

COMOSAR Head liquid 1900 MHz Calibration Report



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Issue: A

Date: 2008/10/06

HEAD LIQUID 1900 MHZ CALIBRATION REPORT

Prepared By: LUC Jérôme, SATIMO
Project Description: SAR TEST BENCH
Prepared For (End User): Shenzhen Morlab Communication Technology

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HEAD LIQUID 1900 MHz CALIBRATION REPORT

DATE: 14/11/2008

REFERENCE: SN 36/08 HLG125

OBJECT: HEAD LIQUID 1900 MHz

MANUFACTURER: SATIMO

SERIAL NUMBER: SN 36/08 HLG125

CUSTOMER: Shenzhen Morlab Communication Technology

CONTRACT: PF2130108b_SAR_Morlab

DATE OF CALIBRATION: 24/09/2008

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Date

2008 / 10 / 06

SAR TEAM MANAGER

JS

SATIMO Bretagne
Technopôle Brest Iroise
Zone du Vernis
225 rue Pierre Rivoalon
29200 BREST

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PRODUCT DESCRIPTION

Components :

De-ionised water
Sodium chloride
Triton X-100
Diethylen Glycol Butyl Ether

CALIBRATION TEST EQUIPMENT

TYPE	IDENTIFICATION
Network analyser.	HP8753D
Dielectric probe kit	ANTENNESSA OCP

IEEE RECOMMENDED REFERENCE VALUES

Frequency (MHz)	Relative Dielectric Constant (ϵ_r)	Conductivity (σ) (S/m)
300	45.3	0.87
450	43.5	0.87
835	41.5	0.90
900	41.5	0.97
1450	40.5	1.20
1800	40.0	1.40
1900	40.0	1.40
2000	40.0	1.40
2450	39.2	1.80
3000	38.5	2.40

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DIELECTRIC PARAMETERS MEASURED

Frequency (MHz)	Epsilon'	Epsilon''	Sigma (S/m)	IEC/IEEE Standard (Head Liquid)
1700.00	39.86	13.38	1.26	Epsilon': 0.72 % Epsilon'': -5.33 %
1720.00	39.73	13.27	1.27	Epsilon': 0.96 % Epsilon'': -6.36 %
1740.00	39.44	13.35	1.29	Epsilon': -1.61 % Epsilon'': -5.52 %
1760.00	39.30	13.33	1.30	Epsilon': -1.89 % Epsilon'': -5.39 %
1780.00	39.36	13.37	1.32	Epsilon': -1.67 % Epsilon'': -4.81 %
1800.00	39.35	13.44	1.34	Epsilon': -1.62 % Epsilon'': -3.97 %
1820.00	39.29	13.50	1.36	Epsilon': -1.77 % Epsilon'': -2.53 %
1840.00	39.13	13.28	1.36	Epsilon': -2.19 % Epsilon'': -3.04 %
1860.00	38.93	13.37	1.38	Epsilon': -2.67 % Epsilon'': -1.33 %
1880.00	39.06	13.47	1.41	Epsilon': -2.35 % Epsilon'': 0.45 %
1900.00	39.13	13.56	1.43	Epsilon': -2.17 % Epsilon'': 2.28 %
1920.00	39.24	13.51	1.44	Epsilon': -1.89 % Epsilon'': 2.97 %
1940.00	38.98	13.56	1.46	Epsilon': -2.55 % Epsilon'': 4.36 %
1960.00	38.91	13.50	1.47	Epsilon': -2.74 % Epsilon'': 4.97 %
1980.00	38.90	13.52	1.49	Epsilon': -2.76 % Epsilon'': 6.23 %
2000.00	39.07	13.64	1.52	Epsilon': -2.33 % Epsilon'': 8.22 %

Freq (MHz)	Parameters	Liquid Temp (°C)	Target Value	Measured Values	Deviation (%)	Limits (%)
1900	ϵ_r	21.0	40.0	39.13	-2.2	± 5
	σ (S/m)	21.0	1.40	1.43	+2.3	± 5

ϵ_r = relative permittivity, σ = conductivity.