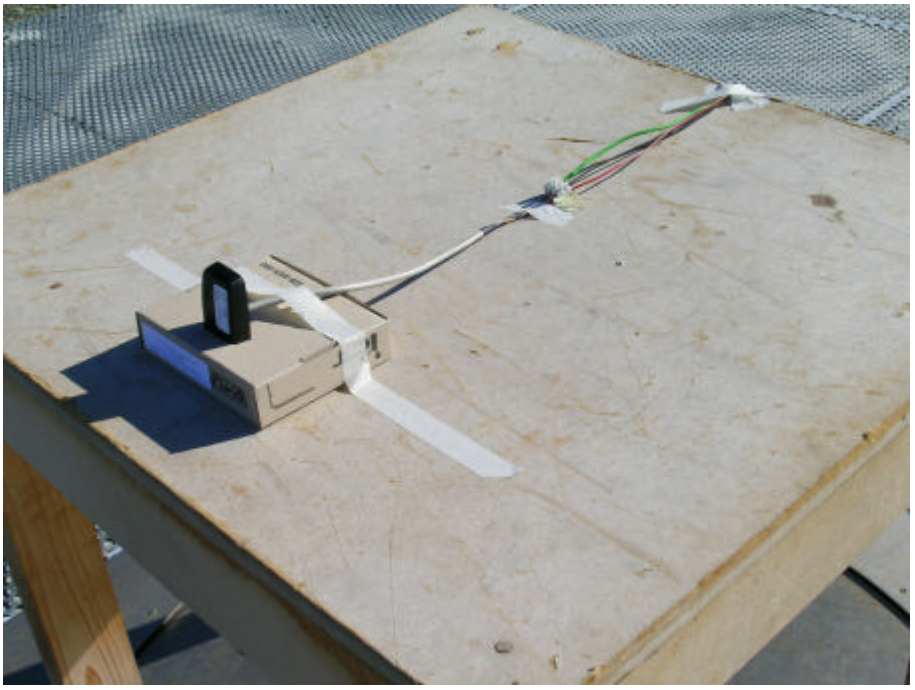
Section 15.31 Measurement standards Applied

Measurements were made on an open field site at a distance of 3m as specified in section 15.109.

Field strength values were maximised by rotation of the EUT.

Leads one meter in length were attached to the EUT.

The EUT was operating in its normal standby mode without direct connection to external devices. External connection was from open collector circuits with d.c. signalling when a card was read.



Proximity Card Reader Model PRT-NPRX : OATS Set-up

Section 15.32 Test procedures for CPU boards and computer power supplies — N/R

Section 15.33 Frequency range of radiated measurements — Applied

Measurements were performed from 100 kHz to 1000 MHz as the frequencies used in the device were 125 kHz as an intentional radiator and 16 MHz as a Class B digital device.

Section 15.35 Measurement detector functions and bandwidths — Applied

Final measurements were made with an average detector between 100 kHz and 490 kHz and with a quasi-peak detector between 490 kHz and 1000 MHz.

Section 15.37 Transition provisions for compliance with the rules — Noted

Section 15.38 Incorporation by reference — N/R

SUBPART B – UNINTENTIONAL RADIATORS — Applied

Section 15.101 Equipment authorization of unintentional radiators — Noted

Section 15.102 CPU boards and power supplies used in personal computers — N/R

Section 15.103 Exempted devices — N/R

Section 15.105 Information to the user — Applied

Section 15.107 Conducted limits — N/R

Section 15.109 Radiated emission limits — Complied

The field strength of radiated emissions did not exceed the permitted values specified in section this section.

Section 15.111 to Section 15.123 — N/R

SUBPART C - INTENTIONAL RADIATORS — Complied

For details of testing under this subpart please refer to EMC Technologies Ltd report number 60530.1 dated 30 May 2006.

SUBPART D – UNLICENSED PERSONAL COMMUNICATIONS SERVICE DEVICES — N/R

SUBPART E – UNLICENSED NATIONAL INFORMATION INFRASTRUCTURE DEVICES — N/R

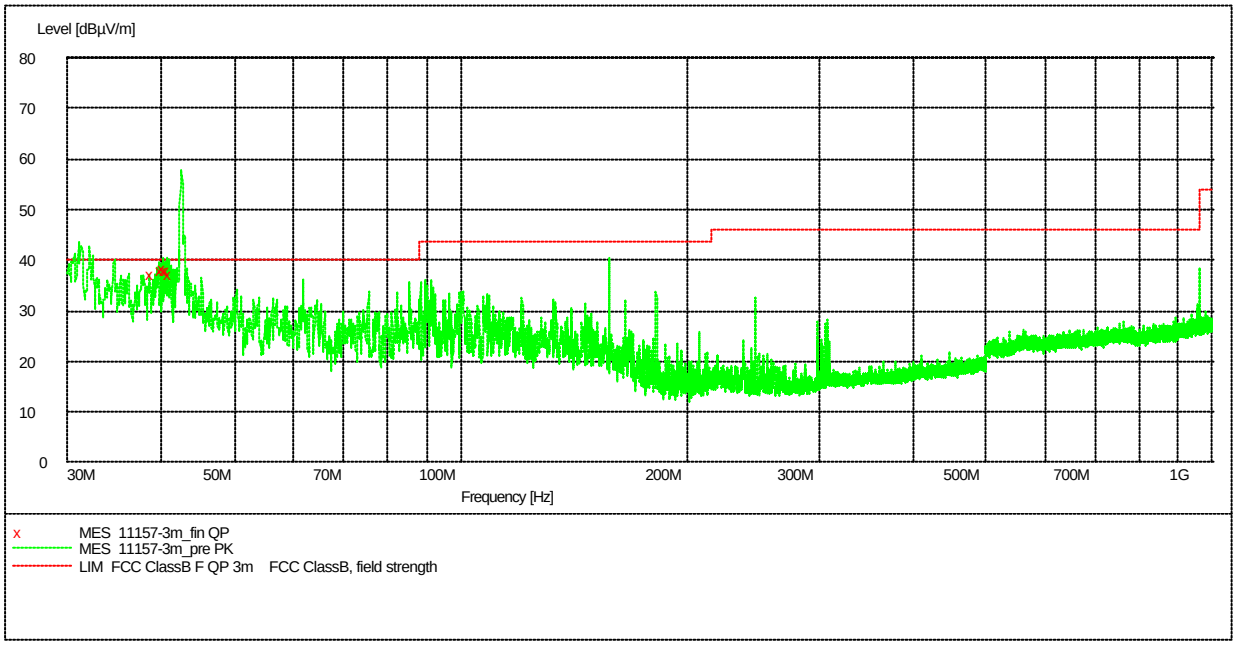
SUBPART F – ULTRA-WIDEBAND OPERATION — N/R

RADIATED EMISSIONS SCAN 30 MHz – 1000 MHz

EUT: Proximity Card Reader Model PRT-NPRX
Manufacturer: Integrated Control Technology
Operating Condition: 12V Battery
Test Site: OATS - Birdlings Flat
Operator: Rob Weir
Test Specification: FCC, Class B
Comment: 3 metre measurement.
Start of Test: 9/05/06 / 12:57:15p.m.

SCAN TABLE: "EN 55022 Field"

Start Frequency	Stop Frequency	Step Width	Detector	Meas. Time	IF Bandw.	Transducer	
30.0 MHz	1.0 GHz	60.0 kHz	MaxPeak	5.0 ms	120 kHz	BILOG OCT 05	SN4156
1.0 GHz	2.8 GHz	500.0 kHz	MaxPeak	5.0 ms	1 MHz	BILOG OCT 05	SN4156



QUASI-PEAK DETECTOR MEASUREMENT RESULT: "11157-3m_fin QP"

Frequency MHz	Level dBµV/m	Limit dBµV/m	Margin dB	Height cm	Azimuth deg	Polarisation
38.890000	37.00	40.0	3.0	100	174	Vertical
40.140000	38.00	40.0	2.0	100	172	Vertical
40.390000	38.20	40.0	1.8	100	165	Vertical
40.640000	38.00	40.0	2.0	100	176	Vertical
40.890000	38.10	40.0	1.9	100	173	Vertical
41.140000	37.00	40.0	3.0	100	173	Vertical

END OF REPORT