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DEPARTMENT Engineering	CREATED BY: F. Pflaum	EFFECTIVE DATE December 6, 2010	APPROVED BY: L. Brown		

## AP20 Software Updates

This document describes the latest software update for the AP20. Software updates can be easily done on the AP20 through an internet connection, or through a USB memory stick.

Software updates usually contain a variety of improvements, new features, and or bug fixes. In some cases updates may affect the setup and operation. Please read the summary of updates for this release before updating the AP20.

## How to Check if an Update is Required

The current AP20 software version may be found by selecting Menu → System → System Info. The current version is displayed in the yellow box on the upper left of the screen. If your AP20 has an earlier software version it is highly recommended that you update to this software version.

Current version: 102.00  
Build Date Nov 1 2010 18:53:21

Check with Datasat Digital Entertainment Technical support at [www.datasatdigital.com](http://www.datasatdigital.com) for the latest update that will include fixes for known issues and feature enhancements.


## Software Update Procedure

The easiest way to update the AP20 is through the network. However, if an error occurs while downloading the update, then there may be a network security firewall at your facility that is preventing access to the Datasat web site.

If this or any other reason prevents the network update from working, then see the **Updating using a USB device** section for an alternate update method.

### Updating to V1.02.00 using the network

1. If updating from V1.00.01, record any channel levels that have been setup with the AP20.
2. Select Menu → Network to view the network screen. Verify the “Connection is UP” status at the bottom of the network screen.
3. Select the update menu screen by entering Menu → System → Update System Software.
4. Select the radio button labeled “Update from the Network”. Do not change the text under “Update URL”. It should be left as “<default update server>”.
5. Select the “Update” button near the bottom of the screen.
6. The AP20 should immediately start downloading the update file.
7. The AP20 will reset to complete the update. You will see the Home screen once the update is completed.
8. Check the **Menu → System → System Info** screen and verify that V1.02.00 is installed.
9. Reset the channel levels values that were recorded in step 1. The level has to be set for each EQ setup.
10. Power cycle the AP20.

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### Updating to V1.02.00 using a USB Device

1. If updating from V1.00.01, record any channel levels that have been setup with the AP20.
2. Download the AP20 update file and copy it to a USB memory device in the root directory. (check with DataSat Digital Entertainment Technical support for instructions).
3. Connect the USB device to the USB connector on the front of the AP20.
4. Select the update menu screen by entering Menu → System → Update System Software.
5. Select the radio button labeled “Update from USB Device”.
6. Select the “Update” button near the bottom of the screen.
7. The AP20 should begin mounting the USB file system and then start downloading the update file.
8. The AP20 will reset to complete the update. You will see the Home screen once the update is completed.
9. Check the **Menu → System → System Info** screen and verify that V1.02.00 is installed.
10. Reset the channel levels values that were recorded in step 1. The level has to be set for each EQ setup.
11. Power cycle the AP20.


### Updates for V1.02.00 Software Release

This section describes any new features, enhancements and bug fixes that are included in V1.02.00 since the previous software version V1.01.03.

1. **Dolby Digital Decoder.** Incorporates the Dolby Digital decoding on any HDMI, S/PDIF TosLink, or S/PDIF coax inputs. When a Dolby Digital stream is detected the AP20 automatically decodes the input and places the audio onto the first 6 internal AP20 channels. The internal channel assignment is Ch1-Left, Ch2-Right, Ch3-Center, Ch4-LFE, Ch5-Left Surround and Ch6-Right Surround.
2. **Optical Film Card.** This software version has setup and configuration menus for the AP20 optical film card, which is an optional card available from DataSat Digital Entertainment that allows it to process audio for 35mm film projectors with a standard optical sound head. Once the AP20 has the optical film card has been installed you can create any format with the optical film card as an input source. The format option menus can be used to select between mono, A, or SR film formats, as well as matrix decoder and optical bass extension options.

The film Setup menus are accessed by first entering the Format Options screen, then selecting the “Setup” navigation button on the bottom of the screen. The optical film setup menus include optical gain adjustment, slit loss EQ, azimuth display and optical bass extension parameters. The Optical film setup parameters are a global configuration so they can be set once and apply to all optical card formats. See TN-H457 technical notice for additional details.

3. **Automation configuration.** All of the screens used for configuring the automation were revised to improve the automation setup process for ease and speed. See the AP20 V1.2 manual for details on operating the new menus. In addition to the improved look, these features were added:
  - The available actions that can be defined within a macro has been expanded to include mute/unmute, and outputting a network command (sending TCP data to a specified IP address and port).


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- Events and automation buttons are no longer limited to triggering a macro, but can directly trigger a single action.
  - The GPIO pin numbers have been included on the automation test screen for easy reference.
4. Updates for **1/3 Octave EQ** and **Parametric EQ** screens
    - Added a next/previous channel selection button to the third octave EQ screen and Parametric EQ screen to allow a simplified method for sequencing through different channels.
    - Buttons on the navigation bar were changed to allow quick access to the levels menu or the Copy EQ menu.
    - The configuration field for the X-Curve on the RTA was moved to the RTA options window.
  5. Updates for the **Audio Levels** screen.
    - Added an option for multi-channel pink noise.
    - When multi-channel pink noise is enabled pink noise can be enabled on multiple channels.
    - When multi-channel pink noise is disabled, selecting pink noise on one channel automatically disables pink noise from the other channels. The gain field for the pink noise channel is automatically selected to simplify the adjusting the gain after selecting the pink noise.
    - The navigation buttons on the levels screen allows you to go directly to the third octave EQ screen, or the parametric EQ screen.
    - A direct link to the audio levels screen has been added to the **Formats** screen. It is no longer in the **Channel Profiles** setup screen.
  6. **Channel Delays.** The fields for setting individual delays for the internal AP20 channels have been moved out of the levels screen. The channel delay is now set in a new screen labeled “Channel Delays” in the channel profile setup screen.
  7. **Format Options.** Format options for surround channel offset and rear channel support have been added. Format options, which are apply only to the specific format, are accessed by first selecting the format, then navigating to **System->Formats** and **selecting the Format Options** button.
    - **Surround offset level** was added as an option for each format in order to offset the surround channel level from -6dB to +6dB.
    - **Nonsync Level and Routing.** This format option only for Nonsync inputs was modified to add the Matrix Decoder option. The gain adjustment was also changed so that only the gain adjustment fields for the selected nonsync input (1 or 2) are displayed on the menu.
    - **Extended Surround Options.** This screen was added to Nonsync, Mic, and Optical Film card inputs to allow the surround channels to be copied to the Rear Surround channels (Ch7 and Ch8). The option to matrix decode the surround channels to the Rear Surround channels is now available only for 8-channel analog input and 8/16 channel digital inputs.
    - **Mic Level and Routing.** This menu was modified for improving the looks and adding a graphical description.
    - **HDMI Options.** This option is available for HDMI inputs only.

The speaker configuration can be set to either 5.1 or 7.1. If the 7.1 speaker configuration is selected and Dolby EX content is being played then the EX channel is routed to internal AP20 channels 7 and 8. Otherwise, if the 5.1 speaker configuration is selected or if standard Dolby 5.1 content, channels 7 and 8 are silent.

A second option allows the use of a phantom center channel.

8. **View Log File.** This screen was improved for speed. The scroll operation now works using the control knob.

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9. **Identify.** There are a series of text fields that can be entered into the AP20 that is intended to be used for identification of the AP20.
  - Three text fields are added in the **Systems->Access Control** screen. These are labeled “Screen”, “Theater”, and “Circuit”.
  - The text entered in the “Screen” field will be displayed at the bottom of the home screen above the navigation menu. This information can be useful for verification of the correct AP20 when connecting through VNC.
  - The Screen, Theater, and Circuit information may be used by a remote theater management system or other custom application software.
10. The touch-screen calibration parameters are no longer copied with the Master configuration to avoid loading the wrong calibration file on an AP20.

### Updates for V1.01.03 Software Release

This section describes any new features, enhancements and bug fixes that are included in V1.01.03 since the previous software version V1.01.00.

1. Fixed a rare occurrence of channel pairs being swapped.
2. Fixed a problem with the program watchdog that could cause the program to reset unnecessarily.
3. Added the exclamation (!) on the keyboard for entering the setup password.
4. Fixed a bug with LCD touch screen driver that could on occasion select the incorrect button.
5. Fixed problem with manufacturing test missing certain errors in the voltage readings.
6. Fixed an issue with EDID speaker allocation mapping when using PCM through HDMI.
7. Modified the DSP firmware for compatibility with new H335 boards from manufacturing.
8. Fixed a problem that occurred when playing pink noise within the RTA screen and changing the “Input” selection to “Line Out”.
9. Fixed a problem that occurred when using VNC connected to the AP20 and using the computer keyboard to enter data in a text box.
10. Fixed a bug with scroll on the “Format Change” list box, which was located in the Automation Events screen when using “Edit Event” popup window.
11. Modified the EQ button so that it will not appear green whenever the EQ is disabled.
12. When Dirac processing was enabled, all channels that have not been given Dirac coefficients are now set to pass the audio. Previously all non-Dirac channels were mute.


### Updates for V1.01.00 Software Release

This section describes any new features, enhancements and bug fixes that are included in V1.01.00 since the initial V1.00.01 software version.

Additional information for some items is included in the AP20 Installation and Operating Guide V1.1.

#### Features new to V1.01.00

1. Added a screen to Copy or Clear EQ settings from/to any specified channels. The entry to this screen is at Menu → Formats → EQ Setup → Copy/Clear EQ.  
For more information see the **Copy/Clear EQ** section in the AP20 Installation and Operating Guide.
2. Added format option for playing 5.1 soundtracks in a 7.1 configuration. This connects the Left Surround to the Back Left Surround speakers, and same for the right surrounds.


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3. Added code for Serial automation function.  
For more information see the **Serial Events** section in the AP20 Installation and Operating Guide.
4. Revised the crossover setup screen. Each output channel may now be routed from any of the 16 input channels with an optional high pass and/or low pass filter applied.  
For more information on see **Crossovers** section in the AP20 Installation and Operating Guide.
5. Added a Monitor Mix window that allows the monitor channels to be individually muted.  
For more information see the **Booth Monitor Volume** section in the AP20 Installation and Operating Guide.
6. Revisions to the Audio Levels screen
  - a. Added pink noise buttons on the levels page to allow playing pink noise on multiple channels.
  - b. Channel delay now has 1ms resolution.
  - c. Added additional entry to the Audio Levels screen from the fourth button on the Format screen.
  - d. Added Master fader setting and mute control.
  - e. Audio levels are now stored with the EQ setup file instead of the channel profile setup. This allows the levels to be set to correctly match for the EQ setup.

**Note:** Due to this change, when updating from V1.00.01 to V1.01.00 the old levels will be lost. They must be reentered manually as described in the Software Update Procedure section of these notes.
7. A “startup” format configuration item was added to the Format page. The startup format defines the format that the AP20 will switch to upon power-up. Along with any valid format, the startup can be defined as “Last Format” which sets the startup format automatically to the last format selected before turning off the AP20.

### Improvements/Bug Fixes for V1.01.00

1. Improvements to the Home screen.
  - a. Created larger format buttons. The number of format buttons on the Home screen is now eight.
  - b. Added current operating parameters on the top of the screen. This includes the current format, EQ set, channel profile, source, Dirac Live configuration, and the format fader value (only when the Format Fader option is enabled).
2. Revised the network screen to simplify the setup. The network display now also displays the connection status at the bottom of the screen (connection is Up/Down).  
For more information see the Network section in the AP20 Installation and Operating Guide.
3. Added a back button on the navigation bar for all setup menus. Pressing the back button goes back to the previous screen, for up to 20 screens.
4. Changed the title of the “Audio Profile Setup” to “Channel Profile”.
5. Updated the USB Download screen for clearer user interpretation. The functions remain the same.
6. Added text to display the current format, EQ Setup and Channel Profile in various setup screens.
7. Several keyboard enhancements including adding a Cancel button to the keyboard and adding the ability to include line breaks in creating manual automation buttons.
8. Drop down list is now used to select macros when assigning Automation Buttons. Word break and line break are now allowed on manual automation buttons.
9. Changing the format names will now change the references in the automation macros so that they continue working as previously defined. Changing the EQ Set names or Channel Profile names changes their references in the Formats so they continue to work as previously defined.
10. Changes to the RTA/EQ screen.
  - a. When the RTA “Input” selection is set for “Line Out” the RTA displays the output for the selected channel number. The channel name button identifies the channel using the input channel name followed by the output channel crossover ID.
  - b. The continuous/manual setting for the RTA is now saved in the configuration file.
  - c. Added text on the RTA display to show the current Format and EQ.
  - d. Added text on the RTA display to show the current Master Fader value.

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11. The display update speed was improved on various screens.
12. Fixed issue with LFE and Center channels being swapped when playing HDMI content.

## AP20 Known Issues

1. Clicks may be heard if you are playing audio while at the same time modifying the global or channel delay.
2. The HDMI input accepts only PCM or Dolby Digital audio stream. The DTS-HD Master Audio cannot be decoded at this time.
3. When using the HDMI input the VU meters may fail to display. Audio and video are still functional when this occurs.
4. Matrix decoding for nonsync1/2 inputs does not currently operate. This function will be added on the next software release.
5. The matrix decoder for surround channels does not currently operate. This function will be added on a future software release.
6. The AP20 screen may light up after the AP20 is powered off. This may occur if the screensaver is set to "Dim Screen", and the AP20 is turned off using the front panel pushbutton switch. The LCD backlight may turn on after the dim screen timeout period and display the last screen that was active when it was turned off. When this occurs the screen is not functional and all audio is disabled. The unit can be turned on as normal from the power switch.

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## Datasat Digital Entertainment Technical Support

<b>Datasat Digital Entertainment Headquarters</b> Email: <a href="mailto:techsupport@datasatdigital.com">techsupport@datasatdigital.com</a> Tel outside USA: +1.818.401.4253 Tel in USA: 888.428.2268 Fax: +1.866.448.6802 <a href="http://www.datasatdigital.com">www.datasatdigital.com</a>	<b>Datasat Digital Entertainment Europe</b> Email: <a href="mailto:eusupport@datasatdigital.com">eusupport@datasatdigital.com</a> Tel: +44 (0) 118.934.9199 Fax: +44 (0) 118.934.9198 <a href="http://www.datasatdigital.com">www.datasatdigital.com</a>
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