TEST REPORT

FCC ID: Base: **PBWDT19R42**
Handset: **PBWDT19R42H**

IC: **3842A-B209**
Model: B209, B209H

Equipment Under Test: **1.9 GHz DECT Telephone (UPCS / LE-PCS Device)**

EUT S/N:

TS060413028	Conducted measurement
TS060413003	Radiated measurement
TS060413013	Spare for Radiated measurement
TS060413008	Odd-channel Threshold test
TS060413029	Even-channel Threshold test
TS060413002	SAR measurement
TS060413015	SAR measurement

In Accordance With: **FCC Part 15, Subparts B, C & D**
IC RSS-213, RSS-Gen, & ICES-003
For UPCS / LE-PCS Isochronous Device
Base & Handset: **1921.536 – 1928.448 MHz**

ANSI C63.17 – 1998 (or 2005 Draft where applicable)

Tested By: **Bill / Ronnie**

Reviewed By: **Kevin Yau**

Date: **December 8, 2006**

1 CHANNEL FREQUENCIES

Clause: **15.303 (d) & (g) / 1**

Requirement: Within 1920 – 1930 MHz band for isochronous devices

U-/LE-PCS CHANNEL	FREQUENCY (MHz)
Band Edge	1930.000
1 (High)	1928.448
2	1926.720
3 (Mid)	1924.992
4	1923.264
5 (Low)	1921.536
Band Edge	1920.000

Test Condition: Refer to Test Mode Procedure.

2 ANTENNA REQUIREMENT

Clause: **15.317 (15.203) / 4.1 (e), RSS-Gen 7.1.4**

Requirement: No antenna other than that furnished by the responsible party shall be used with the device

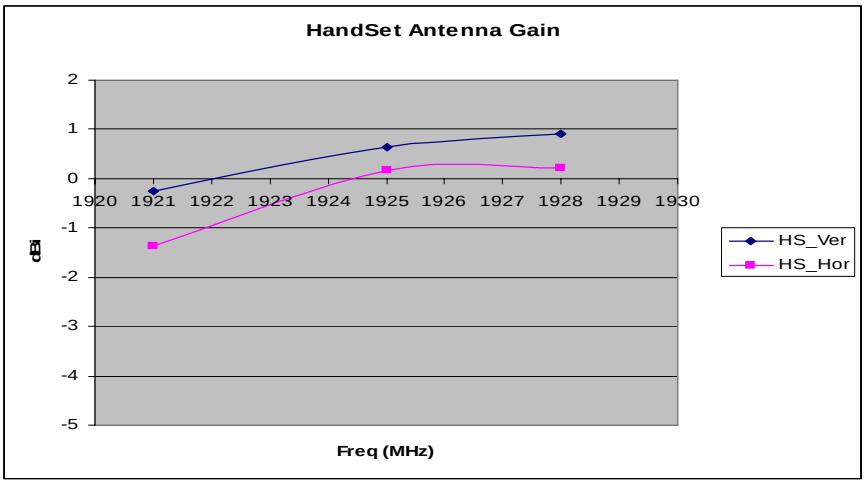
Observation: Base and Handset have each a pre-formed wire antenna permanently attached on the PCB; it is not user replaceable. Base has an additional internal antenna for receive diversity configuration. There is no external antenna or connector provided on the base or handset for the user to use antenna other than that furnished originally.

Spec of Antenna: Base antenna Tx gain across the band = -0.62 ~ -3.79 dBi (0.87 ~ 0.42 numeric)
Handset antenna Tx gain across band = 0.92 ~ -1.37 dBi (1.24 ~ 0.73 numeric)

Result: As antenna gain < 3 dBi, no correction factor necessary to be applied to subsequent radiation measurement readings.

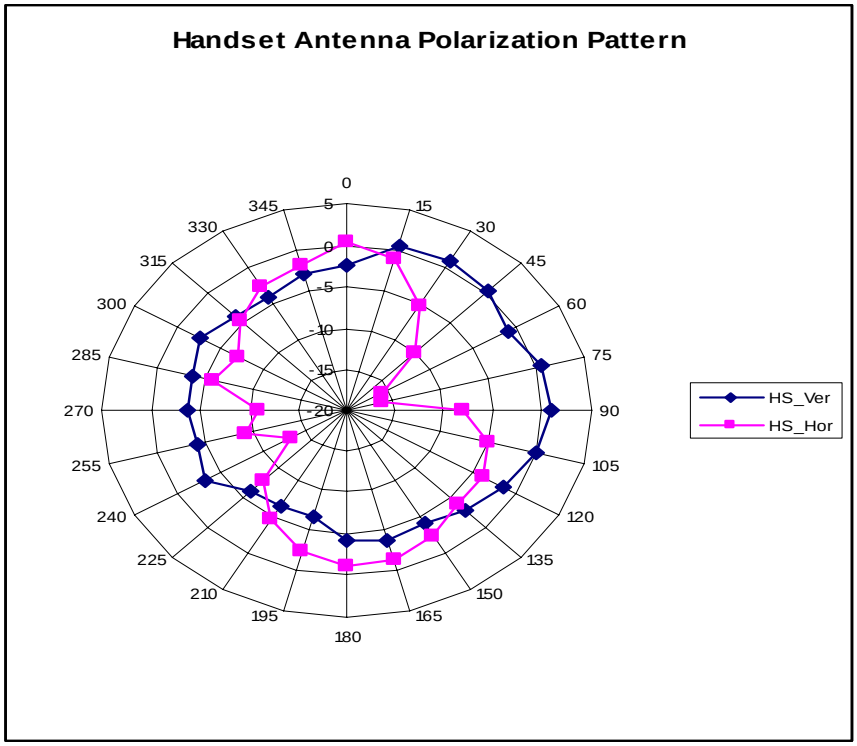
2.2 Handset

2.2.1 Gain



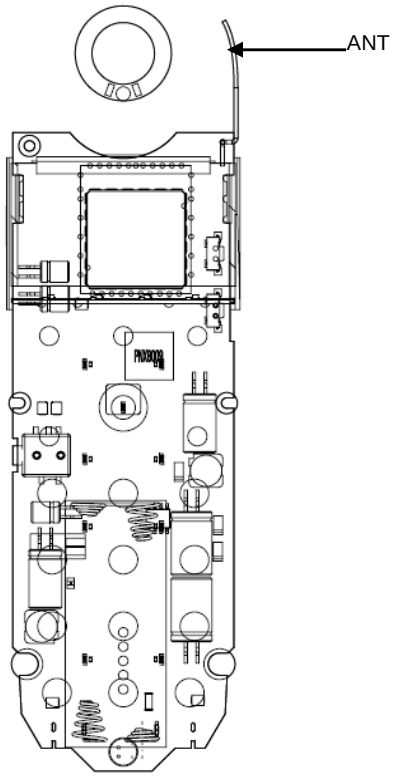
	Channel	5	3	1
	Freq (MHz)	1921.536	1924.992	1928.448
Polarization	Vertical	-0.24	0.63	0.92
	Horizontal	-1.37	0.17	0.21

2.2.2 Polarization



Deg	Horizontal (dBi)	Vertical (dBi)	Deg	Horizontal (dBi)	Vertical (dBi)
0	**0.3**	-2.56	210	-4.78	-6.67
15	-1.05	0.55	225	-8.04	-6.05
30	-5.27	**0.91**	240	-13.45	-3.32
45	-10.3	0.38	255	-9.5	-4.39
60	-15.75	-0.85	270	-10.94	-3.66
75	-16.05	0.73	285	-5.91	-3.73
90	-8.1	0.86	300	-7.16	-2.68
105	-4.97	0.09	315	-4.41	-4.05
120	-3.97	-1.53	330	-2.76	-4.32
135	-4.04	-3.08	345	-2.05	-2.96
150	-2.36	-4.27			
165	-1.32	-3.85	**Max**	**0.3**	**0.91**
180	-1.21	-4.25	Min	-16.05	-6.67
195	-2.52	-6.65	Diff	16.49	7.58

2.2.3 Antenna Assembly



6 CONDUCTED PEAK TRANSMIT POWER

Clause: **15.319 (c) / 6.5**

Requirement: ≤ 100 µW x $\sqrt{B}$ = 5 logB - 10 dBm = 20.8 dBm, where B rated 1.5 MHz

SA Setting: RBW ≥ Emission BW (or increased until no more than 0.5 dB change in power)
ANSI 6.1.2 VBW ≥ 3 x RBW
Span = zero, centered on channel center
Sweep: fast enough to resolve transmit pulse
Detection: Peak

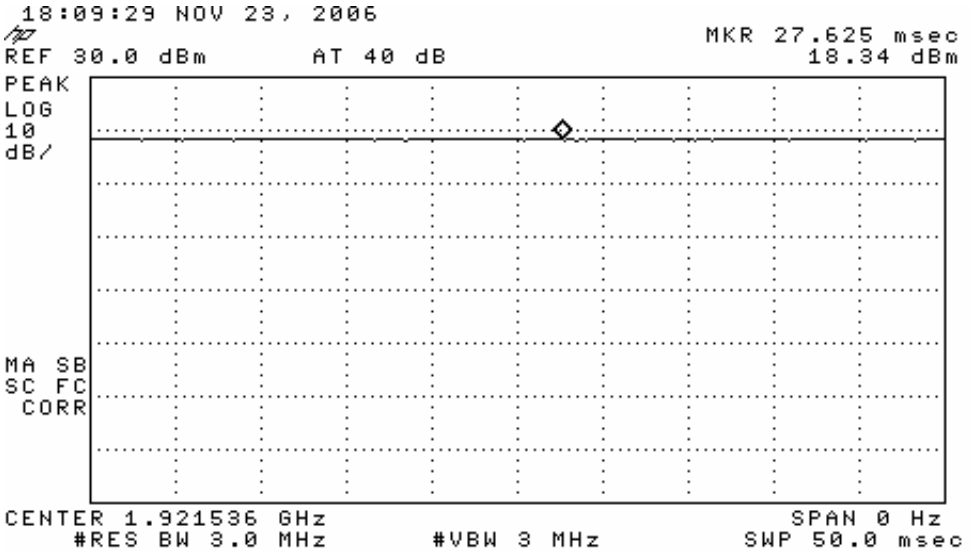
Test Result:

Handset: 18.94 dBm (78 mW)

6.2 Handset

Chan. No.	Freq. (MHz)	Reading (dBm)	Cable (dB)	Pk Power (dBm)	Margin (dBm)	Orig. (dBm)	Diff. (dB)
5	1921.536	**18.34**	0.6	18.94	**1.86**	18.94	0.00
3	1924.992	18.21	0.6	18.81	1.99	78.34	
1	1928.448	18.19	0.6	18.79	2.01	(mW)	

Worst-case plot follows:



Handset peak power at Low-freq Channel

7 DUTY CYCLE CORRECTION FACTOR

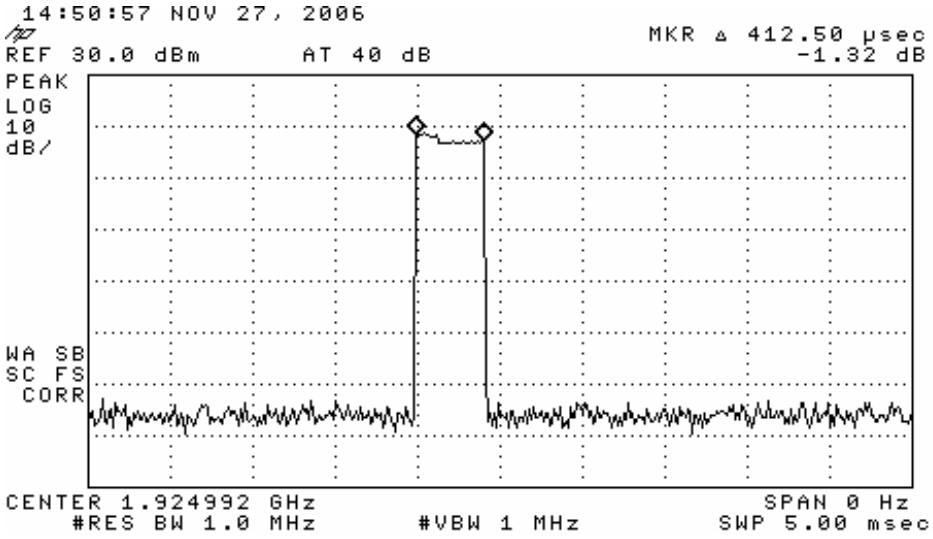
Clause: **RSS-Gen 4.3, RSS-213 6.6**

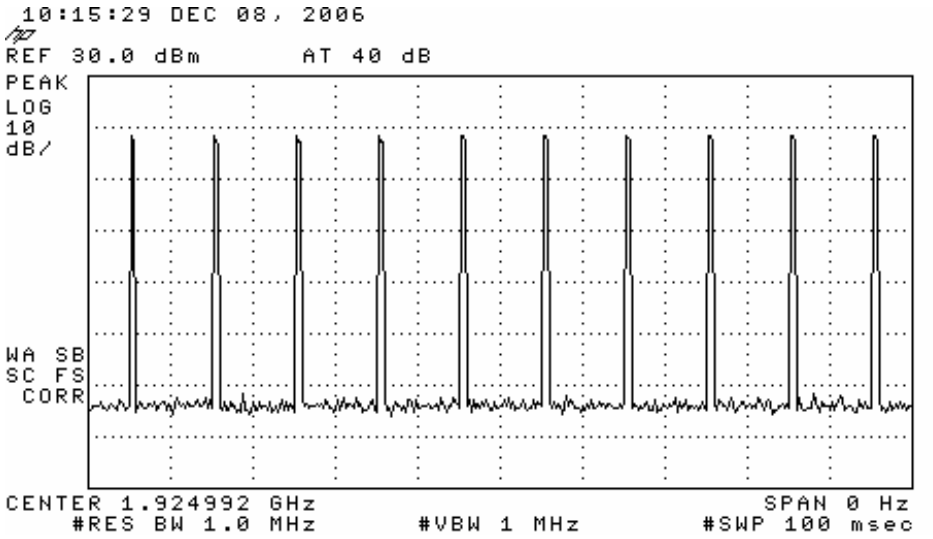
Max. Allowed: 6 dB

SA Setting: RBW = 3 kHz
VBW = RBW
Sweep = 100 ms (or less for better resolution)
Span = zero, centered on channel center
Detection: Peak

7.3 Handset

DCF_HS = 10 log (TX-on Time/100 ms) for power in dBm
= 10 log (412.50 µs x 10 / 100 ms) from timing plots below
= –13.9 dB (4.0%) (only one-slot operation in TDMA)
=> –6 dB maximum allowed





10 RF EXPOSURE

Clause: **15.319 / RSS-Gen 5.5**

Requirement: **1.1307(b), 2.1091 and 2.1093 / RSS-102**

MPE ≤ 1 mW/cm^2 at 20 cm

given by Power density S = EIRP / 4πR^2, where R is distance 20 cm.

For S = 1 mW/cm^2

Maximum permissible P = 4πR^2 = 4π(20)^2 = 5026 mW = 37 dBm

SAR ≤ 1.6 W/kg over any 1 g of tissue

Reference: OET Bulletin 65 for General Population / Uncontrolled Exposure

Test Result:

Handset: Compliant

10.2 Handset SAR

Refer to SAR testing report by Celltech.

Measurement of SAR EUT radiated power

EUT # 1

Chan. No.	Freq. (MHz)	Meter Peak Reading (dBμV)	Coax Loss (dB)	Antenna Factor (Note 2) (dB)	Pre-amp Gain (dB)	Field Strength at 3m (dBμV/m)	Radiated Power (Note 3) (dBm)	EIRP (mW)
5	1921.38	78.59	7.52	28.3 V	0	114.41	18.21	66.22
3	1924.75	78.63	7.52	28.3 V	0	114.45	18.25	66.83
1	1928.88	**78.77**	7.52	28.3 V	0	114.59	**18.39**	**69.02**

EUT # 2

Chan. No.	Freq. (MHz)	Meter Peak Reading (dBμV)	Coax Loss (dB)	Antenna Factor (Note 2) (dB)	Pre-amp Gain (dB)	Field Strength at 3m (dBμV/m)	Radiated Power (Note 3) (dBm)	EIRP (mW)
5	1921.38	78.64	7.52	28.3 V	0	114.46	18.26	66.99
3	1924.75	78.73	7.52	28.3 V	0	114.55	18.35	68.39
1	1928.88	**78.81**	7.52	28.3 V	0	114.63	**18.43**	**69.66**

Note 2: Horn antenna in Horizontal (H) or Vertical (V) polarization
Note 3: 96.2 dB taken as factor to convert Field Strength to Radiated Power in numerical value