

ControlSpace® Designer v3.1 Release Notes

This release of ControlSpace Designer adds several new features; most notably support for the new PowerMatch™ CobraNet™ expansion card, and also fixes a number of known and reported issues. In addition it utilizes a new USB driver for connection to PowerMatch™ PM8500/N Configurable Multi-Channel Power Amplifiers via USB. The new USB driver provides support for the Windows XP, and Windows 7 operating systems running on x86 or 64-bit processors.

SETUP/INSTALLATION NOTES

- This release includes updated firmware for the PM8500/N (v1.150) and ESP-88 (v3.090). No update to CC-64 or CC-16 firmware is required.
- ControlSpace Designer requires Microsoft® .NET Framework 3.5 to be installed for Windows XP and Windows Vista®, [available for download here](#). Windows 7 includes .NET Framework 3.5 so no additional installation is required.

NEW FEATURES

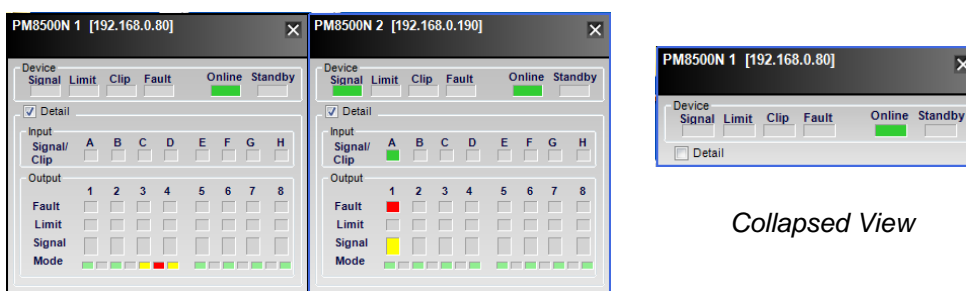
1. Support for PM CobraNet card

This release adds support for the new CobraNet expansion card for the PowerMatch™ PM8500/N amplifier. This new card type is detected automatically when connecting to hardware with the card fitted or can be added 'offline' via the PM8500/N properties window.

PM CobraNet cards are pre-configured with the receive bundle set to '100' and the first ESP CobraNet transmit block added to the project will also default to bundle '100' allowing simple out-of-the-box operation from one ESP-88/00 to one or more PM8500/Ns. For more advanced configurations the bundle assignment for the PM CobraNet card can be changed using the CobraNet Discovery utility. Further information will be provided in an update to the 'Using CobraNet with ControlSpace' tech note available soon.

2. New PM8500/N Status Panels

To allow a larger number of PowerMatch PM8500N amplifiers to be monitored simultaneously a new 'Status Panel' is available. The panels are available whilst online and can be tiled, or displayed in a minimized view to make best use of available screen space.



Collapsed View

3. PM8500/N USB connection lock

Unauthorized users can now be restricted from connecting to the PM8500/N via USB through an extension of the front panel lock. When the front panel lock is active the code will be required in order to establish a connection to the amplifier via USB. For networked systems the existing password security is unchanged.

4. Expanded serial protocol for PM8500N

A number of device specific serial commands have been added for the PM8500N including:

- External query or unsolicited notification of alarm and fault conditions
- Clearing alarm conditions
- Query of output configuration
- Query of input and output levels

Full details will be available in an updated Serial Protocol Document (v3.1) available soon.

5. CC-16/CC-64 user interface improvements

A number of improvements have been made to the behavior of CC-16 and CC-64 user interfaces including the addition of a new 'Off at Minimum' property that gives users the option of whether the volume level should cease decrementing once the programmed minimum level is reached or should turn 'Off' (go to -inf) with the next push.

6. Updated Bose Bulk USB driver (also released in 3v060 Beta)

The updated driver supports both x86 and 64-bit processors running the Windows XP and Windows 7 operating systems. The files required for the new Bose Bulk USB driver are installed as part of application installation and then the driver is installed automatically the first time a PM8500/N is connected to the PC via USB.

Note: An internet connection maybe required when installing the driver on Windows XP and is preferable for Windows 7 so the driver signing can be verified by the Windows operating system.

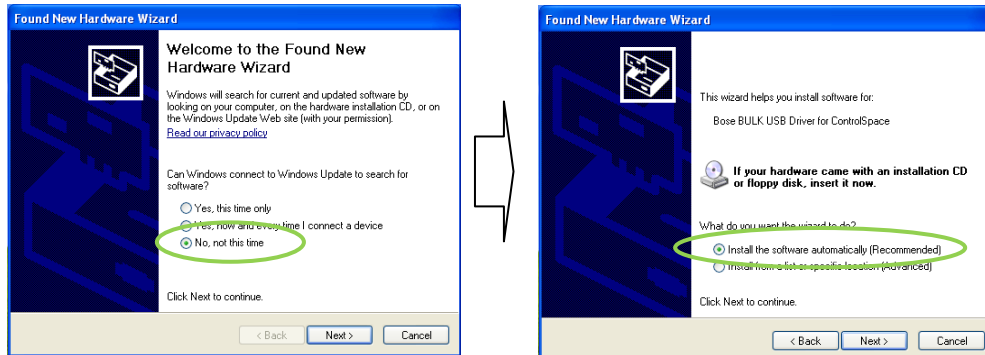
Windows 7:

When a PM8500/N is connected for the first time the driver will be installed automatically and you will receive a pop-up notification when it is complete.



Windows XP:

When a PM8500/N is connected for the first time the 'Found New Hardware Wizard' will be launched. On the first page you should opt not to check Windows for an update, on the second page you should opt to 'Install the software automatically (Recommended)' and then 'Finish' once the installation has completed.



CHANGES AND BUG FIXES SINCE V3.050

1. Incompatibilities caused by changes to the file-compression options available under Windows 7 have been reduced. Windows XP and Windows 7 can now be used interchangeably on new projects and Windows 7 32-bit PCs are able to retrieve designs from older installations directly. The only remaining incompatibility is between Windows 7 64-bit PCs and older installations/designs uploaded using XP. For these situations the 'Save Retrieved Design to File' option on the 'System' menu can be used.
2. Support for ESP timer events has been added to the PM8500N allowing parameter changes to be made via a parameter set in response to a timed event from the ESP. Adding PM modules directly to ESP timers is not recommended at this time.
3. An issue whereby pressing Scan with a PM8500/N in the design caused the PM8500 input labels to be lost/reset has been fixed.
4. Use of CC-16s (connected via an ESP) to control the output attenuation of PM8500Ns is now supported and works as expected.
5. Operation of the CC-64 in PM8500N only systems has been improved and the LED ladders no longer become out-of-sync if the volume level if the encoder is adjusted quickly.
6. The CC-16/64 lock feature should now function correctly in mixed ESP and PM systems; however there is currently an issue when the lock is invoked via Parameter Set.
7. The ability to dynamically re-assign CC-64 controls has been improved and now works with mixed ESP/PM systems; however the issue of LED ladders being unlit and the level jumping to -60db as the encoder is rotated left may still occur on larger systems.
8. Previously the first push of the CC-16 'Select' buttons (with the backlight off) was being stored in addition to turning on the backlight, which meant the assigned selector would change 2 steps with the second push. This has now been corrected.
9. An issue whereby two or more CC16s dynamically assigned to the same selector object could become out-of-sync when using the 'Select' buttons on the CC-16 simulators in ControlSpace Designer has been fixed.
10. Several issues related to the behavior of CC-16s and CC-64s have been resolved and the level of -inf is now displayed consistently as 'Off' to the end-user. Also it's no longer possible for the CC-16 to incorrectly to display 'Mute' when audio is passing.
11. An issue which meant CC-16/CC-64 simulators could display incorrect labels after the assignment was changed via Parameter Set has been resolved.
12. Uploading a file with a CC lock assigned to GPI will no longer cause an error.
13. The default step size for CC-64 has been changed to 1dB.
14. Several issues that affected CC-16/ 64 or serial operation in multiple device systems as a result of the Group master and member levels becoming out of sync if the power or network connection for one of the devices was disrupted have been resolved.
15. An issue whereby the maximum level for a CC-16/64 was not recalled correctly in Designer when the assignment was changed via Parameter Set has been resolved.
16. With the previous version it was possible to incorrectly assign PM8500 (USB only) outputs to a CC-16 or CC-64, this has now been corrected.
17. When recalling a parameter set that includes a user interface with a 'blank' assignment the smart simulation windows in ControlSpace Designer are now updated correctly.
18. Changes made via the CC-64 simulator to Groups that include members from devices other than the 'main' device are now correctly reflected in the hardware and the two no longer become out-of-sync.
19. In earlier versions Parameter Sets were not removed from stored CC assignments when they were cleared/deleted which resulted in errors when uploading, this no longer occurs.
20. An issue whereby changes made to the EQ gain parameter of grouped PM8500/N SpeakerPEQ modules were not reflected in the other group members has been fixed.
21. An issue that meant the alignment delay from the factory preset .seq files was not displayed correctly in the PM8500/N SpeakerPEQ control panel following a download has been resolved.

22. Previously it was possible that changes made to PM8500/N output levels via Parameter Set, Group or serial command without Designer were not correctly reflected in the limiter module and incorrect gain reduction may have been applied. This is resolved
23. An issue whereby grouped PM8500/N limiters would cause output settings to become coupled whilst online has been resolved.
24. Previously Group master and member levels could become out of sync following a download and save to flash in multiple ESP projects, this no longer occurs.
25. When a Group is changed from a PM8500N volume group to an ESP volume group the maximum level is now correctly reset to +12dB.
26. In earlier versions Groups were not removed from Parameter Sets when cleared/deleted resulting in errors when uploading, this no longer occurs.
27. PM8500/N SP modules accessible via the front panel (excluding Array EQ) grouped in Designer will now maintain that relationship whilst offline. Hence changing the parameter on one group member will cause other group members to be updated.
28. When PM8500/N output Group levels were recalled via Parameter Set offline it was previously possible for the relationship between master and members to become skewed. This no longer occurs
29. An issue that could cause Group levels or Parameter Set recalls to become out-of-sync between devices when recalled via Designer has been resolved.
30. When a PM8500N is connected via USB the correct network address is now displayed in the update utilities.
31. The 'Network Setup' utility now correctly displays all devices 'visible' according to the settings of the network adaptor rather than only showing those using the project or default network addresses.
32. Levels stored at $-\infty$ in a Parameter Set are no longer incorrectly changed to -8dB when the file is saved and re-opened.
33. Setting the AMM module 'RMS Avg' parameter to '0' will prevent the channel from gating correctly and may lock out other channels if the channel 'priority' is engaged. This is now prevented in CS Designer, however users should manually check older designs.
34. Support for system-wide serial commands has now been implemented in the PM8500N which means Parameter Set and Group commands (SS/GS/SG/GG) issued to any network device will be echoed to all other devices. Module commands (SA/GA) should still be sent to each PM8500N individually.
35. An issue that prevented ControlSpace Designer from reflecting changes made to numerical parameters of the PM8500N via serial command has been corrected
36. The Group increment/decrement command (SH) is working again and can correctly increment the level from $-\infty$.
37. Previously, changes made to the min/max/step properties of the CC-16/64 would not trigger a re-send of the design file and could be lost. This has now been corrected
38. Continuous errors on a CobraNet network (such as mismatched latencies) should no longer cause the ESP to become unresponsive if left unresolved.
39. A previous fix that corrected the reversed Up/Down buttons for the ESP GPI module left the test buttons reversed. This has now been corrected
40. An issue that could result in the labels for the ESP CobraNet modules being mixed up following a download has been resolved.
41. In Project View, ESP Link is now represented as a single connection between an ESP and PM rather than eight discreet connections.
42. The recently introduced FreeSpace® IZA and ZA amplifiers have been added to the devices available in Project View.
43. In ControlSpace Designer v3.0 some MA12EX+Bass presets were missing from the ESP SpEQ+Xover module. These have been restored.
44. A number of the factory preset (.seq) files used for the PowerMatch and ESP SpeakerPEQ modules have been updated to more closely match the SpEQ reference in the ESP. It is possible that when re-loading factory presets some minor re-tuning of the system will be required.

KNOWN ISSUES

1. The remaining incompatibility resulting from changes to the file-compression options available under Windows is between Windows 7 64-bit PCs and older installations/designs uploaded using XP. For these situations the 'Save Retrieved Design to File' option on the 'System' menu can be used to retrieve the compressed .cab to the desktop. From there the file can then be extracted and once the file extension has been changed from .xml to .csp the file can be opened in ControlSpace Designer as normal. To change the extension you'll need to ensure that 'Hide extensions for known file types' is unchecked in the Windows folder options.
2. In a system that includes multiple CC64s, should some of them be missing from the network at power-up or when the design is sent to PM8500N hardware, communication with the amplifier may be disrupted for a couple of minutes whilst it tries to establish communication with the missing devices, after this things "settle down" everything operates normally.
3. Firmware update may fail when using Win 7 64-bit OS with certain PC and network switch combinations, connecting directly using a crossover cable is a workaround. We have also seen firmware update failures via Ethernet if the PC network adaptor has the 'Large Send Offload (IPv4) = enabled. Disabling this setting appears to resolve the issue.
4. Changing PM8500N Array EQ parameters via Parameter Set is not currently supported.
5. Currently Band Pass bypass parameters are not recalled correctly via Parameter Set without ControlSpace Designer on-line.
6. Whilst most signal processing groups that span multiple PM8500Ns are now maintained when ControlSpace Designer is disconnected, Input PEQ, Array EQ and Band Pass modules are not.
7. It is possible that ControlSpace Designer can become out-of-sync or lose communication with the hardware if Parameter Sets are recalled in quick succession. Hardware functions correctly when ControlSpace Designer is disconnected.
8. Loading a locked loudspeaker preset to a SpeakerPEQ module stored in a Parameter Set or Group whilst online can cause undesirable side-effects. In this situation it is best to go offline, make the change and re-send the design to the hardware.
9. The volume levels displayed on CC-64s can get out-of-sync if the same PM8500N output is assigned to multiple CC-64s. This issue does not occur when using an ESP.
10. It is possible in larger systems that changing the CC-64 control assignments dynamically may result in the LED ladders being un-lit and the level jumping to -60db when the encoder is rotated one-click left. This no longer occurs in smaller systems.
11. In systems with multiple ESPs, dynamically re-assigning a CC-64 or CC-16 control from a Group to an individual module, such as a selector or a gain can result in unexpected behavior. The CC-64 or CC-16 may continue to display updates to the Group value even after the control has been changed. The issue does not occur when changing the assignment from one Group to another, or an individual module to another.
12. When changing CC-16/64 assignments via Parameter Set the stored 'Off at Minimum' property is currently ignored by the hardware, but the change is made correctly in ControlSpace Designer.
13. An issue can occur with grouped selectors in multiple ESP systems, whereby the CC-16 can appear locked or frozen. A workaround is to assign one of the group members to the CC-16 instead.
14. Depending on the number of ESPs in a project it is possible for Group volume adjustment via CC-16 to become a little 'jumpy'.
15. Mute-only group labels are not displayed correctly on the CC-64 when assigned to the control dynamically. Level+Mute groups behave as expected and using Parameter Sets is an alternative.
16. Recalling Parameter Sets that include the CC-lock parameter in quick succession may cause the ESP to become un-responsive and disconnect. In normal operation it should be fine.
17. Currently some PM8500N modules assigned directly to ESP timer events may not invoke parameter changes or update ControlSpace Designer correctly. It is recommended that changes are made via Parameter Sets for the time-being.
18. Using 'undo' after moving or making changes to the PM8500/N may be problematic, it is recommended that you avoid using 'undo' with PM where possible.

19. If a PM8500N firmware update via Ethernet is interrupted during the initial stages a reboot may be required to fully re-establish communications.
20. The X-Curve function in the Surround Sound Card remains un-operational in this release.
21. It is possible that some paths may not pass audio correctly when there are more than 3-4 AMM blocks in an ESP system design.
22. When an input channel of the AMM module is set to 'Use Channel Settings' from another the values are not correctly updated if the properties window is open. Either close and re-open the channel properties window, or re-select the source channel from the list.
23. With certain configurations it is possible that the DSP resource requirement is underestimated which can result in audible distortion if a design is loaded with greater than 97% usage. Try to keep DSP resource requirement under 95% or add the DSP expansion card.
24. Gains set to $-\infty$ are not saved correctly when using Polish or Russian operating systems which results in an error when trying to re-open the file.
25. Performing load measurements on channels with grouped delays will cause metering to stop operating, and will generate a network error when going offline.
26. ESPs may become unresponsive if groups that are assigned to CC-16s are also adjusted via other means in systems with two or more PM8500Ns present.

REVISION HISTORY

V3.050 (January, 2012)

Changes/Bug fixes

1. Firmware update of PM8500/N via USB and Ethernet has been improved and is now more robust and tolerant of different networking hardware.
2. The PM8500/N Recovery Mode is now correctly supported via USB allowing a new firmware image to be sent in the event of corruption or update failure.
3. When performing a firmware update with multiple devices, should one fail, the process now continues and successfully updated devices are automatically rebooted.
4. An issue that could occasionally cause PM8500/Ns to enter a 'FAULT – Amp x (or Power Supply) Temp Above Max' state shortly after power up has been resolved.
5. PM8500/N limiter settings are now changed automatically when changing outputs between High-Z (70/100V) and Low-Z operation, even when a loudspeaker preset is loaded.
6. Several issues that could result in limiter and protection gain reduction being applied incorrectly have been resolved.
7. Limiter values are now correctly constrained to the maximum permissible value for the mode when adjusting limiters or loading EQ presets from front panel.
8. Copy/paste of a CC16 in Project View no longer causes an error when attempting to send the design to an ESP-88/00
9. An earlier issue that caused CC-16s or CC-64s not to unlock correctly when controlled Parameter Set has now been resolved
10. An issue whereby volume levels displayed on CC-64s can get out-of-sync if the same PM8500N output is assigned to multiple controls/CC-64s has been resolved.
11. Update of CC-64 LED ladders and displayed values has been significantly improved for PM8500N only systems
12. Issues that could result in CC-64 labels being lost or not being updated correctly in PM8500N only systems have been resolved.
13. PM8500N signal processing modules that could incorrectly be added to the CC-64 Custom Mode are now restricted as expected.
14. An issue that could result in ESP-88/00 mute states becoming out-of-sync between CC-64 hardware and simulator if encoders were push simultaneously has been resolved.
15. The default step-size for a volume control on a CC-64 has been returned to 0.5dB for this release.

16. Previously it was possible to store conflicting values for the PM8500N Band Pass and Speaker PEQ modules in a parameter set which could lead to unexpected results. This is no longer possible because the high/low pass parameters are now only stored with the Band Pass module, not with the Speaker PEQ module.
17. Changes made to the EQ gain parameter of a grouped Speaker PEQ module in the PM8500N are now reflected in the other group members as expected.
18. The correct loudspeaker preset label for the PM8500N Speaker EQ module is now displayed when downloading irrespective of whether changes were saved to flash
19. Copy/Paste of an unlocked PM8500/N Speaker PEQ module no longer pushes attack/release settings to limiter unexpectedly.
20. Open circuit detection relies on program material for impedance testing, and due to varying program material may not always work on some channels with only high frequency program content. False detection of open faults on outputs connected to RoomMatch HF modules has been reduced.
21. Performing PM8500N load measurements on channels with grouped delays could cause metering to cease and an error when going offline, this has now been resolved.
22. An issue that caused the USB connection to break following a load measurement on the PM8500/N has been corrected.
23. Management of load measurement data in the design file has been improved a little to reduce file size issues for larger systems.
24. Performing a scan with a PM8500/N in the design no longer causes the PM8500/N input labels to be lost/reset .
25. An earlier issue whereby Groups were not included in a Parameter Set copy/paste has been resolved.
26. An issue whereby levels stored at $-\infty$ in a Parameter Set would be incorrectly changed to -8dB when the file is saved and re-opened has been resolved.
27. When the ESP-88/00 Comp/Lim ratio was set to $\infty:1$ (or stored in a parameter set) it was incorrectly changed to 8:1 when the file was re-opened, this no longer occurs.
28. PM8500N Signal Generator routing is no longer included when adding the Matrix Mixer to a Parameter Set
29. It is no longer possible to group incompatible limiter modules on the PM8500N via the Add to Group option.
30. An issue whereby Parameter Set recall could fail, or two identical devices could appear in the Parameter Set after starting a new file and downloading has been resolved.
31. An issue whereby a PM8500N could return to factory defaults if groups were being used and the IP address of the hardware was changed without also changing the address within the design file has been resolved.
32. Previously changing the PM8500/N output configuration from Mono to Quad to Mono on some channels could cause the hardware to freeze. This has now been resolved
33. Following changes to output configuration it was previously possible for the Signal Generator routing on the PM8500/N to be shown incorrectly in the Matrix Mixer, this is resolved
34. The Device list is now displayed correctly when restarting ControlSpace Designer in full- 'Designer' mode after having used 'Monitor Mode'
35. When connecting via USB you are no longer presented with the "Settings have changed" dialog when going offline if the option to auto-save settings to flash is checked.
36. An issue whereby PM8500s (USB only) were incorrectly reported as missing when connecting via Ethernet has been partially resolved. Now only occurs for quick-reconnect.
37. When a PM8500N is connected via USB and the network address of the hardware and ControlSpace Designer differ, the actual hardware network address is now displayed in the update utilities as expected.
38. It is no longer possible to set the network address in CSD to an inaccessible range.

39. When power to the PM8500/N was lost the 'AC power loss' entry to the alarm log could sometimes be missed, this has now been corrected
40. It was possible for the polarity indication within the PM8500/N output panel to become out-of sync when changing from V-bridge/Ishare to Quad-bridge with the polarity reversed. This is resolved.

v3.044 (November, 2011)

Changes/Bug fixes

1. Recovery mode supported for PowerMatch supported via USB

v3.043 (October, 2011)

New Features

1. PowerMatch PM8500/N Configurable Multi-Channel Professional Amplifiers

This version of ControlSpace Designer includes many additions and enhancements to support the new PowerMatch PM8500 and PM8500N Professional Power Amplifiers.

- **Output Configuration**
Each channel pair can be configured for individual, voltage bridged or current sharing operation to match different loads. In addition two channel pairs can be combined in QuadBridge™ mode to deliver 4x the power of a single channel. The output configuration is defined in the PM8500/N properties.
- **Connection via USB**
Direct connection to a single PM8500/N using a standard USB connection.
- **DHCP (PM8500N only)**
By default, the PM8500N uses DHCP to obtain an IP address automatically on power-up. DHCP can be disabled from CSD.
- **Standby Control (PM8500N only)**
Allows the PM8500N amplifier to be put into standby or turned on remotely via Parameter Set recall.
- **Limiter Link Groups**
When linked, gain reduction is applied equally to all members of the Link Group when limiting on any of linked channels occurs.
- **Load measurement**
The load impedance of each PM8500/N output may be measured and recorded using ControlSpace Designer for diagnostic or documentation purposes. Reference sweeps are stored within the ControlSpace Designer project file for future comparison.
- **Monitoring and Alarms**
The PM8500/N maintains an internal log of alarm and fault conditions that maybe retrieved, viewed and cleared via ControlSpace Designer.

2. New Signal Processing Modules

In addition, to the features described above, new signal processing modules have been added for both PowerMatch and ESP processors to support the new RoomMatch Array Module loudspeakers and our existing loudspeaker range.

- **SpeakerPEQ Module (with Band Pass)**
A combined loudspeaker and parametric EQ module with band-pass and alignment delay. Factory preset files are provided for all current Bose Professional loudspeaker products in parametric EQ format (including limiter settings) that can be unlocked and modified if required.

- **Array EQ Module**

A new array EQ module can be used to provide array compensation for a RoomMatch loudspeaker array, or to provide room equalization for other types of loudspeaker.

- **Peak/RMS Limiter Module**

A new, combined Peak and RMS limiter module has been created for PowerMatch to simultaneously protect loudspeakers from excessive cone-excursion (peak) and excessive long-term power (RMS). When loading a factory preset EQ file in PowerMatch the optimized limiter settings for the loudspeaker are also applied. A version is also provided for use in ESP processors.

3. Windows 7 Support

This version of ControlSpace Designer supports both 32-bit and 64-bit versions of the Windows 7 operating system, however 64-bit installations are limited to Ethernet only at this time.

4. Monitor Mode

With this latest version of ControlSpace Designer comes the option of launching in 'Monitor Mode' whereby all design and control programming functions are disabled and the application can be used as a stand-alone graphical user interface for monitoring the system. When launched in 'Monitor Mode' ControlSpace Designer will automatically locate and connect to ControlSpace hardware on the network and synchronize to the 'running' settings. To launch ControlSpace Designer in Monitor Mode you add a "[space]-m" switch to the shortcut properties.

5. Refresh of Project View devices

The palette of devices available in Project View has been refreshed with many new devices added and loudspeakers re-organized into product families. Compatibility with the standard devices included in previous releases has been maintained, but any custom devices would need to be added manually to the new installation. Additional region specific devices can be added by switching the device list in the Bose\ControlSpace x.xx\bin folder. For example: to add Europe only devices to the list rename 'DeviceList.xml' to 'Default.DeviceList.xml' and then rename 'Europe.DeviceList.xml' to 'DeviceList.xml' and restart ControlSpace Designer.

6. Retrieve Saved Design

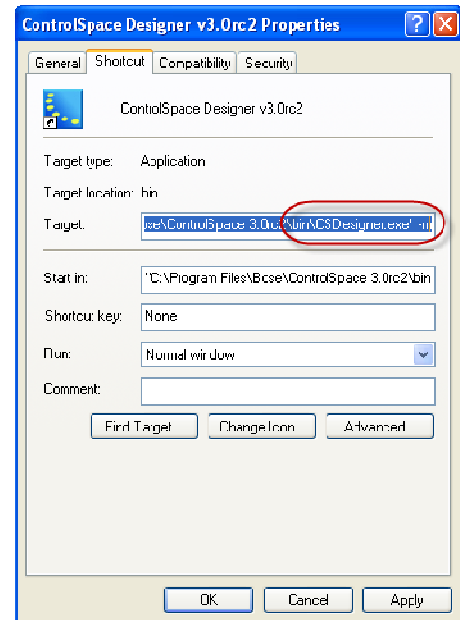
To simplify the connection process the option to download the 'Saved' settings when going on-line has been removed and replaced with a separate function in the 'System' menu called 'Retrieve Saved Design'. This menu option performs the same function and retrieves the 'power-on settings' but remains off-line so settings can be changed if required before the design is re-sent to the hardware.

7. Presets retired, use Parameter Sets

In order to simplify and streamline the available programming options Presets have been removed and are no longer supported. These were originally introduced as a method for dynamically changing the control assignments for CC-64 and CC-16 user interfaces, but since version 2.x this can be achieved more simply and efficiently using Parameter Sets.

8. ESP Link Card/PM-ESP Link Card

A new ESPLink card is available for the ESP to provide a single cable connection which carries 8 channels of digital audio between the ESP processor and a corresponding PM-ESPLink card available for PowerMatch amplifiers.



9. **CobraNet™ Network Audio Card** – This version of ControlSpace Designer adds support for the CobraNet network audio expansion card for the ESP. This industry-standard technology allows multiple channels of high quality digital audio to be passed across a standard Ethernet network.

The ControlSpace CobraNet expansion card has the flexibility to support any of the following input/output channel combinations:

Card Variant	Routing Slots Used	Additional Card Capacity	
		ESP-88C	ESP-00
16 in, 16 out	4	2	4
16 in, 8 out	3	3	5
8 in, 16 out	3	3	5
16 in, 0 out	2	3*	6
0 in, 16 out	2	3*	6
8 in, 8 out	2	3*	6
8 in, 0 out	1	3*	7
0 in, 8 out	1	3*	7

* *Limited by the physical expansion slots available*

The internal architecture of the ESP is designed to support up to 64 audio channels divided into 8 routing slots of up to 8 channels each. Typically most expansion cards occupy one physical expansion slot and have four or eight channels so the routing and physical slots are the same. The only current exception is the standard 4x4 input/output expansion card which occupies two physical expansion slots (to allow enough space for the connectors) but only requires one routing slot (8 channels total).

The CobraNet expansion card is different because it only occupies one physical slot but can support up to 32 channels (16in, 16 out) and therefore can utilize up to four of the eight available routing slots. Depending on the channel capacity allocated to the CobraNet card the number of additional expansion cards (other than the standard 4x4 card) that can be added may be less than the physical expansion slots available as demonstrated in the table above.

Bug Fixes

1. The 'High Q' EQ algorithm option is now the default option for any new projects. If the lower-resource option is desired this can be selected in the ESP properties.
2. The default step-size for a volume control on a CC-64 is now 1dB.
3. A condition whereby the operation of Groups or the recall of Parameter Sets could slow significantly with Project Directory open has been resolved.
4. When there were multiple ESPs in the project and groups were controlled via a CC-64, the CC-64 display could be slow to update if the encoder was turned quickly. This has been improved significantly for ESP systems, but in PM8500N only systems the issue can still occur.
5. Under certain conditions it was possible for the CC-64 to appear frozen and operating the encoders would have no effect. This issue has been addressed, however similar symptoms can also be observed if the network connection between the CC-64 and the ESP/PM is lost.
6. If a volume Group was set to the same level by multiple Parameter Set recalls (without the level being changed in-between) it was possible for the members of the Group to become out-of-sync with the master. This has now been resolved.
7. When opening configuration files that originated in v1.001 with ControlSpace Designer v2.200 (or v2.075) it was not possible to add additional devices or processing modules. This has now been corrected.

8. Previously, uploading a design that contained a 402-II full-range loudspeaker EQ or selecting the 402-II full-range option in the loudspeaker EQ module would cause an audible 'pop'. This has now been resolved.
9. An issue that caused selectors dynamically assigned to CC-64s to revert back to their stored value when ControlSpace Designer was on-line has been fixed.
10. An issue that caused CC-64 LED ladders not to light when the assignment was changed dynamically (with no change to the volume levels) has been partially fixed. The LED ladders now light correctly when assignments are changed, but the CC-64 may need to be rebooted after the initial upload. Note that use of dynamic reassignment with PM8500Ns in the project is not currently supported.
11. The CC-64 would occasionally enter 'Custom Mode' unintentionally when processing modules were assigned in the 'Custom Mode' tab and Parameter Sets were recalled. This no longer occurs.
12. An issue whereby a selector module from any ESP other than the 'RTC' ESP assigned to a CC-64 in a multi-ESP project could cause the 'RTC' ESP to halt when the selector was changed via ControlSpace Designer has been resolved.
13. An issue that caused selectors assigned to CC-16s to revert back to their stored value when the re-assignment parameter set was recalled via ControlSpace Designer has been resolved.
14. Previously, unlocking a CC-16 or CC-64 via Parameter Set also removed the control assignments. This has now been resolved for the ESP. Note that locking or unlocking user interfaces in PM8500N only systems is not supported in this release.
15. Once CC-16s are linked to an ESP they move from the top of the Project Directory to their new location under the appropriate ESP. In previous versions this move did not occur until the file was re-opened; it now happens immediately.
16. An issue whereby the Group increment serial command (SH) did not function correctly if the gain was set to $-\infty$ has been resolved. With the gain set to $-\infty$ the first increment command changes the gain to -60dB and then subsequent commands increment the gain as expected.
17. Actions assigned to the 'Off' state (or minimum volume) of a GPI contact are now correctly invoked at power-up.
18. The pop-up faders in the AMM and Surround card modules now correctly sync to the current level when opened.
19. In previous versions when multiple devices or modules were copied and pasted the labels were assigned in an unexpected order. This has now been resolved.
20. In Up/Down mode on the GPI module the arrows indicating increment and decrement were reversed, this has been corrected.
21. Under certain circumstances it was possible for the data in the Project Directory to become 'stale' and not be updated correctly. This has now been fixed.
22. Previously, it was not possible to connect to an ESP when the hardware IP address had been changed after the design file was loaded. Now you are given the option of correcting this when downloading the file.
23. When opening a configuration file that contains custom or unknown devices in Project View, you now have the option to remove the unknown objects and continue opening the file.