

ADX Firmware Version History

Full Version 2.5.0 - 2/26/13

1. Added watchdog feeds to prevent reboot when using the PC Configuration Utility to send Query All command.

Full Version 2.3.2 - 1/15/2013

1. 16x16 version required firmware update because of servo change.

Full Version 2.3.1 - 1/9/2013

1. Trigger level entry over serial now accepts 3 characters (20-200).

Full Version 2.3.0 - 12/10/2012

1. Switching chips now connect output 9 to input 1 on bootup (to drive the servo).

Full Version 2.2.0* - 6/28/2012

1. Reduced delays in import file routine to prevent the queue from overflow.
2. Changed the import file display so that the commands are displayed as they are imported.
3. To increase error tolerance in bootup data loading routine, updated the data load procedure to retry 3 times in case of a page read failure.
4. Combined firmware version and firmware update menu items.
5. Added three new serial commands.
 - a. [TRIGMODE#] (0 off, 1 on, 2 serial) - repurpose the back panel wired IR output as an amplifier trigger. Off mode will enable wired IR. On mode will set the trigger high in the presence of audio at a specified level for a specified period of time. Serial mode sends out serial messages to create granularity in the audio level detection; the global trigger output works the same, but serial messages on a per zone level are sent out to break the trigger response down by zone.
 - b. [TRIGLEVEL##] (20-200 mvRMS) - set the level of audio required for audio detection.
 - c. [TRIGTIME##] (5, 10, 15 minutes) - set the duration of time that audio must not be detected in order for the trigger output to be turned off.
6. Added a menu item for setting the wired IR/trigger mode, time, and level in the menu.
7. Held the keyboard chip in reset during saving and loading to the EEPROM, and re-initialized it upon completion. Should help with some random lock ups, reboots, and losing of settings.
8. Factory reset now sets all outputs to -40 dB by default and also mutes all outputs.

*The data format has changed; all settings saved in the unit will be lost when updating to the new version.

Full Version 2.1.0 - 4/2/2012

1. Corrected a bug with IR where front and back panel specification of the zone would affect one another.
2. Corrected a bug where popping during switching could occur when using the IR remote.
3. Added an additional DSP mode to the unit - mode 5. This mode is a Butterworth second order high-pass filter with a default crossover frequency of 100 Hz. Use the mode command [EO##M5] to switch to the high-pass filter.
4. Added a new serial command [EO##HP&&&&] to the command list. This command sets the high-pass filter crossover frequency. Valid numbers are 1-20,000 Hz.
5. Modified the tone menu to include the high-pass frequency mode.

Full Version 2.0.1 - 11/18/2011

1. Added a manufacturing level command [mfgrails] to display the rail voltages detected by the system controller.
2. Changed the volume adjustment menu so that if you adjust the volume below -80 dB, it will mute the channel.

Full Version and Bootloader 2.0.0 - 11/4/2011

1. Rewrote the main code removing all tasks except for those which are completely necessary; the only ones left are the telnet server/client, main task, USB task, and Ethernet task. In addition, removed all dependance on the MQX OS as was possible, removing lightweight events and message queue handling. The main queue now uses a queue written and tested in previous products.
2. Added factory default settings to the menu.
3. Added messages that appear over serial for telnet client connection and disconnection; also added a telnet client connection message on the clients themselves.
4. Replaced the ADAU1702 DSP code with a new version that will simply design changes in the future. In addition, this changed various properties:
 - a. The slew rate of the volume adjustment has been changed. There is now a more perceptible ramping when you change volume levels.
 - b. Mute has been changed from adjusting volume down to -127 to a full output mute.
 - c. Mode control has been changed to simplify processing; now a multiplexor chooses mode in the DSP rather than having everything strung together and having to disable individual elements.

- d. A low pass filter mode as added, which would allow one to hook up a subwoofer to a particular output without needing a crossover. This mode "mono-izes" the stereo input into a single signal, low pass filters it at the specified frequency, and outputs the signal on both outputs. Added a serial command to enable setting of this frequency, [Eo###LP###]. The limits for the LPF are 40-240 Hz with a default setting of 100 Hz. The low pass filter setting now appears in the [QX], [QXSB], and [QO###] commands.
 - e. The mode command has a new mode [Eo###M4], which is the low-pass mode.
 - f. The volume adjustment screen now displays the detected output level in a small meter. The range for the meter is -20 dB minimum to 0 dB maximum.
5. Added serial command [VG###R###] to ramp a group volume to the designated level.
 6. Added serial command [VG##U] to increase a group volume 1 dB from their current output levels; for example, if zone 1 and zone 2 are in a group, and zone one is set to -10 dB and zone 2 to -20 dB, this command would put them at -9 dB and -19 dB respectfully.
 7. Added serial command [VG##D] to decrease a group volume (similar to the up command).
 8. Added serial command [VMG##] to mute a group.
 9. Added serial command [VUMG##] to unmute a group.
 10. Added serial command [VMTG##] to toggle muting on a group.
 11. Changed the way the front panel / back panel IR responds with respect to entering the zone number. Now once you have entered the zone number using the keypad, you are free to hit any source, mute, volume up, and volume down keys in any sequence without entering the zone again. Once you have entered one of these commands, typing in a new zone number will reset the value.
 12. Added the ability to have additional discreet IR codes to help installers eliminate the need for IR control macros. There are no discrete commands for:
 - a. Connecting zones to sources
 - b. Muting on/off/toggle zones
 - c. Volume up/down in a zone
 - d. Balance left/right/center in a zone
 - e. Bass up/down/flat in a zone
 - f. Treble up/down/flat in a zone
 - g. Connecting a group to a source
 - h. Group volume up/down
 - i. Group mute on/off/toggle
 13. Changed the way the Ethernet settings are handled. Now it is possible to change any Ethernet settings from telnet or serial without losing the connection; the setting changes are saved but are not acted upon until a power cycle or a commit command has been issued. Modified the [EQ] command to report if changes have not been committed.
 14. Added a serial command [EC] which commits Ethernet setting changes. This is so it is possible to set a static IP/gateway/network mask over telnet without being disconnected. Simply set all the settings as desired, and then issue the commit command or power cycle the unit (after saving the settings) to cause the changes

to occur.

15. Switched the default serial baud rate to 9600 baud. Also remove the ability to change

the serial baud rate from the menu, and the baud rate change command.

16. Backup watchdog support is now added back. Previously, the watchdog will cause the system to freeze when it locks up and require a power cycle to continue; now units with a small hardware change (and those lucky to have sufficient capacitance in the oscillator loop) will reboot properly.

17. Removed the three second delay before automatically rebooting to perform the firmware

update. Also remove the 'press knob to reboot' messages from the bootloader and made

it automatically reboot.

18. Removed unnecessary button pushes from the import/export/firmware update menu selections; they are now more streamlined. They also update real-time when the USB drive is removed or inserted.

19. Added a serial command [VO###F#] which fixes the output volume of a zone to 0 dB; for

example, [VO1F1] will fix the volume of output zone 1 to 0 dB and not allow IR, serial, or telnet commands to change it. To disable, simply issue [VO###F0].

20. Modified the volume adjustment menu screen to allow fixing the volume level by rotating

to the right past 0 dB. The dB reading will specify "FX" to show that a zone is fixed.

Also added on the bottom line of the menu a bar while adjusting the output level, or a fixed indicator when in fixed mode.

21. Rewrote DHCP detection to be 'non-blocking' which was causing reboots if DHCP took more

than 5 seconds to connect.

Full Version 1.3.0 - 9/7/2011

1. Added a serial command [QEO%d] to query the ZQ eq band settings for a zone. Note that the values will be returned regardless of the DSP mode; for instance, if the zone is in TONE or FLAT mode, the ZQ bands could be set to any value as they are not currently being used.

2. Removed the storage_task, which auto-saved the state of the system. This is now done inside the main queue task, which will free some memory and also force the save to only occur while the queue is not busy.

3. Fixed a menu issue where the selection screen would not update to show a new source selection unless the cursor was on the top line.

4. Fixed an issue whereby front panel IR lock would not lock upon reboot.

5. Made the default setting for IR lock to be on (front panel IR disabled).

6. Increased the stack size of the watchdog and main tasks. This helps to prevent some lock up issues while using the iPad control app.

Full Version 1.2.0 - 7/8/2011

1. Changed the balance commands to be [bo###l##] and [bo###r##] to make them more intuitive. To set the balance of output 1 to the right 3 dB, use [bo1r3]. Either [bo###l0] or [bo###r0] will center the balance.
2. Changed the balance menu to reflect the above.
3. Changed the group menu so that the source selection starts on the source that most of the members currently have selected. If they have not all selected the same source, the source number line is augmented with an asterisk.
4. Changed the firmware update process; now, in the menu, once the firmware update is selected the unit reboots automatically and updates the system. Makes the process more of a single step. Requires the new version of the bootloader to work.
5. Changed the menu graphic equalizer adjustment screen to make adjusting the levels a more stream-lined process.
6. Changed the front panel IR lock control to be more obvious as to what you are adjusting; rather than turning the lock on or off, now the IR is enabled or disabled.
7. The telnet server has been rewritten to allow for multiple client connections; previously, it was limited to 1. Now 2 clients can be connected at the same time. Note that individual client connections have a time out of 15 minutes; if a client crashes and does not close the connection properly (sending an EOF) that connection will remain busy until it times out.
8. Changed the firmware version screen to make it more clear what was being displayed.
9. Added serial command [vxr##] to set the volume of all volume adjustable zones at once. This command is also now accessible from the front panel volume adjustment screen by selecting the 'all zone' selection in between the final and first adjustable zones.
10. Adjusted the delays between checking for received serial and telnet data; a relatively long delay (200 ms) is used continually; once data has been received, the delay is shortened (1 ms) for a period of time (100 ms) to help handle large amounts of commands sent from non-human sources.
11. Changed the way the DSP frequency response characteristics are handled. Previously, the tone and EQ could be used at the same time. Now, each zone has a DSP mode setting - disabled, tone, ZQ, and preset. The disabled mode turns off the EQ and tone controls. Tone mode allows the bass and tone levels to be set. Zq mode allows setting specific eq bands (no tone control). Preset mode allows the selection of one of ten presets, which can be named, and set up for quick access. Note that EQ presets are not designed to be adjusted on the fly due to logistics issues, so if you adjust a preset while a zone has selected it, you will need to select another preset and then return to the changed preset to hear the difference.
12. Added serial command [EO###M#] to set the DSP mode of a particular zone.

Modes

are as follows:

0 - EQ/Tone disabled (set flat)

1 - ZQ mode. Custom 10 band equalizer, with setting saved per zone.

- 2 - Preset mode. Choose one of 10 preset 10-band equalizer settings.
- 3 - Tone mode. Adjust bass or treble alone, 10-band eq disabled (flat).
- 13. Added serial command [EO###P#] to set the EQ preset of a zone.
- 14. Added serial command [EP##B##L##] to set an EP preset band level.
- 15. Added serial command [NEP##"@@@@@@@@@@@@@@@@"] to name an EQ preset.
- 16. Added serial command [QEP##] to query an EQ preset.
- 17. Redesigned menus for a more consistent feel.
- 18. DHCP and IP address settings now cannot be changed while a telnet client is connected.
- 19. The favorites menu now details the number of members for each group.
- 20. Added serial command [QVO###] to query the output volume of a particular zone.
- 21. Added serial command [QVMO###] to query the mute status of a zone.
- 22. Added serial command [QCO###] to query the connected source of a zone.
- 23. Changed the default serial baud rate to 115200 baud.
- 24. Added serial command [BO###LU] and [BO###RU] to adjust the balance to the left or right one increment.
- 25. Added serial command [EO###B##U] and [EO###B##D] to adjust the level of an EQ band in ZQ mode one increment up or down.
- 26. Added serial command [EP##B##U] and [EP##B##D] to adjust the level of an EQ preset in preset mode one increment up or down.
- 27. Added serial command [EO###STP##] to save the current ZQ 10 band settings of a zone into an EQ preset. This makes creating a preset easier, because you can adjust the zone's EQ on the fly, and then save it to the preset.
- 28. Added serial command [To###BD], [TO###BU], [TO###TU], [TO###TD] to adjust the bass and treble tone controls one increment up or down in tone mode.

Bootloader Version 1.2.0 - 7/8/2011

- 1. Added the ability for the bootloader to check if it should automatically jump into the main code, firmware update automatically, or wait for file selection in other cases. It also detects if the knob is held down on POR for emergency purposes so that firmware can be reloaded if the main code is damaged.

Full Version 1.0.1b - 4/15/2011

- 1. Added volume up [vo##u], volume down [vo##d], and mute toggle [vmto##] to the serial command set.
- 2. Added serial output `!(ADX STATE SET)!` when the state is implemented on boot.
- 3. Added IR Lock menu item to allow the front panel IR to be locked out without using a serial command.
- 4. Corrected an error in generating the graphic equalizer digital filter coefficients which resulted in a larger filter Q.
- 5. Sped up the import file procedure.
- 6. Added front panel wake up on receipt of front panel IR.

7. Addressed an issue with front panel encoder and keyboard lock ups during 'extreme' usage (pressing all at once very fast).
8. Implemented a software watchdog to address the backup watchdog lockup issues; removed the backup watchdog in cases where the bootloader is not version 1.0.0.

Bootloader Version 1.0.1 - 4/15/2011

Note that the bootloader is not field upgradeable.

1. Removed the backup watchdog.

Full Version 1.0.0 - 2/9/2011

1. Initial release of 1.0.0 for the main card firmware and the bootloader.