Appendix D - Maximum Permissible Exposure Calculation

D.1. REFERENCES

Normative Reference Standard	FCC CFR 47§1.1310 IEEE Std C95.1-1999
Procedure Reference	FCC CFR 47§2.1091

D.2. LIMITS

FCC CFR 47§1.1310 Table 1(b)	1.0 mW/cm^2

D.3. ENVIRONMENTAL CONDITIONS

Temperature	na
Humidity	na
Barometric Pressure	na

D.4. EQUIPMENT LIST

ASSET NUMBER	MANUFACTURER	MODEL	DESCRIPTION	LAST CAL	CAL DUE
na					

D.5. MEASUREMENT EQUIPMENT SETUP

MEASUREMENT EQUIPMENT CONNECTIONS	The results described herein were determined by calculation, so no measurement equipment was used.
MEASUREMENT EQUIPMENT SETTINGS	na

D.6. SETUP PHOTOS

na

D.7. SETUP DRAWINGS

na

D.8. DUT OPERATING DESCRIPTION

na

D.9. TEST RESULTS

Calculation:

RangeStar Internal Antenna (802.11b mode):

Tx Frequency:	2462.00	(MHz)
Power at Antenna Input Terminal:	17.48	(dBm)
Antenna gain:	4.50	(dBi)

S=	1.00	(mW/cm^2)
P=	55.9758	(mW)
G=	2.82	(numeric)

R = 3.54 (cm)

S (mw/cm^2) at 20cm = 0.031351575

RangeStar Internal Antenna (802.11g mode):

Tx Frequency:	2462.00	(MHz)
Power at Antenna Input Terminal:	16.15	(dBm)
Antenna gain:	4.50	(dBi)

S=	1.00	(mW/cm^2)
P=	41.2098	(mW)
G=	2.82	(numeric)

R = 3.04 (cm)

S (mw/cm^2) at 20cm = 0.023081252

Formulae:

$S = \frac{PG}{4\pi R^2}$

$R = \sqrt{\frac{P}{4\pi S}}$

where: S = Power Density Limit
P = Power Applied to the Antenna
G = Numeric Antenna Gain
R = Distance from Antenna

Results:

Mode	Power Density Limit	RF Conducted Output Power	Antenna Gain	MPE Distance	Power Density at 20 cm
	mW/cm^2	dBm	dBi	cm	mW/cm^2
802.11b	1.0	17.48	4.5	3.54	0.031
802.11g	1.0	16.15	4.5	3.04	0.023

D.10. PASS/FAIL

In reference to the results outlined in D.9 the DUT passes the requirements as stated in the reference standards as follows:
1) The DUT must comply with the minimum spacing requirement of 20 cm to ensure an exposure of not more than 1 mW/cm^2.

D.11. SIGN-OFF

I attest to the accuracy of the data. All measurements reported herein were performed by me and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements.

Russell Pipe
Senior Compliance Technologist
Celltech Labs Inc.

04Aug04
Date