



EMC Test Data

Client:	Berntsen International	Job Number:	J87669
Product:	Truffle	T-Log Number:	T87893
		Account Manager:	Christine Krebill
Contact:	Steven Hungate		-
Emissions Standard(s):	FCC 15.247 MPE	Class:	-
Immunity Standard(s):	-	Environment:	-

EMC Test Data

For The

Berntsen International

Product

Truffle

Date of Last Test: 6/5/2012

Client:	Berntsen International	Job Number:	J87669
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Standard:	FCC 15.247 MPE	Class:	N/A

Maximum Permissible Exposure

Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

Date of Test: 6/5/2012

Test Engineer: Mark Hill

General Test Configuration

Calculation uses the free space transmission formula:

$$S = (PG)/(4 \pi d^2)$$

Where: S is power density (W/m^2), P is output power (W), G is antenna gain relative to isotropic, d is separation distance from the transmitting antenna (m).

Summary of Results

Device complies with Power Density requirements at 20cm separation:	Yes
Power Density (mW/cm^2) @ 20cm:	0.537

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

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Use: General
 Antenna: 6dBi (RFID) and -2.83dBi (Bluetooth)

902-928 MHz RFID Radio

Freq. MHz	EUT Power		Cable Loss dB	Ant Gain dBi	Power at Ant dBm	EIRP mW	Power Density (S) at 20 cm mW/cm ²	MPE Limit at 20 cm mW/cm ²
	dBm	mW*						
915	28.3	671.4	0	6	28.3	2673.01	0.532	0.610

For the cases where S > the MPE Limit

Freq. MHz	Power Density at 20 cm mW/cm ²	MPE Limit at 20 cm mW/cm ²	Distance where S <= MPE Limit cm
915	0.532	0.610	18.7

Bluetooth Radio

Freq. MHz	EUT Power		Cable Loss dB	Ant Gain dBi	Power at Ant dBm	EIRP mW	Power Density (S) at 20 cm mW/cm ²	MPE Limit at 20 cm mW/cm ²
	dBm	mW*						
2440	10.1	10.3	0	-2.83	10.1	5.37	0.001	1.000

For the cases where S > the MPE Limit

Freq. MHz	S @ 20 cm mW/cm ²	MPE Limit mW/cm ²	Distance where S <= MPE Limit
2440	0.001	1.000	0.7cm

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Combination of RFID + BT operation

Band	Mode	Output Power		Antenna gain (Max)	EIRP		Channels Available	Channels Used	Total EIRP	
		Peak	Average		dBm	W			W	dBm
902-928	RFID	28.3	-	6.0	34.3	2.692	1	1	2.692	34.30
2402-2480	BT	10.1	-	-2.8	7.3	0.005	1	1	0.005	7.30
Totals:								2	2.697	34.31

Total EIRP compared to the RFID limit (worse case)

Freq. MHz	EUT Power		Cable Loss	Ant Gain	Power at Ant	EIRP	Power Density (S)	MPE Limit
	dBm	mW*	dB	dBi	dBm	mW	at 20 cm mW/cm ²	at 20 cm mW/cm ²
915						2696.90	0.537	0.610

Freq. MHz	Power Density at 20 cm	MPE Limit at 20 cm	Distance where S <= MPE Limit
	mW/cm ²	mW/cm ²	cm
915	0.537	0.610	18.8

The total power density complies with the worse case limit at a distance less than 20cm.