

SUPPLEMENTARY TEST REPORT FROM RADIO FREQUENCY INVESTIGATION LTD.

Test Of: Basys Technology Ltd.
418MHz SAT

To: F.C.C. Part 15: 1998
Subpart C. (Intentional Radiators)
Section 15.231

Supplementary Test Report Serial No:
RFI/EMCB1/SUP38788B

This report is supplementary to
RFI Test Report No. RFI/EMCB1/RP38788B

This supplementary Test Report Is Issued Under The Authority Of Brian Watson Technical Director: 	Checked By: 
Tested By: 	Release Version No: PDF01
Issue Date: 29 July 1999	Test Date: 19 July 1999

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1. Client Information

1.1. Applicant Details

Company Name:	Basys Technology Ltd
Address:	Mumby Road Gosport Hampshire PO12 1AF
Contact Name:	Mr S Grant

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2. Equipment Under Test (EUT)

The following information (with the exception of the Date of Receipt) has been supplied by the client:

2.1. Identification Of Equipment Under Test (EUT)

Brand Name:	Basys Technology Ltd
Model Name or Number:	418MHz SAT
Unique Type Identification:	63-20-22
Serial Number:	None stated by client
Country of Manufacture:	UK
FCC ID Number:	Awaiting Certification by the FCC
Date of Receipt:	4 May 1999

2.2. Description Of EUT

The equipment under test was radio based short to long range tagging system for the protection and monitoring of assets and the management of personnel movement.

2.3. Modifications Incorporated In EUT

Two EUT samples were supplied for test purposes. The first device was left unmodified to enable bandwidth and timing measurement tests to be performed. The second device was modified to enable a continuous transmit unmodulated carrier which would enable electric field strength measurements to be performed.

2.4. Additional Information Related To Testing

Power Supply Requirement:	Internal battery supply of 3.0 V
Intended Operating Environment:	Commercial premises
Weight:	0.071 Kg
Dimensions:	60 mm x 107 mm x 25 mm
Interface Ports:	None

2.5. Support Equipment

No support equipment was used to exercise the EUT during testing.

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3. Summary Of Test Results

3.1. Radiated Emissions

Range Of Measurements	Specification Reference	Compliance Status
Electric Field Strength, 30 MHz to 5.0 GHz	Section 15 of C.F.R. 47: 1998 Clause 15.231	Complied

3.2. Location Of Tests

All the measurements described in this report were performed at the premises of Radio Frequency Investigation Ltd., Ewhurst Park, Ramsdell, Basingstoke, Hampshire, RG26 5RQ.

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4. Measurements, Examinations And Derived Results

4.1. General Comments

4.1.1. This section contains test results only.

4.1.2. The measurement uncertainties stated were calculated in accordance with the requirements of UKAS Document NIS 81 with a confidence level of 95%.

4.1.3. This supplementary test report is issued as an addendum to test report RFI/EMCB1/RP38788B.

4.1.4. Additional tests were performed on the 418MHz SAT as requested by the FCC.

4.1.5. Tests for radiated emissions were performed as stated in Section 5.2 of RFI Test Report RFI/EMCB1/RP38788B.

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4.2. Test Results For Radiated Emissions: Continuous Transmit

4.2.1. Electric Field Strength Measurements: Fundamental Frequency

4.2.1.1. The client has stated that the fundamental frequency of the EUT is 418 MHz.

4.2.1.2. Electric field strength measurements were performed with the EUT operated in both high and low power modes as stated in Section 5.2 of RFI Test Report RFI/EMCB1/RP38788B.

4.2.1.3. For high power operation, radiated emission limits stated in section 15.231 (b) were followed: Field strength limit for the fundamental is 3750 $\mu\text{V/m}$ at 260 MHz rising linearly to 12500 $\mu\text{V/m}$ at 470 MHz. Therefore this gives a limit at 418 MHz of 10351.4 $\mu\text{V/m}$. This level equates to 80.3 dB $\mu\text{V/m}$. This limit is specified using an Average detector at a test distance of 3m.

4.2.1.4. For low power operation, radiated emission limits stated in section 15.231 (e) were followed: Field strength limit for the fundamental is 1500 $\mu\text{V/m}$ at 260 MHz rising linearly to 5000 $\mu\text{V/m}$ at 470 MHz. Therefore this gives a limit at 418 MHz of 4133.4 $\mu\text{V/m}$. This level equates to 72.3 dB $\mu\text{V/m}$. This limit is specified using an Average detector at a test distance of 3m.

4.2.1.5. The following table lists frequencies at which emissions were measured using a Peak detector (results incorporate antenna factors and cable losses).

High Power

Frequency (MHz)	Ant. Pol.	Average Level (dB $\mu\text{V/m}$)	Average Limit (dB $\mu\text{V/m}$)	Margin (dB)	Result
417.994	Vert	73.8	80.3	6.5	Complied

Frequency (MHz)	Ant. Pol.	Peak Level (dB $\mu\text{V/m}$)	Peak Limit (dB $\mu\text{V/m}$)	Margin (dB)	Result
417.994	Vert	74.3	80.3	6.0	Complied

Low Power

Frequency (MHz)	Ant. Pol.	Average Level (dB $\mu\text{V/m}$)	Average Limit (dB $\mu\text{V/m}$)	Margin (dB)	Result
418.007	Vert	71.2	72.3	1.1	Complied

Frequency (MHz)	Ant. Pol.	Peak Level (dB $\mu\text{V/m}$)	Peak Limit (dB $\mu\text{V/m}$)	Margin (dB)	Result
418.007	Vert	71.7	72.3	0.6	Complied

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Appendix 1. Photographs of EUT

This appendix contains the following photographs:

Photo Reference Number	Title
PHT\38788ETF01\001	Front, bottom and left hand side view of EUT.
PHT\38788ETF01\002	Rear, top and right hand side view of EUT.
PHT\38788ETF01\003	View of MPT label.
PHT\38788ETF01\004	View of Identity label.
PHT\38788ETF01\005	Overall internal view of EUT.
PHT\38788ETF01\006	Internal view of EUT displaying bottom of case.
PHT\38788ETF01\007	Top view of PCB.
PHT\38788ETF01\008	Bottom view of PCB.

These pages are not included in the total number of pages for this report.

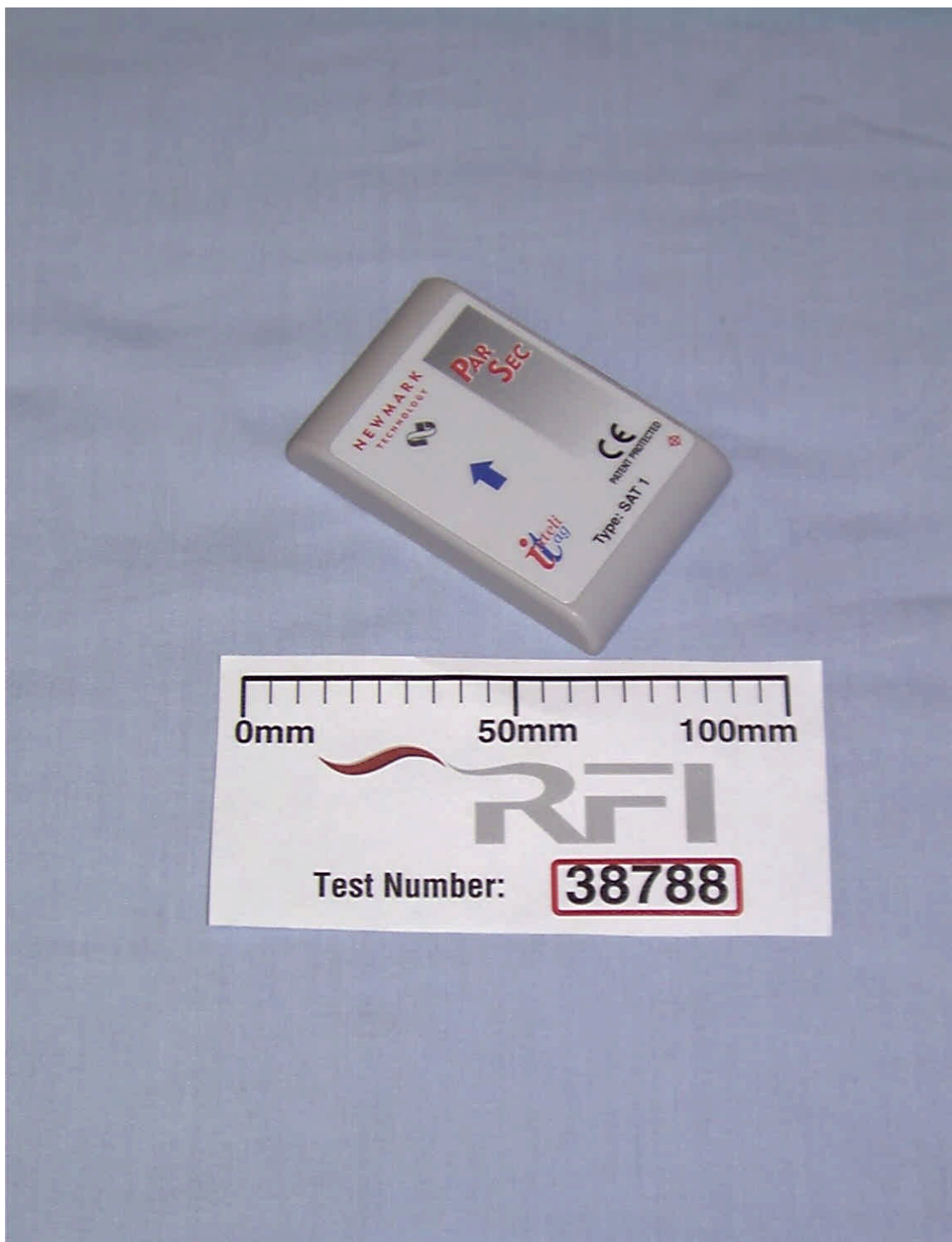
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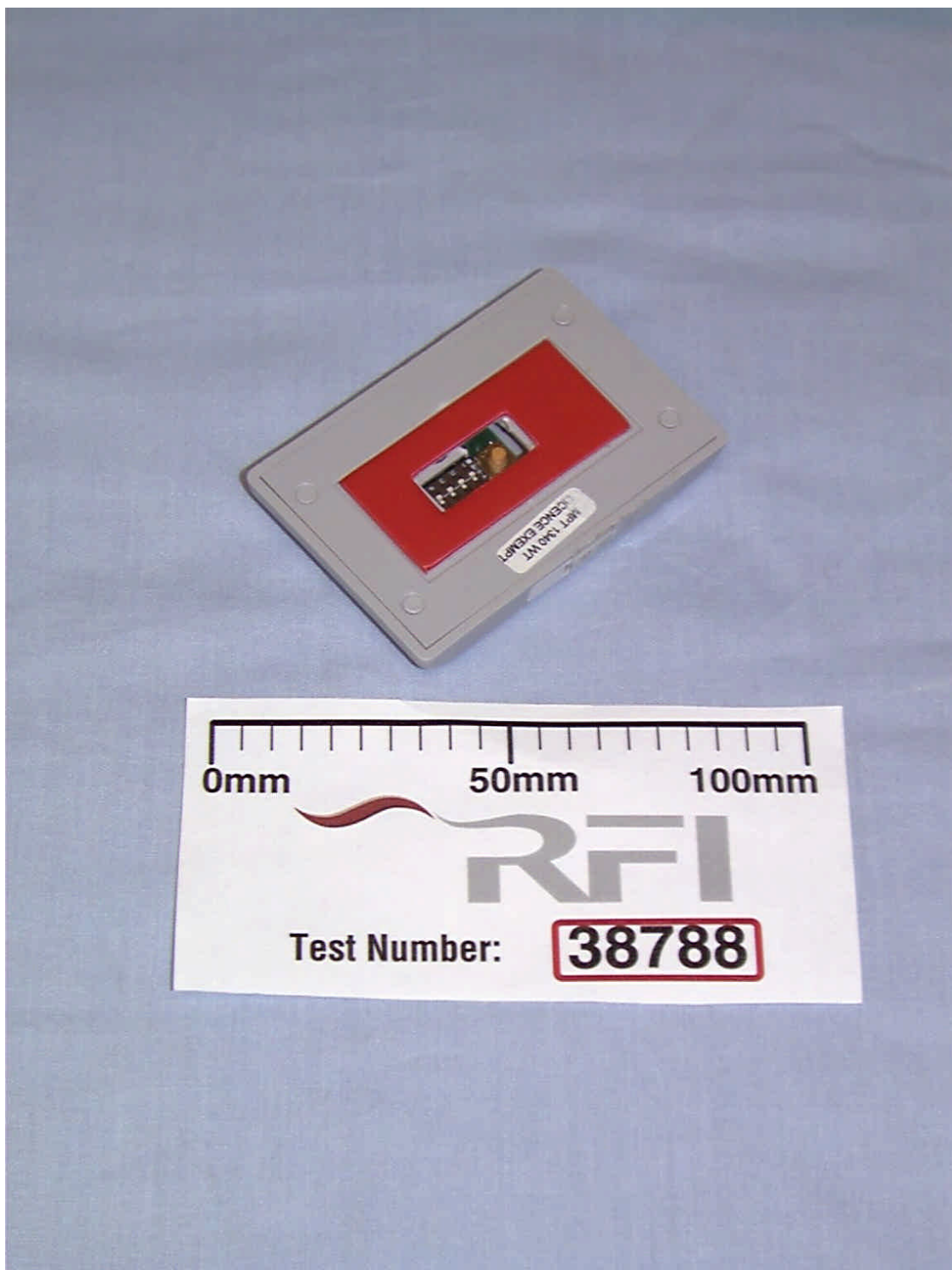
PHT\38788ETF01\001 Front, bottom and left hand side view of EUT.



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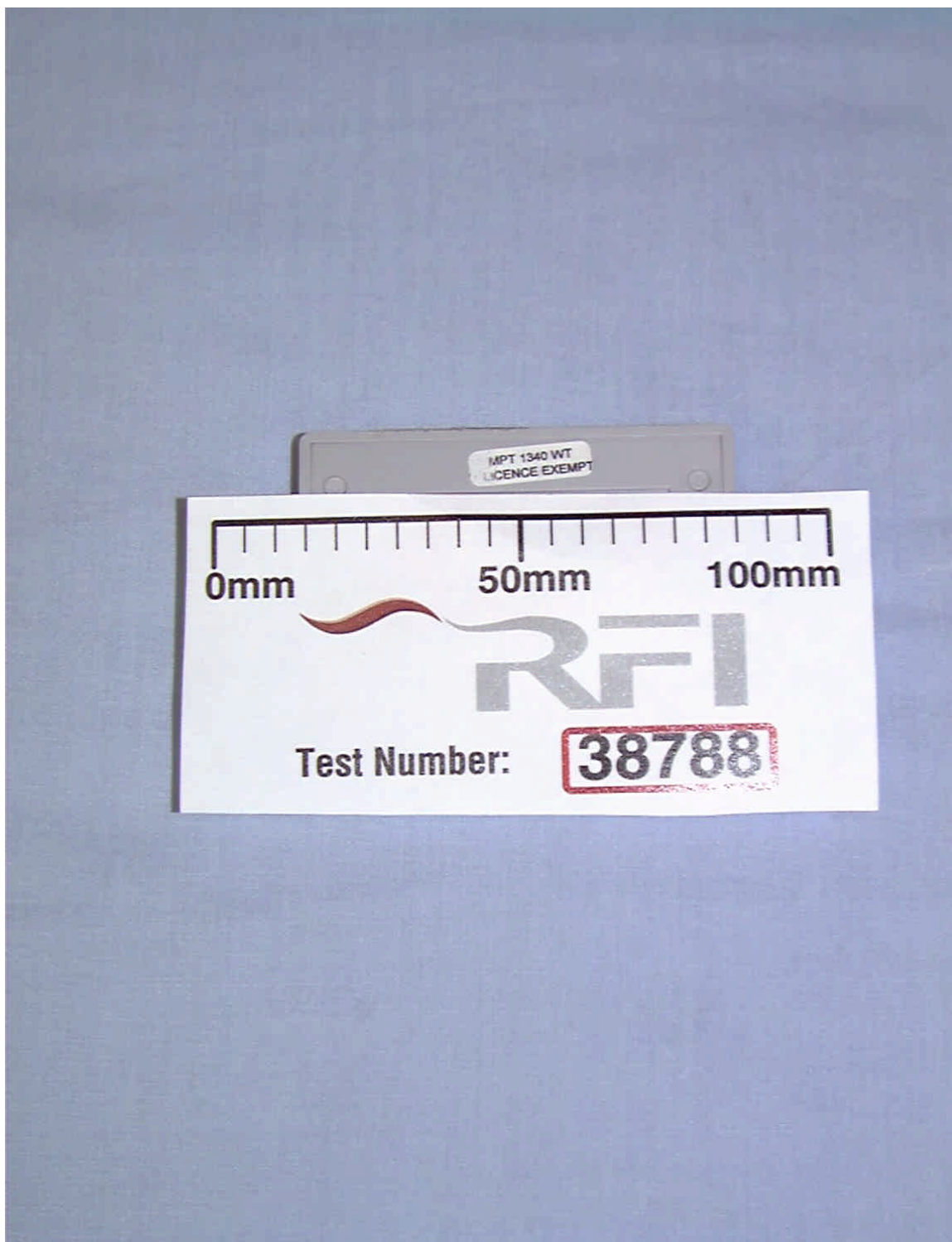
PHT\38788ETF01\002 Rear, top and right hand side view of EUT.



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PHT\38788ETF01\003 View of MPT label.



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PHT\38788ETF01\004 View of Identity label.



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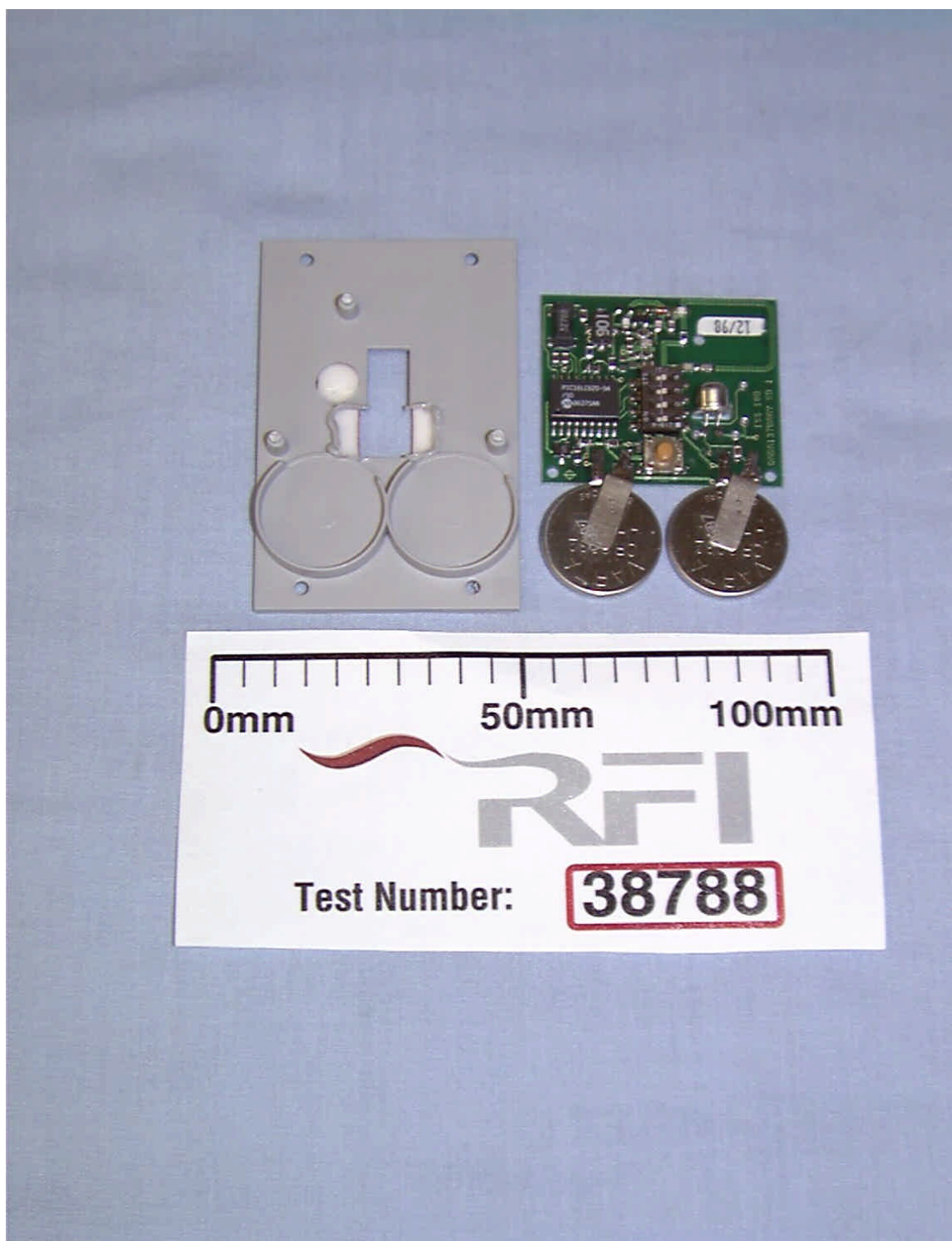
PHT\38788ETF01\005 Overall internal view of EUT.



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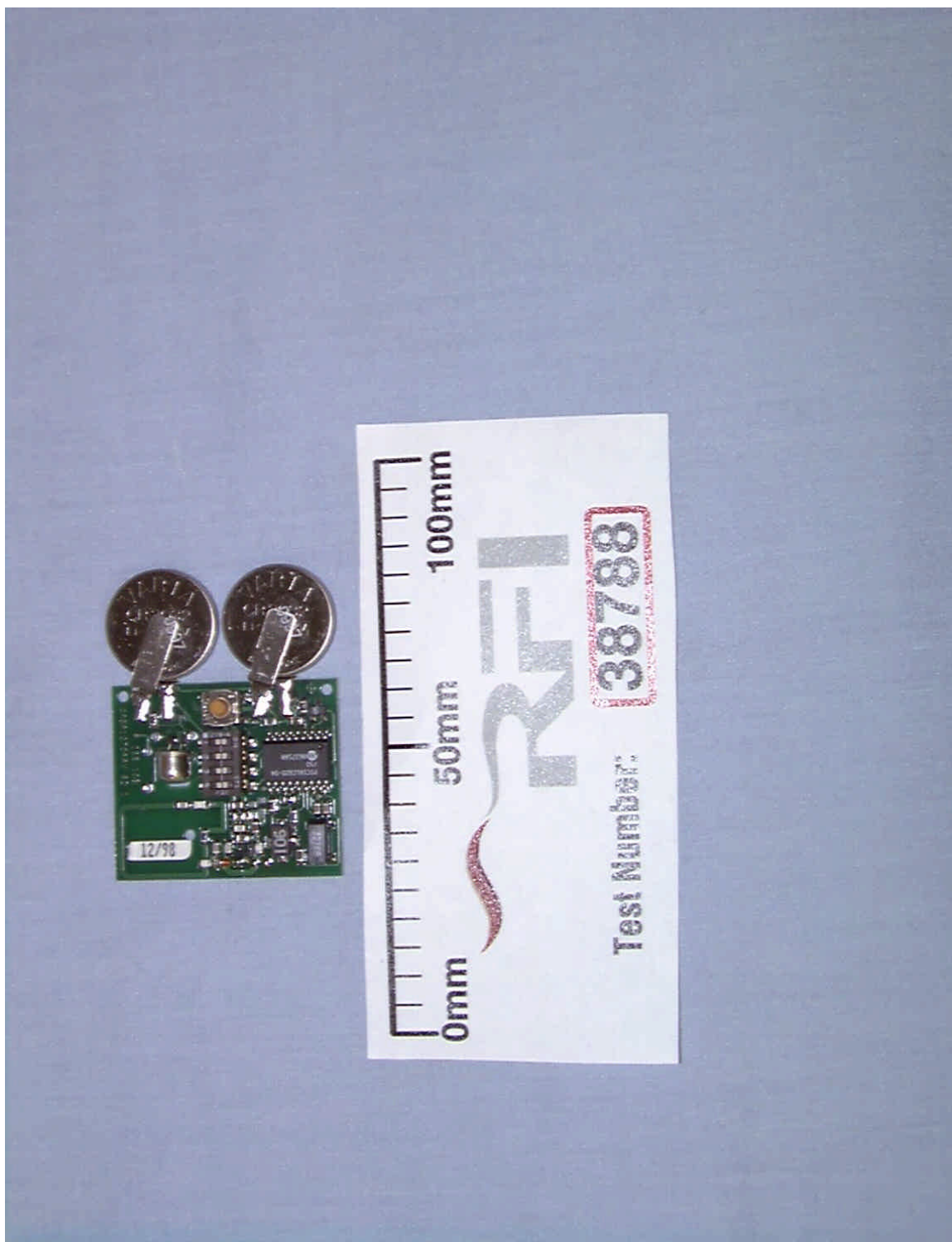
PHT\38788ETF01\006 Internal view of EUT displaying bottom of case.



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PHT\38788ETF01\007 Top view of PCB.



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PHT\38788ETF01\008 Bottom view of PCB.

