are strongly encouraged to use the services of a consultant or a full-service test house if you have limited expertise in meeting the regulatory requirements of a specific country.

All certification tests must be made by a qualified laboratory to ensure that the equipment complies with the applicable technical standards.

United States of America

The Federal Communications Commission (FCC) requires application for certification of digital devices in accordance with CFR Title 47, Part 2 and Part 15. A Wavenet Boomer-III OEM Modem Module is part of a complete system and certain testing is necessary for the integrated product.

FCC Part 15, Class A or B certification (dependant upon final integrated product type) must be performed with the maximum configuration use and include all peripherals of the integrated product. The application for certification must refer to the approval data on file for the particular Boomer-III Modem Module, as shown in the following example. Include the following language in the documentation inserting the name of the integrated product in place of xxx below:

> ~~"The Wavenet Boomer-III OEM modem module is a subassembly of xxx and has FCC Identifier PQS-BM3800D"~~

FCC Part 2 certification requires all integrated products to have routine environmental evaluation for radio-frequency (RF) exposure prior to equipment authorization or use in accordance with FCC rules 2.1091 and 2.1093 and FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields, OET Bulletin 65 and its Supplement C.

For "**portable devices"**, defined in accordance with FCC rules as transmitting devices designed to be used within 20 cm of the user body under normal operating conditions, Specific Absorption Rate (SAR) testing must be performed and the unit re-submitted for separate FCC certification approval. An exposure limit of 1.6 W/kg will apply to most OEM integrated applications.

For "**mobile or fixed devices"**, defined as transmitting devices designed to be generally used such that a separation distance of at least 20 cm is maintained between the body of the user and the transmitting radiated structure, Maximum Permissible Exposure (MPE) limits may be used with field strength or power density limit of 0.54 mW/cm2 (at 806 MHz).

Wavenet submitted module specific information and test reports for generic MPE compliance. If the Boomer-III OEM Modem Module is used in a mobile or fixed application with an antenna system gain less than 5dBi, the MPE limits will not be exceeded. In this case, the following clause should be included in the installation and user documentation:

"To satisfy FCC RF exposure requirements a separation distance of 20 cm or more should be maintained between the antenna of this device and persons during device operation. To ensure compliance, operations at closer than this distance is not recommended."

If an antenna system is used which has an average gain greater than 5dBi then the integrated product must be re-tested as a complete unit and submitted with its own FCC ID.

It is mandatory for portable integrated products such as handheld and body-worn devices to comply with FCC guidelines for Specific Absorption Rate (SAR) requirements. Refer to OET Bulletin 65 and Supplement C (June 2002). The submission should include end product information, end product SAR/MPE test report, and a reference to the Wavenet Boomer-III OEM Modem Module FCC ID for all other Part 90 requirements.

It is a requirement for integrated product certification that you provide the following statement in user documentation:

"Regulatory Notice of Compliance

This equipment has been tested and found to comply within the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help."

Labelling

The FCC requires the integrated product to be labelled as shown here:

~~"This product contains a type-accepted transmitter approved under FCC ID: PQS-BM3800D."~~

Refer to FCC CFR 47, Part 2, Subpart J for information on obtaining an FCC grantee code, FCC identifier requirements, label requirements, and other equipment authorisation procedures.

The FCC does not permit use of an FCC identifier until a Grant of Equipment Authorisation is issued. If you display a device at a trade show before the FCC has issued a grant, the following statement must be prominently displayed:

> "This device has not been approved by the Federal Communications Commission. This device is not, and may not be, offered for sale or lease, sold or leased until the approval of the FCC has been obtained."

Canada

Industry Canada (IC), formerly the Department of Communications, requires certification for all radio transceivers as either type-approved or technically accepted.

If you do not make any physical or electrical changes to the Boomer-III OEM modem and you add an antenna externally to your host/terminal, you are not required to make a formal application to Industry Canada, because Boomer-III OEM modems continue to be covered under the original Radio Equipment Certificate of Type Approval.

Most of the tests required for FCC applications can be used for Industry Canada applications. IC requires additional tests, which distinguishes their certification process as unique.

The Radio Standards Procedure RSP-100 describes the procedure for obtaining certification of radio equipment and labelling requirements. These documents are available upon request from Industry Canada in Ottawa or from their website at http://spectrum.ic.gc.ca/~cert/certprocedures_radio_e.html .

Labelling

Industry Canada requires OEM products to be labelled as follows:

~~IC: XXXX-BM3800D~~

~~Or,~~

~~IC: XXXX-BM3800D~~

Where XXXX represents the number supplied to the OEM by Industry Canada.

Air Interface Protocols

Data exchange protocols transport data between the host/terminal and the network. Within the radio portion of the network, between the device and the base station, specialized RF protocols (RD-LAP or MDC4800) carry the data. These radio protocols are typically transparent to wireless applications.