

Programming iChip to Internet-Enable a Motorola iDEN Modem

Scope:

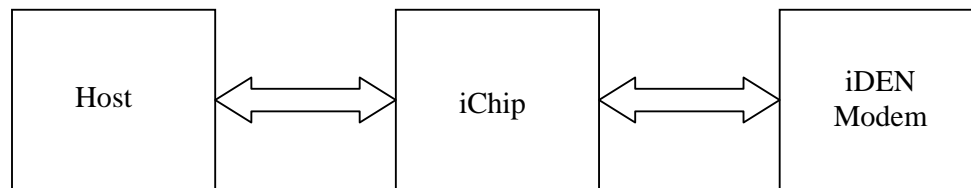
The scope of this document is to describe to users of Connect One's iChip™ Internet Controller™ how to interface commands and parameters using Connect One's AT+i™ Application Programming Interface into a Motorola iDEN modem.

General:

iChip firmware supports iDEN modems. Any host controller working with any operating system (or no operating system) can use iChip with a Motorola iDEN modem to configure flow control and baud rate, for example, and to support specific iDEN commands.

Method of Operation:

Following is a general description of a typical way to connect iChip and an iDEN modem to your application.



By default, iChip is always in transparent mode, allowing the host to talk directly to the modem and to take advantage of regular communication tasks, like modem configuration, or specific iDEN features like data transfer.

Once the need for Internet activity arises, the host will send iChip AT+i commands that instruct iChip to take over the modem and to conduct the required Internet task in Internet mode. For example, if the host wishes to send a text email, after a one-time short configuration, all it has to do is send the iChip the command AT+iEMA:<email body text...>. iChip will instruct the iDEN modem to dial the ISP or to use the existing connection with iDEN, build the PPP connection, login to the ISP by sending the username and password, build the email header and body, and send the email via an SMTP connection – all with no assistance from the host. In this manner, the host controller will continue to take care of the application, without using any processing resources for the Internet connectivity tasks.

Hardware Connection:

The connections between iChip and the host processor and the modem are RS232-based. The connection between the host and the iChip can be (a) a full hardware connection to utilize hardware flow control, or (b) a reduced connection of RX, TX and GND to use only software flow control.

Connections between iChip and the iDEN modem should be full hardware interface, as iChip takes no resources from the host. This also allows iChip to have better control over the iDEN modem. Consult the reference design for a dial-up/wireless modem and the iChip of your choice found in the support section of the Connect One Web site.

Software Settings for Motorola iDEN Modems:

iDEN modems require only a few changes to iChip settings before attempting to perform Internet tasks.

1. No user name or password needs to be defined. In order to trick iChip to think that a user name or password exists in the configuration memory, put in a space between each apostrophe (") as follows:
 - 1a. USRN= " ". Therefore, AT+iUSRN=" ".
 - 1b. PWD= " ". Therefore, AT+iPWD=" ".
2. Set iChip for blind dialing: since iDEN modems are unable to detect dial tone, enter the command AT+iXRC=0
3. Set the correct modem type for iDEN: AT+iMTYP=0
4. Set the MIS string: the setting for the MIS string is the ATZ default initialization string provided in the modem. For example, for a Motorola i1000 Plus iDEN phone, this is AT&F&D2&C1X4S0=0S7=120Q0E1V1. Therefore, set AT+iMIS="AT&F&D2&C1X4S0=0S7=120Q0E1V1".
5. Set the ISP phone number: Set AT+iISP1= "S=2". This will initiate a dialup PAP session.
6. Set AT+iFLW=1 if you are using software flow control between iChip and the host processor, and hardware flow control between iChip and the modem. Set AT+iFLW=3 (full hardware flow control) if you use hardware control in both directions. Full hardware flow control is recommended.