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Produkte
Products

Prüfbericht - Nr.: *Test Report No.:*	**14020770 001**	**Seite 1 von 13** *Page 1 of 13*

Auftraggeber: *Client:*	**Latitude Limited** **11/F, Hoi Hung Industrial Building,** **25-27 Lam Tin St.,** **Kwai Chung,** **Hong Kong**		
Gegenstand der Prüfung: *Test item:*	**Low Power Device – 2.4GHz Chest Strap**		
Bezeichnung: *Identification:*	**TD00200, ADP3009C**	**Serien-Nr.:** *Serial No.*	**Engineering sample**
Wareneingangs-Nr.: *Receipt No.:*	**090206001– 004**	**Eingangsdatum:** *Date of receipt:*	**06.02.2009**
Prüfort: *Testing location:*	**Hong Kong Productivity Council** HKPC Building, 78 Tat Chee Avenue, Kowloon, Hong Kong		
Prüfgrundlage: *Test specification:*	**FCC Part 15, Subpart C** **IC RSS-GEN** **IC RSS-210**		
Prüfergebnis: *Test Result:*	**Der Prüfgegenstand entspricht oben genannter Prüfgrundlage(n).** *The test item passed the test specification(s).*		
Prüflaboratorium: *Testing Laboratory:*	**TÜV Rheinland Hong Kong Ltd.** 9-10/F., Emperor International Square, 7 Wang Tai Road, Kowloon Bay, Hong Kong		

geprüft / *tested by:*

03.03.2009	Derek Leung Project Manager	
Datum *Date*	**Name/Stellung** *Name/Position*	**Unterschrift** *Signature*

kontrolliert / *reviewed by:*

03.03.2009	Thomas Berns Manager	
Datum *Date*	**Name/Stellung** *Name/Position*	**Unterschrift** *Signature*

Sonstiges / *Other Aspects:* **FCCID: WM4571-572**
IC: 8194A-571572

Abkürzungen:	*P(ass)*	= *entspricht Prüfgrundlage*	*Abbreviations:*	*P(ass)*	= *passed*
	F(ail)	= *entspricht nicht Prüfgrundlage*		*F(ail)*	= *failed*
	N/A	= *nicht anwendbar*		*N/A*	= *not applicable*
	N/T	= *nicht getestet*		*N/T*	= *not tested*

Test Summary and corelation between FCC and IC references:

Measurement	FCC Reference	IC Reference	Result
Radiated Emission of Carrier Frequency Test	§ 15.249(a)	RSS-210 Issue 7 – A2.9	Pass
Spurious Radiated Emissions Test	§ 15.249(d)	RSS-210 Issue 7 – 2.6	Pass
Occupied Bandwidth	-	RSS-Gen Issue 2– 4.6.1	Pass

Content

List of Test and Measurement Instruments

Kind of Equipment	Manufacturer	Model	Serial Number	Calibration Due Date
Test Receiver	Rohde & Schwarz	ESU26	100050	6 Aug 2009
Biconical Antenna	Rohde & Schwarz	HK116	841489/015	8 Mar 2009
Log-periodic Antenna	Rohde & Schwarz	HL223	841516/017	28 Feb 2009
Active Loop Antenna	EMCO	6502	9107-2651	20 Dec 2009
Horn Antenna	EMCO	3115	9002-3347	27 Feb 2010

General Product Information

Product Function and Intended Use

Ratings and System Details

FCCID	:	WM4571−572
IC	:	8194A−571572
Operating Frequency	:	2440MHz
No. of RF channel	:	1 channel
Power supply	:	CR2032 Lithium Button Cell x 1. Nominal volt. 3.0 V
Antenna	:	Build-in antenna
Port(s)	:	Nil

Operation Descriptions

The equipment under test (EUT) is a chest strap transmitter (model: TD00200) of the heart rate monitor system consists of a watch receiver. The chest strap transmitter sensing the human body's heart beat rate and transmits the signal of 2440MHz to the watch receiver, and the EUT ceases to transmit when without touching the human body for more than 1 min. The transmit signal duration is about 100μs and the separation between two transmission is 1.19 seconds.

Client declared that TD00200 and ADP3009C are the identical product and just different model numbers for different brand names as follows:

TD00200 (Brand name: Latitude)

ADP3009C (Brand name: Adidas)

Test Set-up and Operation Mode

Principle of Configuration Selection

Emission: The test was performed under test mode to obtain the maximum emissions.

Test Operation and Test Software

Test mode by shorting a pad on the PCB was used to enable the continuous transmission on the EUT for the tests in this report.

Special Accessories and Auxiliary Equipment

The EUT was tested together with the following additional accessory:

- none

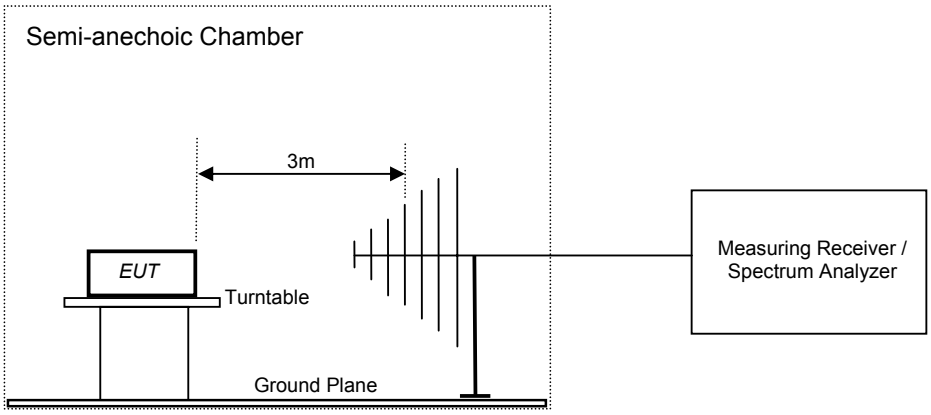
Countermeasures to achieve EMC Compliance

- none

Test Methodology

Radiated Emission Test

The radiated emission measurement was performed according to the procedures in ANSI C63.4-2003. The equipment under test (EUT) was placed at the middle of the 80 cm high turntable, and the EUT is 3 or 10 meters far from the measuring antenna. The turntable was rotated 360° for obtaining the maximum emission. The height of the measuring antennas was scanned between 1m and 4m, and the antenna rotated to repeat the measurements for both the horizontal and vertical antenna polarizations. Repeat the measurement steps until the maximum emissions were obtained. The measurement above 1000MHz was performed by horn antenna and the measurement below 30MHz was performed by loop antenna.



Test Results

Radiated Emission of Carrier Frequency FCC§15.249 and RSS-210 Issue 7– A2.9

Result : Pass

Test Specification	:	FCC §15.249 and RSS-210 Issue 7 – A2.9
Test Method	:	ANSI C63.4-2003
Measurement Location	:	Semi Anechoic Chamber
Supply Voltage	:	Battery operated, 3.0V DC
Measurement Bandwidth	:	1MHz
Detector	:	Peak
Measuring distance	:	3m
Mode of operation	:	Transmitting

Test Result:

Fundamental Frequency (MHz)	Antenna Polarization	Field strength measured (dBµV/m)	Limit (dBµV/m)	Margin (dB)
2440.00	Horizontal	92.70	93.98	1.28
2440.00	Vertical	74.90	93.98	19.08

Limit for Radiated Emission under FCC §15.249:

Fundamental Frequency (MHz)	Field strength, Fundamental (mV/m) at 3m	Field strength, Fundamental (dBµV/m) at 3m
2400 – 2483.5	50.0	93.98

Radiated Spurious Emission FCC§15.249 and RSS-210 Issue 7– 2.6

Result : Pass

Test Specification	:	FCC §15.209, §15.249 and RSS-210 Issue 7 – 2.6
Test Method	:	ANSI C63.4-2003
Measurement Location	:	Semi Anechoic Chamber
Detector	:	QP for frequency below 1 GHz, Average for frequency above 1 GHz
Supply Voltage	:	Battery operated, 3.0V DC
Measuring frequency range	:	30kHz –25GHz (lowest internal oscillator frequency: 32.768kHz)
Measuring distance	:	10m for measurement <30MHz, 3m for measurement >30MHz.
Mode of EUT	:	Transmitting
Requirement	:	Emissions radiated outside of the specified frequency bands, except for the harmonics, shall be attenuated by at least 50dB below the level of the fundamental or to the general radiated emission limits in §15.209, whichever is the lesser attenuation.

Test Result:

Fundamental Frequency (MHz)	Spurious Emission (MHz)	Antenna Polarization	Field Strength (dBµV/m)	Limit (dBµV/m)	Margin (dB)
2440.00	4880.28	Vertical	46.8	54.0	-7.2
	7320.43	Vertical	40.6	54.0	-13.4
	9760.57	Vertical	42.9	54.0	-11.1
	12200.72	Vertical	45.9	54.0	-8.1
	14640.84	Vertical	44.3	54.0	-9.7
	17080.98	Vertical	44.3	54.0	-9.7
	19521.12	Vertical	51.0	54.0	-3.0
	21961.26	Vertical	50.1	54.0	-3.9
	24401.40	Vertical	52.4	54.0	-1.6
	4880.00	Horizontal	41.1	54.0	-12.9
	7320.00	Horizontal	41.0	54.0	-13.0
	9760.00	Horizontal	43.4	54.0	-10.6
	12200.00	Horizontal	45.2	54.0	-8.8
	14640.00	Horizontal	43.9	54.0	-10.1
	17080.00	Horizontal	43.5	54.0	-10.5
	19520.00	Horizontal	50.9	54.0	-3.1
	21960.00	Horizontal	51.1	54.0	-2.9
	24400.00	Horizontal	52.9	54.0	-1.1

All emissions in the table are the harmonic frequencies of the fundamental signal.

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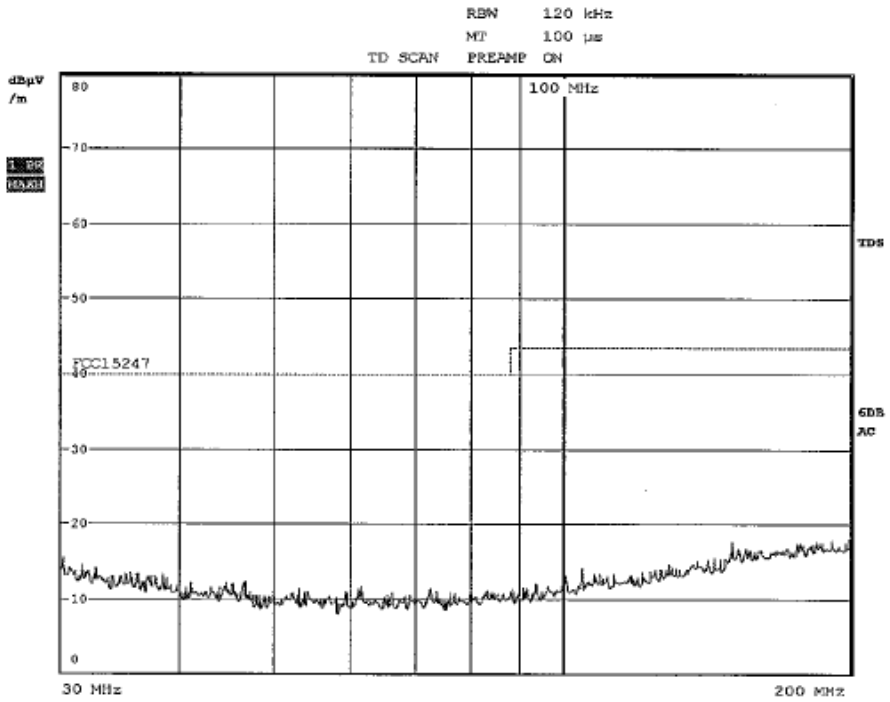
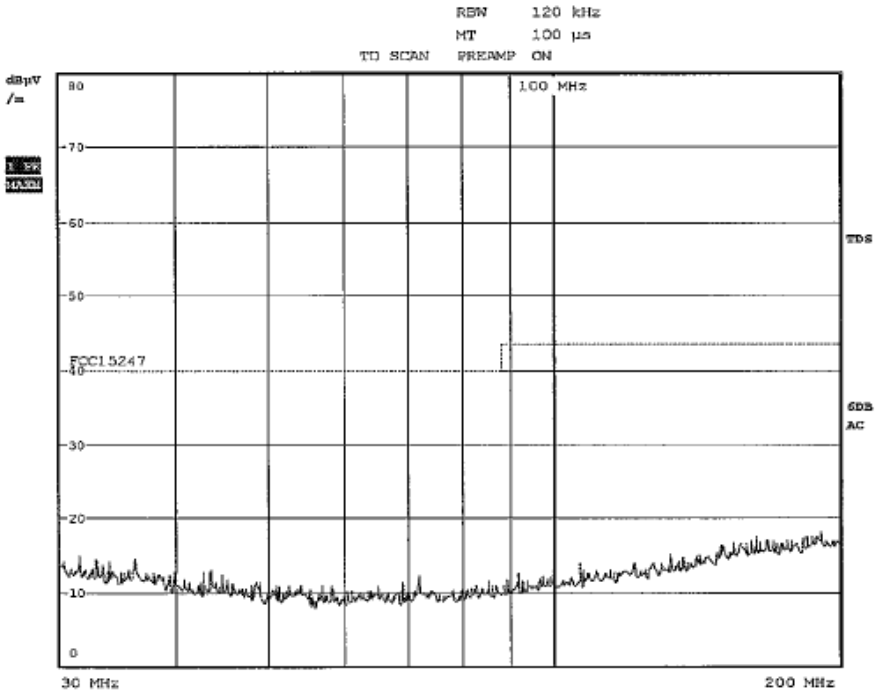
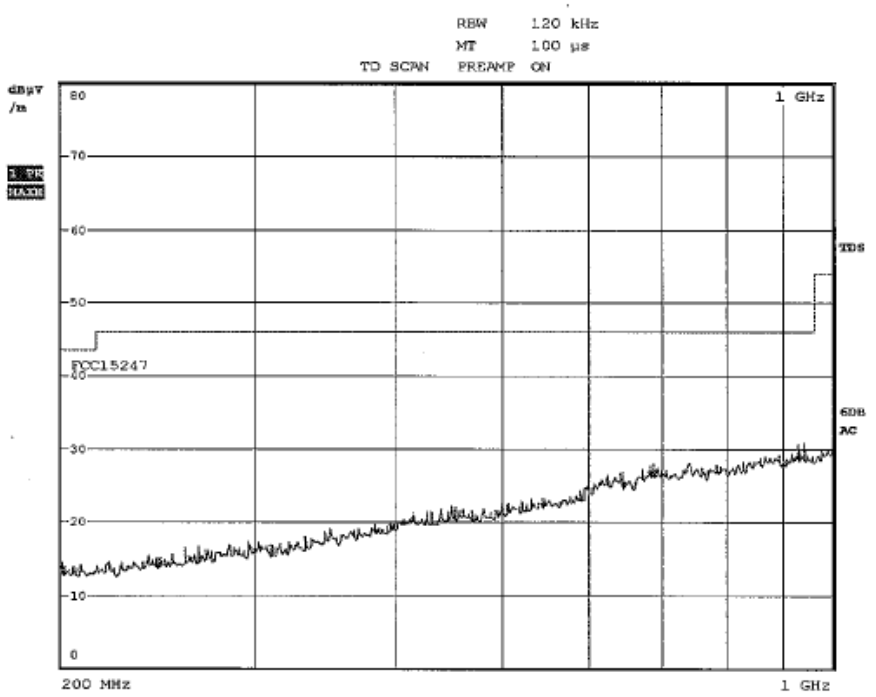
Result:



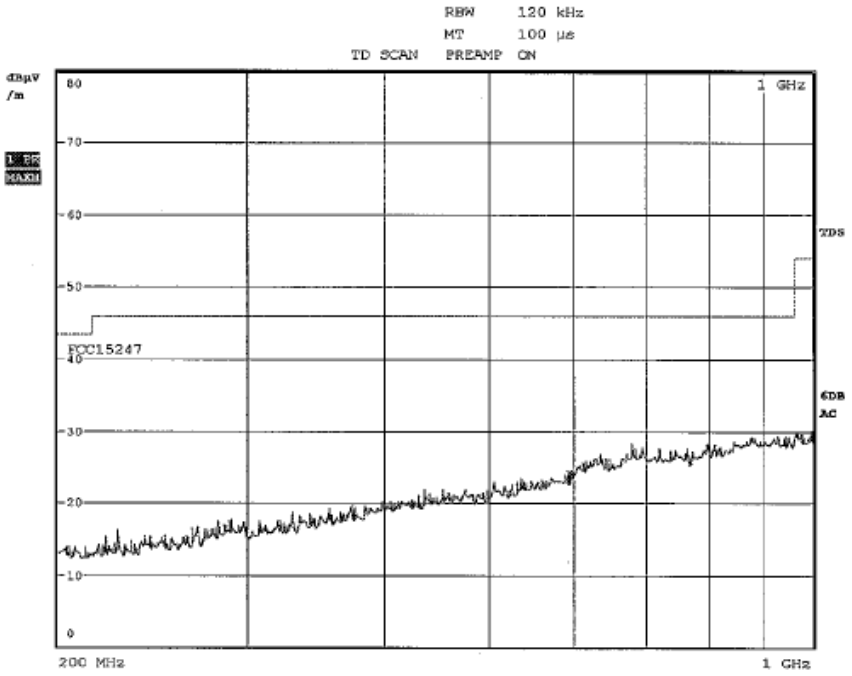
Horizontal Antenna Polarisation, Frequency range: 30MHz – 200MHz



Vertical Antenna Polarisation, Frequency range: 30MHz – 200MHz



Horizontal Antenna Polarisation, Frequency range: 200MHz- 1000MHz



Horizontal Antenna Polarisation, Frequency range: 200MHz- 1000MHz

Limit of Radiated Emission for §15.209 and RSS-210 table 2:

Frequency of Emission (MHz)	Field Strength (µV/m)	Field Strength (dBµV/m)	Measurement Distance (m)
0.009-0.490	2400/F(kHz)	-	300
0.490-1.705	24000/F(kHz)	-	30
1.705-30	30	29.5*	30
30-88	100	40.0	3
88-216	150	43.5	3
216-960	200	46.0	3
Above 960	500	54.0	3

Remark: *The limit shows in the table above of frequency range 1.705MHz – 30MHz corresponds to (29.5 + 9.5) = 39.0dBµV/m at 10 meters measurement distance.

The emission limits shows in the table are based on measurements employing a CISPR quasi-peak detector and above 1000 MHz are based on the measurements employing an average detector.

Occupied Bandwidth RSS-Gen Issue 2 – 4.6.1

Result : Pass

Test Specification	:	RSS-Gen Issue 2 – 4.6.1
Test Method	:	ANSI C63.4-2003
Detector	:	Peak
Supply Voltage	:	Battery operated, 3.0V DC
Mode of EUT	:	Transmitting
Requirement	:	When an occupied bandwidth value is not specified in the applicable RSS, the transmitted signal bandwidth to be reported is to be its 99% emission bandwidth, as calculated or measured.
Test Result	:	980kHz

Test Result Plotting: