

GSM3208 Operational Description

Power Management

The device uses a SPDT push button momentary switch to activate a D Flip-Flop circuit. This circuit controls the Power MOSFET that supplies battery power to the GSM/GPRS Wireless Modem (Host System).

The digital circuitry is powered from a 3.3V linear regulator. It has extensive filtering at the regulator as well as the individual IC's. A separate auxiliary 3.3V linear regulator supports the battery LED status.

The device uses a single cell 650mA-hr internal non-removable battery with a built-in protection circuit. The charger is a linear charger with internal MOSFET control and external filtering. It is powered by a regulated external 5V wall mount supply. Filtering and circuit protection are accomplished with the use of a shunt capacitor, series coil, and a transorb device on the input power supply.

LED status indicators

Two LED's are used to indicate battery status and registration status.

	Battery/Charger LED	Registration LED
Off State	Off	Off
Charger Plugged in (Unit Off)	Yellow	Off
Charger Plugged in (Unit On)	Yellow	X
Charger Plugged in (Charge Complete)	Green	X
On State (attempting to connected)	Green	Orange
On State (connected to Network)	Green	Green
Low Battery	Orange	X
Ultra low Battery	Flashing Orange	X

IrDA Compliant Protocol processor and IrDA Encoder/Decoder

The ACT-IR8200L is a microprocessor with on-chip IrDA protocol stack. The interface to the host is via a traditional asynchronous serial data port. The ACT-IR8200L uses an external 22.1184MHz reference crystal. The host has full control of the communication sessions and data flow.

The ACT-IR8200L communications to the ACT-IR220VACF (half-duplex Infrared processor) thru RS232 data lines. The ACT-IR220VACF encodes RS232 compatible data to IrDA compatible signal and decodes IrDA compatible signals to RS232 data at a baud rate up to 115.2kbps.

A crystal of 3.6864MHz is used for pulse stretching and shortening, this allows for IrPHY modulation schemes.

The IrDA Encoder/Decoder is connected to the transceiver thru an IR cable assembly.

Audio Interface

An onboard fully differential audio power amplifier is connected to the Host. A 2.5mm Audio plug is provided for user interface.

Connector Interfaces

1. 60 pin connector for GSM/GPRS modem interface.
2. A SIM card reader connector
3. 6 pin De-Bug interface

PCB Antenna

The Enfora Wireless GSM/GPRS Portfolio is a device that incorporates an internal antenna for wireless communication. The antenna is a variation of a simple F-Type, made of copper etched on PCB, and is connected to the GSM/GPRS modem by a 45mm coaxial cable. To achieve the proper radiation pattern the field around the antenna must be free of any reference ground plane; therefore the antenna is placed in a region of the PCB void of any ground plane (approx. 1-inch wide area between the ground plane and edge of the PCB.)

Normal operation of the antenna is achieved only when the portfolio is completely assembled. The dielectrics of the PCB (FR4 material, 62mil thick, 4-layer stack-up) and the plastic housing that fits over the PCB affect the tuning of the antenna. The combined dielectric of the PCB and the housing tunes the antenna to the quad band frequencies of 850,900,1800 and 1900 MHz.