

## Programming iChip to Internet-Enable a Siemens MC35 GPRS Modem

### Scope:

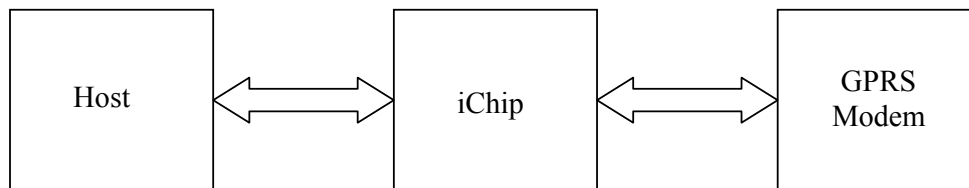
The scope of this document is to describe to users of Connect One's iChip™ Internet Controller™ how to interface commands and parameters using Connect One's AT+i™ Application Programming Interface into the Siemens MC35 GPRS modems.

### General:

iChip firmware has been supplemented to add specific features that support GPRS modems. Any host controller working with any operating system (or no operating system) can use iChip with a Siemens MC35 GPRS modem to configure flow control and baud rate, for example, and to support specific GPRS commands.

### Method of Operation:

Following is a general description of a typical way to connect iChip and a GPRS 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 GPRS 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 GPRS modem to dial the ISP or to use the existing connection with GPRS, 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 GPRS modem should be full hardware interface, as iChip takes no resources from the host. This also allows iChip to have better control over the GPRS modem.

**Software Settings for Siemens MC35 GPRS Modems:**

GPRS modems are very similar to dial-up modems, so only a few changes to iChip settings should be made before attempting to perform Internet tasks.

1. Setting iChip for blind dialing: since GPRS modems are unable to detect dial tone, enter the command `AT+iXRC=0`
2. Setting the correct modem type for GPRS : Set the command `AT+iMTYP=2`
3. Setting the APN number: the APN setting for AT+iMIS is assigned by the network operator, in the form of: “AT+CGDCONT=1,IP,proxy” where “proxy” is the APN, and needs to be replaced with the proxy settings assigned by your service provider. Typical value is "INTERNET". Sample MIS settings for APN number is: `AT+iMIS="CGDCONT=1,IP,INTERNET"`.
4. Setting the ISP phone number: In most cases, the ISP or service provider will not check the username and password, or will ask for a name that is identical for all users. Enter the command `AT+iISP1=*99***1#`