



Federal Communications Commission
 Authorization and Evaluation Division
 Equipment Authorization Branch
 7435 Oakland Mills Road
 Columbia, MD 21046

IHR ZEICHEN / YOUR REF. IHR SCHREIBEN / YOUR INFORM. UNSER ZEICHEN / OUR REF.

DATUM / DATE

5-Mar-02

Subject: Applicant: GN Netcom Inc
 FCC ID: BCE-GNELLIPSE24
 731 Confirmation number: EA636896
 Correspondence Reference Number: 21905

Dear Sir,

Submitted herewith, on behalf of our customer is an amendment to the subject application, provided in response to your request for technical information:

Q1. Please measure peak power at antenna terminals as required by FCC Rules Part 15.247.

Answer:

Because using only internal antennas (permanently integrated into the PCB) radiated output power tests are performed as alternative procedures. With help of the attached antenna data sheets the value for maximum conducted peak power can be calculated as follows:

$P_{\text{conducted}} = P_{\text{radiated}} - G$	$P_{\text{conducted}}$	- conducted peak power
	P_{radiated}	- radiated peak power
	G	- antenna gain [dBi]

Antenna Gain according to data sheets:

Base unit: Antenna I (BS F antenna) :	3 dBi
Base unit: Antenna II (BS monopole antenna):	1.5 dBi
Remote unit: HS antenna:	1.5 dBi

Calculation conducted peak power:

Base unit / antenna I (BS F antenna):	$P_{\text{conducted}} = 25.21 \text{ dBm} - 3 \text{ dBi} = \underline{22.21 \text{ dBm}}$
Base unit / antenna II (BS monopole antenna):	$P_{\text{conducted}} = 22.56 \text{ dBm} - 1.5 \text{ dBi} = \underline{21.06 \text{ dBm}}$
Remote unit / HS antenna:	$P_{\text{conducted}} = 29.26 \text{ dBm} - 1.5 \text{ dBi} = \underline{27.76 \text{ dBm}}$

Q2. Also give supporting statements as to how the SAR procedure used conforms to FCC/OET Bulletin 65, Supplement C, edition 97-01.

Answer:

In order to give support as to how the used SAR procedure conforms to FCC/OET Bulletin 65, Supplement C, edition 97-01 the SAR measurement report was revised and completed.

Please find attached the revised test report which contains following completion:

- liquid temperatures
- probe conversation factors
- crest factors
- worst case calculation with a worst case conversation factor of 1
- power drift

The most of the above mentioned parameters you will find above the test plots.

Additional system validation 1800 MHz:

Additionally to the system validation as mentioned in the measurement report, the probe had been validated with the same liquid but at a frequency of 1800 MHz with a 1800 MHz validation dipole with the following measurement parameters:

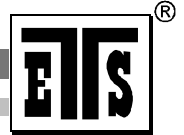
Used dipole:	SPEAG D1800V2, serial number 292
Dipole input power	250 mW \pm 1.5 %
Measuring distance from dipole center to solution surface	10 mm
Coarse grid spacing	12 mm
Relative permittivity	$\epsilon_r = 40$
Conductivity	$\sigma = 1.75$ mho/m
Validation result, averaged over 1g / 10g	10.1 / 5.09 mW/g
Manufacture specification for validation	10.1 / 5.18 mW/g

As the results of both validation measurements are close to the values specified by the manufacturer, a correct performance at 2.4 GHz can be assumed.

Analysis regarding to the used liquid showing the effects on the SAR values:

To achieve the necessary dielectric parameters above 1 GHz, glycol has to be used in the measurement liquid. As glycol reacts with the phantom-shell and E-field probe a liquid without any chemical agents was used, which results in a lower dielectric constant and a higher conductivity. Numerical calculations with the Maxwell-equation-solver MAFIA (CST Darmstadt) have shown that using this measurement liquid will overestimate the SAR-values by more than 25 %. This guarantees that the measurements comply with the FCC limits.

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We hope this information is sufficient to issue the grant. If you have further questions please do not hesitate to contact us.

Sincerely,

A handwritten signature in black ink, appearing to read 'J. Baschin'.

Jürgen Baschin

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