1. MEASUREMENT RESULTS

1.1. SYSTEM VALIDATION

Prior to the assessment, the system validation kit was used to test whether the system was operating within its specifications of ±10%. The validation results are tabulated below. And also the corresponding SAR plot is attached as well in the SAR plots files.

IEEE P1528 Recommended Reference Value

Frequency (MHz)	1 g SAR	10 g SAR	Local SAR at surface (Above feed point)	Local SAR at surface (y=2cm offset from feed point)
300	3.0	2.0	4.4	2.1
450	4.9	3.3	7.2	3.2
835	9.5	6.2	14.1	4.9
900	10.8	6.9	16.4	5.4
1450	29.0	16.0	50.2	6.5
1800	38.1	19.8	69.5	6.8
1900	39.7	20.5	72.1	6.6
2000	41.1	21.1	74.6	6.5
2450	52.4	24.0	104.2	7.7
3000	63.8	25.7	140.2	9.5

System Validation Results

Ambient conduction: Temperature 25°C; Relative humidity 39%

System Validation Dipole: D2450V2 SN: 706 **Date of measured**: March 20, 2003

Medium			Parameters	Target	Measured	Deviation[%]	Limited[%]
Type	Temp. [°C]	Dipth [cm]					
Head 2450 MHz	23.00	15.00	Permitivity:	39.2	38.52	-1.73	± 10
			Conductivity:	1.8	1.8536	2.98	± 5
			1g SAR:	52.4	52	-0.76	± 10

1.2. TEST LIQUID CONFIRMATION

Simulated Tissue Liquid Parameter confirmation
The dielectric parameters were checked prior to assessment using the HP85070C dielectric probe kit. The dielectric parameters measured are reported in each correspondent section.

IEEE SCC-34/SC-2 P1528 recommended Tissue Dielectric Parameters
The head tissue dielectric parameters recommended by the IEEE SCC-34/SC-2 in P1528 have been incorporated in the following table. These head parameters are derived from planar layer models simulating the highest expected SAR for the dielectric properties and tissue thickness variations in a human head. Other head and body tissue parameters that have not been specified in P1528 are derived from the tissue dielectric parameters computed from the 4-Cole-Cole equations and extrapolated according to the head parameters specified in P1528

Target Frequency	Head		Body	
(MHz)	ε_r	σ (S/m)	ε_r	σ (S/m)
150	52.3	0.76	61.9	0.80
300	45.3	0.87	58.2	0.92
450	43.5	0.87	56.7	0.94
835	41.5	0.90	55.2	0.97
900	41.5	0.97	55.0	1.05
915	41.5	0.98	55.0	1.06
1450	40.5	1.20	54.0	1.30
1610	40.3	1.29	53.8	1.40
1800-2000	40.0	1.40	53.3	1.52
2450	39.2	1.80	52.7	1.95
3000	38.5	2.40	52.0	2.73
5800	45.3	5.27	48.2	6.00

(ε_r = relative permittivity, σ = conductivity and ρ = 1000 kg/m^3)

Liquid Confirmation Results

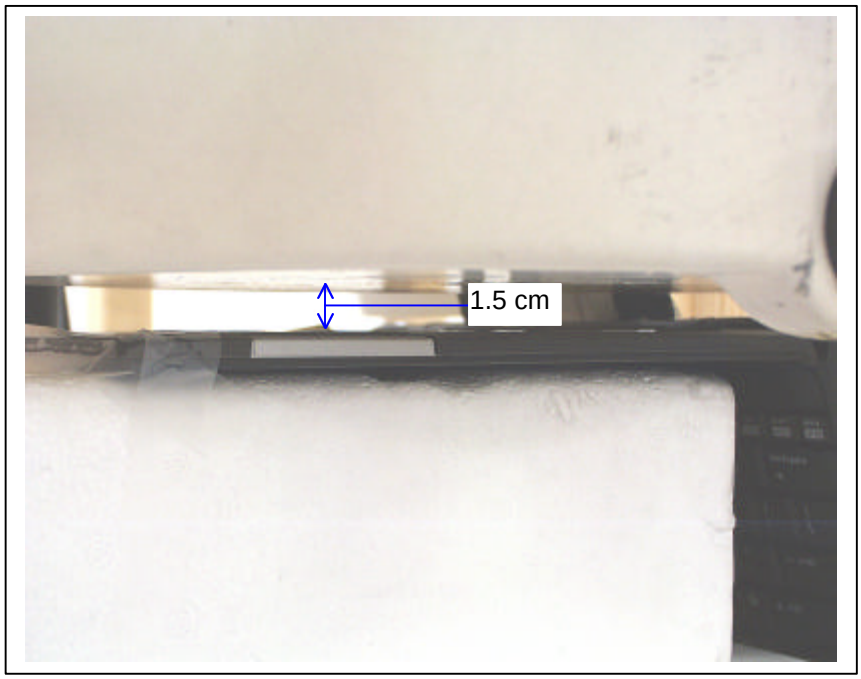
Ambient conduction – Temperature: 25°C; Relative humidity: 39% **Date:** March 20, 2003

Medium			Parameters	Target	Measured	Deviation[%]	Limited[%]
Type	Temp. [°C]	Dipth (cm ±5)					
Muscle 2450 MHz	23	15	Permitivity:	52.7	50.48	-4.21	± 5
			Conductivity:	1.95	1.9409	-0.47	± 5

1.3. EUT SETUP PHOTOS

EUT Set-up Configuration 1 (Antenna A)

1. Installation conditions between EUT and phantom - Rear panel in parallel with flat phantom.
2. Spacing between EUT and phantom - 1.5 cm



EUT Set-up Configuration 2 (Antenna A)

1. Installation conditions between EUT and phantom - EUT perpendicular to flat phantom.
2. Spacing between EUT and phantom - 1.5 cm

EUT Set-up Configuration 3 (Antenna A)

1. Installation conditions between EUT and phantom - Botton face in parallel with flat phantom.
2. Spacing between EUT and phantom - In contact (0 cm).

1.4. SAR MEASUREMENT RESULTS

Measured date: March 20, 2003

Modulation type: DSSS (Crest factor: 1) Depth of liquid: 15.0 cm

EUT Setup Configuration 1 (Antenna A)

EUT Set-up conditions			Frequency		Conducted Power [dBm] (**Peak**)		Liquid Temp [°C]	**SAR** (W/kg)	Limit (W/kg)
Mode	Sep. [cm]	Antenna	Channel	MHz	Before	After			
11b	1.5	A	1	2412	**20.08**	20.05	23.3	0.273	1.6
11g	1.5	A	1	2412	21.65	21.63	23.3	0.255	

EUT Setup Configuration 2 (Antenna A)

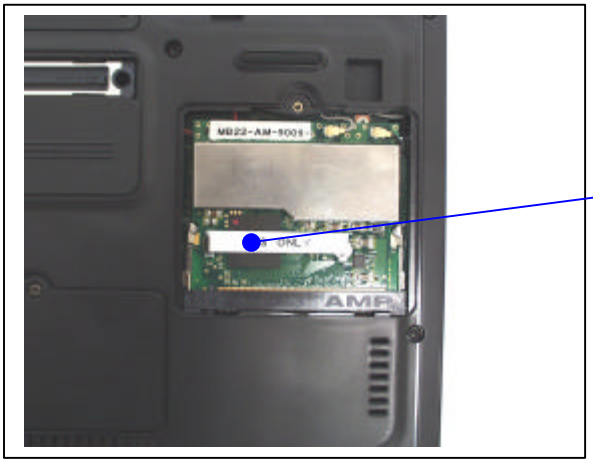
EUT Set-up conditions			Frequency		Conducted Power [dBm] (**Peak**)		Liquid Temp [°C]	**SAR** (W/kg)	Limit (W/kg)
Mode	Sep. [cm]	Antenna	Channel	MHz	Before	After			
11b	1.5	A	1	2412	20.08	20.05	23.0	Cube 0 = 0.252 Cube 1 = 0.199 Cube 2 = 0.195	1.6
11g	1.5	A	1	2412	21.65	21.63	23.0	Cube 0 = 0.202 Cube 1 = 0.163	

EUT Setup Configuration 3 (Antenna A)

EUT Set-up conditions			Frequency		Conducted Power [dBm] (**Peak**)		Liquid Temp [°C]	**SAR** (W/kg)	Limit (W/kg)
Mode	Sep. [cm]	Antenna	Channel	MHz	Before	After			
11b	1.5	A	1	2412	20.08	20.05	23.0	Cube 0 = 0.0112 Cube 1 = 0.00725	1.6

Note (s):
Please refer to attachment for each configuration presentation in plot format.

2. EUT PHOTOS



EUT PHOTOS

The Position of Antennas

Antenna B

Antenna A

3. EQUIPMENTS LIST & CALIBRATION STATUS

Name of Equipment	Manufacturer	Type/Model	Serial Number	Calibration	
				last cal.	due date
S-Parameter Network Analyzer	Agilent	8753ES	MY40001647	8/6/02	8/6/03
Electronic Probe kit	Hewlett Packard	85070C	N/A	N/A	N/A
3.5 mm Calibration Kit	Agilent	85033D	3423A07200	8/6/02	8/6/03
Power Meter	Agilent	E5516A	GB41291160	8/9/02	8/9/03
Power Sensor	Agilent	E9327A	US40440755	9/5/02	9/5/03
Universal Radio Communication Tester	Rohde & Schwarz	CMU 200	838114/032	2/14/03	2/14/04
Amplifier	Mini-Circuit	ZHL-42W	D072701-5	N/A	N/A
DC Power generator	Kenwood	PA36-3A	7060074	N/A	N/A
Data Acquisition Electronics (DAE)	SPEAG	DAE3 V1	427	2/4/03	2/4/04
Dosimetric E-Field Probe	SPEAG	ET3DV6	1577	2/7/02	2/7/04
450 MHz System Validation Dipole	SPEAG	D450V2	1003	4/5/02	4/19/04
900 MHz System Validation Dipole	SPEAG	D900V2	108	4/17/01	4/17/03
1800 MHz System Validation Dipole	SPEAG	D1800V2	294	4/19/01	4/19/03
2450 MHz System Validation Dipole	SPEAG	D2450V2	706	6/4/02	6/4/04
Probe Alignment Unit	SPEAG	LB (V2)	261	N/A	N/A
Robot	Staubli	RX90B L	F00/5H31A1/A/01	N/A	N/A
Generic Twin Phantom	SPEAG	N/A	N/A	N/A	N/A
SAM Phantom	SPEAG	N/A	N/A	N/A	N/A
Devices Holder	SPEAG	N/A	N/A	N/A	N/A
Head 450 MHz	CCS	H450A	N/A	Daily	N/A
Muscle 450 MHz	CCS	M450A	N/A	Daily	N/A
Head 835 MHz	CCS	H835A	N/A	Daily	N/A
Muscle 835 MHz	CCS	M835A	N/A	Daily	N/A
Head 900 MHz	CCS	H900A	N/A	Daily	N/A
Muscle 900 MHz	CCS	M900A	N/A	Daily	N/A
Head 1800 MHz	CCS	H1800A	N/A	Daily	N/A
Muscle 1800 MHz	CCS	M1800A	N/A	Daily	N/A
Head 1900 MHz	CCS	H1900A	N/A	Daily	N/A
Muscle 1900 MHz	CCS	M1900A	N/A	Daily	N/A
Head 2450 MHz	CCS	H2450A	N/A	Daily	N/A
Muscle 2450 MHz	CCS	M2450A	N/A	Daily	N/A

4. ATTACHMENTS

Exhibit	Contents	No. of page (s)
1	System Validation Plot	1
2	SAR Test Plots	12
3	Dosimetric E-Field Probe - ET3DV6, S/N: 1577	14
4	Validation Dipole - D2450V2, S/N: 706	7

End of Report