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Attention: Equipment Authorization Branch

Appendix to SAR test report of Nokia 6180 FCC ID: GMLNSD-3GX

SAR with different battery options

The different battery options have very similar SAR values. Results are all within 8%. Battery options according the final User guide are:

BLS-2 (900mAh LiIon), BMS-2S (900mAh NiMH) and BLS-4 (1500mAh LiIon).

Nokia has at the moment five Schmit & Partner SAR measurement systems. These are under regular calibration routine offered by the manufacturer, including one in San Diego to support our US R&D activities. The SAR system in Salo, Finland is under tightest calibration control and is used for official measurements at Nokia Mobile Phones. Other systems are for R&D measurements and results are compared with Salo system regularly.

We have made additional SAR measurement with different battery options using our San Diego SAR facilities. Test results are reported at Table 1. These results correspond very well with our previous results, but should be considered relative only, because these are not measured using the Nokia Mobile Phone's official measurement system in Salo, Finland.

As following test results show, BLS-2 battery option provides worst case results. BLS-2 battery option was also the one used for the measurements in the original SAR test report for Nokia 6180 handportable cellular phone.

Table 1. SAR test results for Nokia 6180 GMLNSD-3GX with different battery options

System	Channel	Battery type	$P_{OUT\ (CONDUCTED)}$	SAR
AMPS	991	BLS-2	25.2 dBm	0.98
AMPS	991	BMS-2S	25.2 dBm	0.95
AMPS	991	BLS-4	25.2 dBm	0.96
AMPS	383	BLS-2	25.2 dBm	1.41
AMPS	383	BMS-2S	25.2 dBm	1.37
AMPS	383	BLS-4	25.2 dBm	1.37
AMPS	799	BLS-2	25.2 dBm	1.35
AMPS	799	BMS-2S	25.2 dBm	1.32
AMPS	799	BLS-4	25.2 dBm	1.35
CDMA	991	BLS-2	24.5 dBm	0.84
CDMA	991	BMS-2S	24.5 dBm	0.82
CDMA	991	BLS-4	24.5 dBm	0.80
CDMA	383	BLS-2	24.5 dBm	1.19
CDMA	383	BMS-2S	24.5 dBm	1.18
CDMA	383	BLS-4	24.5 dBm	1.22
CDMA	799	BLS-2	24.5 dBm	1.14
CDMA	799	BMS-2S	24.5 dBm	1.14
CDMA	799	BLS-4	24.5 dBm	1.11

Yours truly,

NOKIA MOBILE PHONES INC.

Jari Niemelä
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Care and Maintenance

Your phone is a product of superior design and craftsmanship and should be treated with care. The suggestions below will help you to fulfill any warranty obligations and allow you to enjoy this product for many years. When using your phone, battery, charger, OR any accessory:

- Keep it and all its parts and accessories out of small children's reach.
- Keep it dry. Precipitation, humidity and liquids contain minerals that will corrode electronic circuits.
- Do not use or store it in dusty, dirty areas as its moving parts can be damaged.
- Do not store it in hot areas. High temperatures can shorten the life of electronic devices, damage batteries, and warp or melt certain plastics.
- Do not store it in cold areas. When the phone warms up (to its normal operating temperature), moisture can form inside the phone, which may damage the phone's electronic circuit boards.
- Do not attempt to open it. Non-expert handling of the device may damage it.
- Do not drop, knock or shake it. Rough handling can break internal circuit boards.
- Do not use harsh chemicals, cleaning solvents, or strong detergents to clean it. Wipe it with a soft cloth slightly dampened in a mild soap-and-water solution.
- Do not paint it. Paint can clog the device's moving parts and prevent proper operation.
- Use only the supplied or an approved replacement antenna. Unauthorized antennas, modifications or attachments could damage the phone and may violate regulations governing radio devices.
- If the phone, battery, charger, or any accessory is not working properly, take it to your nearest qualified service facility. The personnel there will assist you, and if necessary, arrange for service.

10. Technical Data

Wireless System	Single-Band CDMA and AMPS
Weight	142.5 g (5.0 oz.) with BLS-2 900 mAh Li-Ion Battery
Size	129 cc (7.9 cu. in.)
Frequency Range	
Lowband	824.04 - 848.97 MHz (TX) 869.04 - 893.97 MHz (RX)
Battery Voltage	3.6 V nominal
Charging current	850 mAh max.
Operating Temperature	-30°C to + 60°C (-22°F to + 140°F)
Number of Channels	832
Number of NAMs	2
Memory Locations	200
Memory Capacity	Alpha: 16 characters per location Numeric: 32 digits per location
Data transmission	14.4 kbps
Fax	Group 3 Send/Receive (14.4 kbps)

The information contained in this phone was written for dual-mode CDMA and AMPS phones.

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