Applicable Documents

- G24-L Developer's Kit - 6802984C10
- G24-L AT Commands - 6802983C95

Regulatory Requirements

The G24-L module is compliant with applicable FCC, IC and European R&TTE requirements. The integrated system incorporating the G24-L module may be subject to further regulations and standards. Motorola strongly recommends that the system integrator seeks professional advice regarding the regulations and standards that apply to their product.

The Federal Communications Commission (FCC) requires application for certification of digital devices in accordance with CFR Title 47, Part 2 and Part 15. This includes Electromagnetic Energy Exposure (EME) testing. As the G24-L modem is not a standalone transceiver but is an integrated module, the G24-L cannot be tested by itself for EME certification. It is, however, the integrator's responsibility to have the completed device tested for EME certification.

The module is compliant to European R&TTE directive requirements; however the complete system (host plus G24 module) may be subject to R&TTE or other directives (for instance the EMC directive 2004/108/EC). Motorola strongly recommends that the system integrator seek professional advice regarding the applicable standards and directives, and most efficient route to demonstrating compliance, and required product markings.

The G24-L module is compliant to FCC, IC and R&TTE requirements allowing use within Europe and North America. Use in other regions may require regional "type approvals" which the manufacturer of the final product integration or reseller will be responsible for procuring. Many regional type approvals are based upon compliance to FCC, R&TTE, ETSI and other standards that the G24-L is compliant with. It is strongly recommended that professional advice be sought before placing the finished integrated product on the market to establish local approval and marking requirements.

Safety Statement and Requirements

Certain safety precautions must be observed during all phases of the operation, usage, service or repair of any cellular terminal or mobile incorporating the G24-L module. The integrator is advised to consider the following general cautions in the context of their integrated system incorporating the G24-L module, and to provide the end user with the applicable warnings and advice of safe operation of the equipment.

Failure to comply with these precautions violates safety standards of design, manufacture and intended use of the product. Motorola assumes no liability for customer failure to comply with these precautions.

- The G24-L must be operated at the voltages described in the technical documentation
- The G24-L must not be mechanically nor electrically changed. Use of connectors should follow the guidance of the technical documentation
- The G24-L is designed to meet the EMC requirements of EN301 489-1 and EN301 489-7 for R&TTE devices using GSM
- When integrating the G24-L into a system, Motorola recommends testing the system to EN301 489-1 and EN301 489-7 for R&TTE devices using GSM
- The G24-LC meets the safety requirements of EN60950

- Systems using the G24-L are subject to mandatory EMC testing under directive 2004/108/EC (see item 3 above). Other directives, such as the LVD directive 2006/95/EC, may also apply to a system using the G24-L module
- The integrated product incorporating the G24-L moduel must be evaluated for SAR under intended use conditions, and suitable text and SAR values be provided to the end user
- No wireless device can guarantee operation at all times due to network or interference conditions, A user should never rely on a wireless device as the sole means of making emergency calls
- The G24-L module complies with all applicable standards and directives, this does not guarantee that the product it is integrated into complies, expert advice should be sought to identify the applicable regulations and show compliance

Suitable warning statements regarding the use of RF energy in the integrated host system should be given in the end user documentation.

Antenna and Transmission Safety Precautions

User Operation

The G24-L module is normally supplied without an antenna, and is compliant with SAR requirements provided the following conditions are observed.

Do not operate your unit when a person is within 8 inches (20 centimeters) of the antenna. A person or object within 8 inches (20 centimeters) of the antenna could impair call quality and may cause the phone to operate at a higher power level than necessary.

Important: The unit must be installed in a manner that provides a minimum separation distance of 20 cm or more between the antenna and persons and must not be co-located or operate in conjunction with any other antenna or transmitter to satisfy FCC RF exposure requirements for mobile transmitting devices.

Important: To comply with the FCC RF exposure limits and satisfy the categorical exclusion requirements for mobile transmitters, the requirements described in the following section, “Antenna Installation” , must be met.

Antenna Installation

- The antenna installation must provide a minimum separation distance of 20 cm from users and nearby persons and must not be co-located or operating in conjunction with any other antenna or transmitter.
- The combined cable loss and antenna gain must not exceed +6.8 dBi (850 band). The combined cable loss and antenna gain must not exceed +2.2 dBi and total system output must not exceed 2.0W EIRP in the PCS (1900) band in order to comply with the EIRP limit of 24.232 (b). OEM installers must be provided with antenna installation instruction and transmitter operating conditions for satisfying RF exposure compliance.
- For system integrations requiring higher antenna gain, or position closer than 20cm from the body, SAR compliance testing of the completed product will be required. It is strongly recommended that the system integrator seeks the advice of a suitably accredited test laboratory to develop a test plan and carry out necessary testing.

Standards

Electromagnetic Compatibility: Principles and Applications by David A Weston, published by Marcel Dekker, Inc., 270 Madison Avenue, New York, NY 10016 USA.

GSM 07.07 - prETS 300 916, Digital cellular telecommunication system (Phase 2+); AT command set for GSM Mobile Equipment (ME), Version 5.2.0 or higher, Reference RE/SMG-040707QR1.

GSM 07.05, Digital cellular telecommunication system (Phase 2+); Use of Data Terminal Equipment - Data Circuit terminating; Equipment (DTE-DCE) interface for Short Message Service (SMS) and Cell Broadcast Service (CBS), Version 5.3.0, August, 1997, Reference TS/SMG-040705QR2.

GSM 03.40, Digital cellular telecommunication system (Phase 2+); Technical realization of the Short Message Service (SMS) Point-to-Point (PP), Version 5.3.0, July 1996, Reference TS/SMG-040340QR2.

GSM 04.11 Digital cellular telecommunication system (Phase 2+); Point-to-Point (PP) Short Message Service (SMS) support on mobile radio interface, Version 5.1.0, March 1996, Reference TS/SMG-030411QR.

GSM 03.38, Digital cellular telecommunication system (Phase 2+); Alphabets and language-specific information, Version 5.3.0, July 1996, Reference TS/SMG-040338QR2.

GSM 51.010-1, Digital cellular telecommunication system (Phase 2+); Mobile Station (MS) Conformance specification; Part 1: Conformance specification (3GPP TS 51.010-1 version 7.0.1 Release 7).

GSM Specifications are orderable from Global Engineering Documents, 15 Inverness Way East, Englewood, Colorado 80112-5704 USA 303-792-2181 800-624-3974.

ETSI Standard PCS - *11.10-1*.

GSM 02.30 Supplementary services.

GSM 03.90 USSD stage 2.

GSM 11.14 SIM toolkit.

ITU-T *V.25ter*

GSM Data Adapter for Motorola Handsets, AT command reference, Rev 2, June 9 1997.

ETSI standard SMG31.

GSM 05.02.

ETSI 07.60.

ETSI 0.7.07 Ver. 7.5.0.

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