iChip / iChip LAN / iChip Plus CO210AG, CO710AG and CO110PC

Ver. 706B09

Release Notes

August 2005

Previous Version: 706B05

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New Features for Ver. 706B09

CO110 Firmware Update

Applicable to :	CO661AL			CO710AG	CO210AG	CO110PC
	S	L	D			
						*

iChip CO110 will now backup its unique serial number (allocated at Connect One during manufacturing) in a separate sector in its internal Flash. This addition was implemented in order to support a simple local firmware update conducted by the host processor, without the host needing to worry about losing the iChip's unique serial number. If the Serial number is erased during the firmware update process, iChip will automatically update it from the backup copy.

New Modem Type

Applicable to :	CO661AL			CO710AG	CO210AG	CO110PC
	S	L	D			
	*			*	*	*

A new modem type (MTYP=10) has been added to support the SiLABs World Modem. With this modem type iChip shall wait 300mSec after issuing the ATZ at the end of a modem session before issuing additional commands to the modem.

SerialNET Mode

Applicable to :	CO661AL			CO710AG	CO210AG	CO110PC
	S	L	D			
	*	*	*	*	*	*

A new SerialNET activation mode has been added, where iChip automatically goes online (as in the case of AT+i!SNMD), however if the HSRV parameter is defined, a socket is not open until data arrives on the local serial port. The command syntax for this new operational mode is:

AT+i@SNMD -or- AT+iSNMD=3

In this mode, when iChip terminates the SerialNET session as a result of detecting the Dissconnection String (DSTR) or hitting the inactivity timeout (IATO), iChip shall close the active socket and remain online without reopening a socket to the HSRV server until new data arrives on the local serial port.

If the SerialNET mode Listen port is defined (LPRT) iChip shall open a Listen socket a wait for a remote connection, during the idle period before data arrives on the local serial port.

Power Save Mode

Applicable to :	CO661AL			CO710AG	CO210AG	CO110PC
	S	L	D			
	*	*	*	*	*	*

The Power Save Enable (PSE) parameter has been enhanced. Previously the PSE parameter determined if iChip shall enter Power Save mode a after a fixed inactivity period set at 5 seconds when using an SMsC LAN controller or 500mSec otherwise. This enhancement allows assigning the PSE parameter with a customized inactivity timeout value in seconds. The syntax of the enhanced command is:

AT+iPSE=<*inactivity timeout*>, where *inactivity timeout* is in seconds

When *inactivity timeout* is set to 1 iChip shall use its current 500mSec as the inactivity timeout value. Acceptable PSE values are in the range [0..255]. iChip systems that use the SMsC LAN controller have a minimum inactivity timeout of 5 secs even if *inactivity timeout* contains a lower value.

Wireless LAN Authentication

Applicable to :	CO661AL			CO710AG	CO210AG	CO110PC
	S	L	D			
		*	*	*	*	

The authentication mode used by iChip's PRISM 3.0 driver has been enhanced. Previously iChip forced the PRISM 3.0 to use Shared Key Authentication. When attempting to associate with an Access Point that was configured for Open Authentication, iChip would fail to associate. Now, iChip's driver shall successfully use either authentication mode, depending on the Access Point configuration.

Bug Corrections for Ver. 706B09

AT+i Interface

Applicable to :	CO661AL			CO710AG	CO210AG	CO110PC
	S	L	D			
						*

1. (907) Previously, if the MTYP (Modem Type) parameter was set to CDPD in iChip CO110, iChip replied I/OK, even though CO110 does not support CDPD modems. This has been corrected. Now iChip shall reply with I/ERROR instead.

SerialNET

Applicable to :	CO661AL			CO710AG	CO210AG	CO110PC
	S	L	D			
				*	*	

1. (912) Previously, in version 706B05, when entering SerialNET always online mode (AT+i!SNMD) while connected with a Wireless LAN, iChip returned I/OFFLINE instead of I/ONLINE, even if there was no real link problem. This has been corrected, now iChip will allow 3 seconds for the wireless LAN chip-set to establish a connection with the Access Point before determining if a good link exists or not.

Applicable to :	CO661AL			CO710AG	CO210AG	CO110PC
	S	L	D			
	*	*	*	*	*	*

2. (913) Previously, in version 706B05, while iChip was applying the SNRD (SerialNET ReDial) delay before going back online after disconnecting as a result of DSTR (Disconnect String) or IATO (InActivity TimeOut), iChip erroneously responded with I/ERROR(504) or I/ERROR(503) to the '+++' Escape sequence. This has been corrected. Now iChip properly responds with I/ONLINE or I/DONE in this situation.
3. (949) Previously, when iChip was in SerialNET always online mode (AT+i!SNMD) and acting as server (LPRT defined), iChip firmware may have utilized excessive internal memory to the point that iChip could not accept anymore incoming data packets. This has been corrected. Now memory is utilized in a more efficient way, eliminating this problem.
4. (957) Previously, when iChip was in SerialNET and a socket was opened to iChip's LPRT port, host data was flushed when the '\n' character was detected, even if it was not defined as the flush character (FCHR). This has been corrected. Now the '\n' is treated as any other character and will not trigger a flush unless it is defined as the flush character.
5. Previously, when iChip entered or exited SerialNET mode it performed a software reset and delayed activity for 1 second. This has been changed. Now iChip shall delay for a shorter period if a socket was open and shall not delay at all if a socket was not open.

Remote Firmware Update

Applicable to :	CO661AL			CO710AG	CO210AG	CO110PC
	S	L	D			
	*	*	*	*		

1. (916) Previously, in version 706B05, two consecutive ‘I/DONE’ replies were sent to the host after a remote firmware update procedure. This has been corrected. Now only one reply is sent.

Always Online

Applicable to :	CO661AL			CO710AG	CO210AG	CO110PC
	S	L	D			
	*		*	*	*	*

1. (858) Previously, while iChip was in ‘Always Online Mode’ (TUP=2), and PFR (PING Frequency) was set to a value larger than 32767, after connecting, iChip sent PING requests continuously. This has been corrected. Now iChip will correctly interpret integer values larger than 32767.
2. (920) Previously, in version 706B05, when iChip detected a Link Lost situation while in ‘Always Online Mode’ (TUP=2), iChip erroneously returned (094) instead of I/ERROR(094). This has now been corrected.

Socket Interface

Applicable to :	CO661AL			CO710AG	CO210AG	CO110PC
	S	L	D			
	*	*	*	*	*	*

1. (879) Previously, when iChip renewed its IP address as a result of restoring a lost PPP connection or receiving a new DHCP lease, iChip did not update open UDP sockets with the new local IP address. As a result UDP packets may have been sent with the previous IP address. This has now been corrected.
2. (893) Previously, iChip may have buffered more than a critical amount of incoming data in its internal socket buffers, to the point that it could not complete an on-going AT+iSSND (Socket Send) command. This caused a deadlock, as the host needed to complete the socket send command before it could read incoming data. This has been corrected. Now iChip shall limit the incoming buffer size allocations, so that it may always still complete socket send commands.
3. (908) Previously, when the AT+iSRCV (socket Receive) command was issued along with the optional <max> parameter set to a value larger than 32767, iChip erroneously returned a meaningless reply (I/4294934528) and crashed. This has been corrected. Now iChip shall correctly interpret large values possibly in the <max> parameter.

IP Registration

Applicable to :	CO661AL			CO710AG	CO210AG	CO110PC
	S	L	D			
	*	*	*	*	*	*

1. (911) Previously, in version 706B05, when all registration methods failed following an AT+iUP=1 command, iChip erroneously returned I/ERROR(088) (*socket IP registration failed*). This has been corrected, now iChip properly returns I/ERROR(090).

2. (918) Previously, when TTO (TCP Time Out) was defined and the registration server defined in RRSV could not be resolved, iChip kept trying to resolve the server forever. This has been corrected. Now, iChip will apply all registration methods using default timeout constants and report I/ERROR if any error occurres.

Email Client

Applicable to :	CO661AL			CO710AG	CO210AG	CO110PC
	S	L	D			
						*

1. (914/917) Previously, iChip CO110 did not correctly handle errors that occurred during an AT+iEOA (Email Send) command. When errors, such as lost carrier, failed Internet session establishment or SMTP related errors occurred, iChip responded with an I/ERROR reply before the host had a chance to complete sending the Email message (up to the terminating '.'). This may have caused the iChip to crash. This has been corrected. Now iChip shall first receive all message data up to the terminating '.' before reporting the I/ERROR to the host and aborting the command.
2. Previously, when an incoming email contained a binary character 0xff (which can happen if the email was encoded using an 8bit encoding), iChip rejected the email and returned an error code (079). Now iChip will accept 0xff without error, thus allowing binary-encoded Email messages.

Power Save Mode

Applicable to :	CO661AL			CO710AG	CO210AG	CO110PC
	S	L	D			
	*	*	*	*	*	*

1. (838) Previously, when iChip retrieved Network time, it did not properly keep track of time during power save mode. As a result, AT+iRP8 returned a wrong time indication after exiting power save mode and before a new time reading was retrieved from the network. This has been corrected. Now iChip correctly maintains time during power save.

Modem Interface

Applicable to :	CO661AL			CO710AG	CO210AG	CO110PC
	S	L	D			
	*		*	*	*	*

1. (915) Previously, when iChip was configured for Modem Hardware flow control and a modem was not connected, the CTSM signal usually indicated to stop sending data to the (nonexistent) modem. This caused deadlock situations if iChip needed to communicate to the modem in transparent mode, to establish an Internet connection or to change the ECHO mode (AT+iEn command). This has been corrected. Now iChip shall not wait for CTSM to clear for more than WTC (Wait Time Constant – Modem register S7) before aborting and responding to the host that a modem does not exist.

100BaseT LAN Interface

Applicable to :	CO661AL			CO710AG	CO210AG	CO110PC
	S	L	D			
		*	*	*	*	

Previously, when iChip restored normal operation after being in power save condition, iChip allotted 5 seconds for the LAN controller to recover. This recovery time was not sufficient when connected to 100BaseT LAN networks and caused some adverse behavior, such as iChip reporting a failed LAN link. This has been corrected. The Power Save recovery procedure has been enhanced to complete properly within the allotted 5 seconds.