Positioning the Antenna

Positioning the antenna will affect the gain provided by the antenna.

The antenna should be orientated so that it provides vertical polarisation as the DataTAC network is based on vertically polarised radio-frequency transmission.

The antenna should be located as far from the active electronics of the computing device as possible. Typically, a metal case of a computing device and its internal components may attenuate the signal in certain directions. This is undesirable as the sensitivity and transmit performance of the Boomer II would be reduced. However, careful use of metal used for the ground plane for an antenna can improve the antenna gain and the coverage area for the system.

If your device is designed to sit on a surface, the antenna should be positioned as far from the bottom of the device as possible. This is to reduce the radio frequency reflections if the device is placed on a metal surface.

If your device is hand held or is worn next to the body, the antenna should be positioned to radiate away from the body.

The integrator should refer to the statement of Compliance on page 12 of this manual and Regulatory Requirements section on pages 23-27 for country requirements.

Source Based Time Averaging Function

For portable or handheld applications the integrated terminal or host must comply with OET Bulletin 65 and Supplement C (June 2002) with respect to Specific Absorption Rate (SAR) requirements.

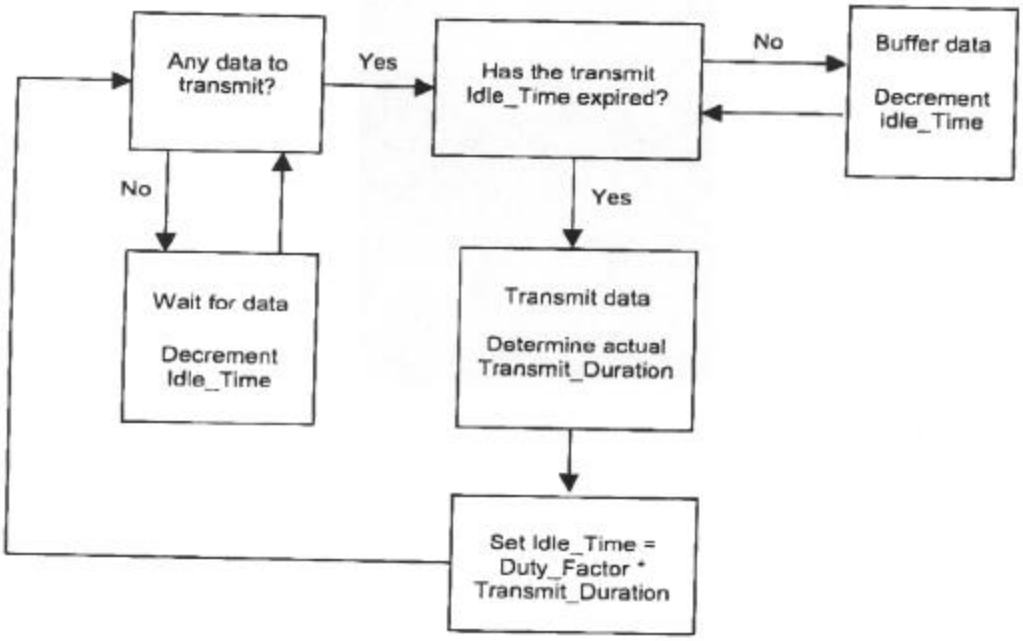
The Boomer-II modem module operates on a packet data network which sets the timing of most aspects of the RF signalling protocol. The shortest transmit event over which the Boomer-II modem has control is a transmit transaction which is comprised of a series of transmit pulses.

For portable or handheld applications a source based time averaging function has been incorporated in the Boomer-II modem firmware. This function limits the transmit duty cycle by controlling the timing of when transmit transactions are initiated and the delay period between them.

When a data transmission occurs, the actual transmit time is recorded. Subsequent data transmissions are inhibited until a delay period (idle time) has elapsed to ensure the average duty cycle of transmissions is less than the preset "Duty Cycle" limit. Any delayed user data that is to be transmitted will be buffered until it is permitted to be sent.

The algorithm for the Source Based Time Averaging transmit control and the relevant parameters are given below:

- Idle_Time = Duty_Factor * Transmit_Duration
- Duty Factor = (100 – Duty_Cycle%) / Duty_Cycle%
- Duty_Cycle% = Preset limit for SAR compliance



Source Based Time Averaging Transmit Algorithm

The Boomer-II modem module has an overall transmit Duty Cycle limitation of 30% (maximum) to physically protect the modem hardware.

The default Duty Cycle preset in the factory at the time of manufacture is 10%. Other duty factors and SAR evaluation must be addressed at the time of OEM integration into any final host product and is the responsibility of the OEM Integrator.

The algorithm and preset Duty Cycle is recorded in the module firmware at the time of manufacture and cannot be altered by the end user.