Microchip/ZeroG SDK Errata

Microchip TCP/IP Stack v5.20 and ZeroG Driver 1.5.2.7

1. Release:

Microchip SDK Version	TCP/IP Stack v5.20
MCUs	PIC18, PIC24, dsPIC, PIC32
Target Boards	PICDEM.net 2, Explorer 16
ZeroG Driver Version	1.5.2.7
Date	11/10/2009

2. Errata

2.1 No CLI command to define the Listen Interval when ZeroG goes into Sleep Mode (PS-Poll)

The sleep interval is currently a constant value, 4. If the access point's Beacon interval is 100 ms, ZeroG device would wake up every 400 ms to check for unicast frames which may have been buffered by the access point.

Work-around: None.

Disposition: Will be new CLI command Driver v1.5.3 (next full release).

2.2 Not able to handle fragmented frames sent from the access point

Fragmentation Threshold is a configurable parameter on the access point. The default setting is usually 2346 bytes. The range is usually from 256 to 2346 bytes. It specifies the maximum packet size for access point transmission to any station. Packets bigger than the fragmentation threshold are fragmented into multiple packets, and are reassembled by the receiving stations.

This fragmentation and reassembly process is handled at the 802.11 layer, and is independent of other possible fragmentation/reassembly processes performed at higher layers.

Work-around: set access point's fragmentation threshold to 2346-byte.

Disposition: TBD

2.3 Iperf client session connecting to the local node causes a system hang

The "-c" option of iperf specifies which remote iperf server to connect to. If you specify the local station as the "remote" iperf server, the system would hang. This is a not-supported procedure.

Work-around: do not perform loop-back testing with iperf.

Disposition: No plan to support.

2.4 Power-save mode displayed as "enabled" in adhoc mode

The CLI command *iwconfig* displays "pwrsave" and "dtim" status. This status has no meaning when the station is in adhoc mode.

Work-around: not needed.

Disposition: No change planned.

2.5 Station does not connect to an access point with hidden SSID

An access point may be configured to not to broadcast its SSID. ZeroG device has problems connecting to some access points configured with this setting. ZeroG is investigating this issue.

Work-around: always enable "wireless SSID broadcast" at the access point.

Disposition: TBD.

2.6 DHCP server may send offers at higher than 2 Mbps data rate

Some access points may have built-in DHCP servers that send DHCP OFFER messages at 5.5 Mbps or higher data rates. ZeroG device can only transmit and receive at either 1 or 2 Mbps. DHCP OFFER transmitted at higher data rates can not be received by ZeroG device. When this happens, a station may get connected to the access point, but fails to acquire a dynamic IP.

Work-around: Force the access point to transmit all packets at 1 or 2 Mbps data rate. If this is not possible configure the device for a static IP address.

Disposition: Device will request a DHCP response as a Unicast packet. However some Access Points ignore the Unicast request and send the DHCP response as a Broadcast at rates higher than 2 Mbps in which case the device does not get a valid IP address.

2.7 Access Points may broadcast ARP packets at rates higher than 2 Mbps

Some access points may send Address Resolution Protocol packets at rates higher than 2Mbps, which ZeroG devices cannot receive. As a result, the IP to MAC address mapping fails and renders the device unable to receive upper layer traffic from the AP or the LAN side of the AP

Work Around: Force the access point to transmit all packets at 1 or 2 Mbps data rate.

Disposition: A workaround is available which solves the problem in about 70% of cases, where a gratuitous ARP sent from the ZeroG device updates the ARP cache on systems that are trying to communicate with the ZeroG device

2.8 Scanning in AdHoc Mode causes device to assert

When doing a dynamic scan in adhoc mode, the chip will end up asserting. Dynamic scan when connected to an infrastructure network does not exhibit this problem.

Work-around: Do not perform a dynamic scan in adhoc mode. The device can still scan in infrastructure mode or in idle mode before it joins the adhoc BSS

Disposition: To be fixed in future releases (March 2010)

2.9 Device fails to continue a AdHoc network in a particular scenario

When the ZeroG device joins an existing adhoc network and (at a later time) all other devices drop off the network, the ZeroG device is expected to maintain the adhoc network so other devices can join. The ZeroG device fails to meet this requirement and as a result the adhoc network gets discontinued

Work-around: Not yet available.

Disposition: To be fixed in future releases (March 2010)

2.10 Device sends out PS-Poll messages with Power Management bit set

The PS-Poll message is used to indicate to the Access Point that the device is ready to receive data that was buffered for it while the device was in a sleep/power save state. If the Power Management bit in this message is set, an access point can interpret that the device is going back to sleep, hence it should not send any buffered packets to the device. This will eventually cause packets to get dropped

Work-around: Not yet available

Disposition: To be fixed in future releases (March 2010)

2.11 Device can receive its own broadcast message

A mechanism is required for the device to filter out broadcast messages that it sends out and not pass it up the stack. This is not currently implemented

Work-around: Not yet available

Disposition: To be fixed in future releases ()