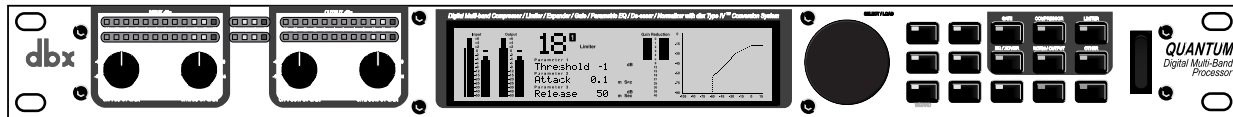


# Software Version 1.50

Date: 11.7.00



To better accommodate the discriminating needs of the dbx Professional Products Quantum user, the following features have been added to the Quantum.

## Section 1 - New Features

- 1.1. ***Multi-band chain with De-Esser***
- 1.2. ***Ambience added to all Dual Mono Setups***
- 1.3. ***MS-EQ added to all Stereo Linked Setups***
- 1.4. ***MS-COMP (MS-Compressor, MS-Gate, MS-Limiter, and MS-Side Chain EQ) added to all Stereo Linked Non-Multi-band Setups***
- 1.5. ***Autoload Off***
- 1.6. ***Meter Ballistics*** - for setting the speed of peak and average meters.

## Section 2 - Software Operations

### 2.1. New FX Chains

The Quantum 1.5 software upgrade adds a new Stereo Multi-band chain with De-Esser. This will be indicated by the **D** in the program display. To use this new chain, select the Stereo Linked User Setup "Def MB w/ DS". In this configuration, the gain reduction meters display the De-Esser gain reduction added to each band's gain reduction.

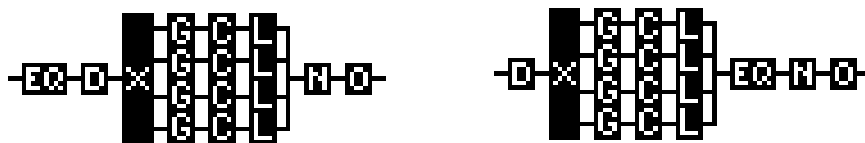


Diagram 1 of Multi-band chain with De-esser in place of ambience.

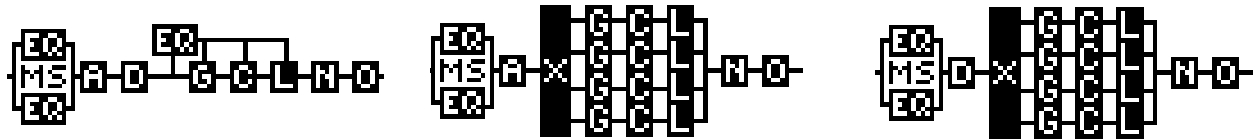
The Quantum 1.5 software upgrade also adds the Ambience effect to all Dual Mono Setups. The Ambience effect module is indicated by **A** in the program display.



Diagram 2 of Dual Mono chain with Ambience added.

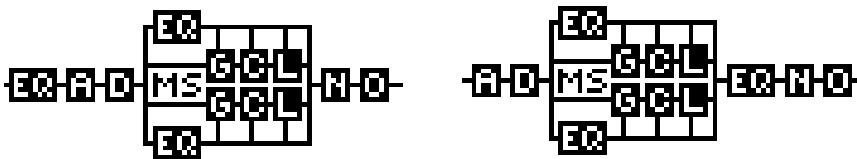
## Section 3 - New Parameters

### 3.1. MS-EQ Middle Side Equalizer



All Stereo Linked setups now have MS-EQ or middle side EQ. MS-EQ is selected through the position (Pos) parameter of the EQ. The selections are: Pre/Post/MS. When selected as MS, a middle side pre-crossover EQ is activated. This allows EQing of the Middle and Side signals separately.

### 3.2. MS-COMP, Middle Side Compressor



All Stereo Non-Multi-band setups now have MS-COMP or middle side Compressor. MS-COMP is turned on or off on the last page (4) of the Compressor. Turning MS-COMP On allows the user to Gate, Compress and Limit the Middle and Side information separately. MS-COMP also allows separate Side Chain EQ for the Middle and Side signals.

### 3.3. MS(middle-side) Encoding/Decoding

The MS or middle-side encoding name comes from a mic'ing technique. The encoding process takes Left and Right signals and uses their signal content to produce "Middle" and "Side" signals. Additional Processing can then be applied to these signals. The Middle signal is created by simply adding Left and Right signals together ( $M=L+R$ ). This accentuates the common elements in the Left and Right channels, or the "mono" part of the signal. The Side signal is created by subtracting the Right signal from the Left ( $S=L-R$ ). Any common elements will cancel, leaving a "stereo" signal. The Middle and Side signal can then be re-combined to reproduce Left and Right signals.

## Section 4 - New Utility Features

The following parameters have been added to the Utilities Misc. Page (10).

### 4.1. Misc.: (Page 10)

#### Contrast

Adjusts the screen contrast.

#### Autoload: On/Off - NEW

Turns program Autoload on and off. When off, the program is loaded by pushing the encoder.

#### MtrSpeed: Meter ballistics control: Low\Med\Hi - NEW

The Quantum 1.5 software includes the Meter Speed control which controls the rate of the peak and average meters.

## Section 5 - Quantum Updater

Included in the Quantum 1.5 Upgrade, is the Quantum Updater. This updater can be found on the dbx website at: [www.dbxpro.com](http://www.dbxpro.com). This program is used to store setups and update the Quantum's software. The Quantum Updater uses MIDI to transfer information. Be sure to make MIDI cable connections between the computer and the Quantum prior to running the updater.

## 5.1. Saving Setups

Start the Quantum Updater while running the current Quantum software. Store a setup by hitting the "Get One Setup" button. This will prompt you for a setup number in the Linked or Dual Mono setup library.

To find the setup number, go to a Stereo Linked or Dual Mono Program of the Quantum. From the Program screen pressing the "Channel" button enters the Stereo Linked or Dual Mono Setup Libraries respectively. Turn the encoder counter-clockwise until the beginning of the setup library has been reached. Slowly turn the encoder clockwise and count each setup until you reach the setup you would like to upload. This will give you the setup number. Note and record the setup name.

Return to the Quantum Updater on your computer. Select either Linked or Dual Mono and select the Setup number using the list box. Hit the: **OK** button. A save dialogue box will appear. The file name should be the same as the setup name noted above. For example, from the factory, "User:1" is "Default MB" in the Stereo Linked Setup library and "Mono Def" in the Dual Mono Setup library. This dialogue box also allows you to save as a SysEx file (\*.syx) or as a MIDI file (\*.mid). The SysEx file type is preferred. Hit the save button to upload and save the Setup.

Repeat the process above until all Setups you need are uploaded and saved.

## 5.2. Updating Quantum Software

The Quantum Updater is the perfect tool for loading the most current software updates onto your Quantum. With MIDI cables in place, start the Updater software. To update the latest Operating System, hit the "Update OS" button. **Warning- This will overwrite all existing setups!** Follow the Saving Setups section above to store off setups before updating to the latest version. Be sure to follow the instructions and the Updater will download the new operating system. A Transfer Progress box will appear.

If the above procedure fails put the Quantum into download mode by holding the <prev page> button while powering on the Quantum. The screen will read: "Waiting for data" in the top right corner. At this point, hit the "Update OS" button and follow the instructions.

### 5.3. Restoring Setups

Start Updater with Quantum power on. Restore setups by hitting the "Dump One Setup" button. From the open file dialogue box, select the Setup to restore. The Updater will download the setup. Any new changes in a new operating system will be added to each setup as it is downloaded. The display on the front panel of the Quantum will prompt you to store the new setup. Follow the procedure to store the setup.

## Section 6 - Reference Appendix E - MIDI CC Tables (modification/update)

## 6.1- Linked Multi-band with Ambience Chain

cc 0 -> Linked TypeIV On/Off  
 cc 1 -> Linked TypeIV Color  
 cc 2 -> Linked TypeIV Level

cc 3 -> Linked or Middle Parametric EQ On/Off  
 cc 4 -> Linked or Middle Parametric EQ Position  
 cc 5 -> Linked or Middle Parametric EQ Band1 Freq  
 cc 6 -> Linked or Middle Parametric EQ Band1 Slope  
 cc 7 -> Linked or Middle Parametric EQ Band1 Lvl  
 cc 8 -> Linked or Middle Parametric EQ Band2 Freq  
 cc 9 -> Linked or Middle Parametric EQ Band2 Q  
 cc 10 -> Linked or Middle Parametric EQ Band2 Lvl  
 cc 11 -> Linked or Middle Parametric EQ Band3 Freq  
 cc 12 -> Linked or Middle Parametric EQ Band3 Q  
 cc 13 -> Linked or Middle Parametric EQ Band3 Lvl  
 cc 14 -> Linked or Middle Parametric EQ Band4 Freq  
 cc 15 -> Linked or Middle Parametric EQ Band4 Q  
 cc 16 -> Linked or Middle Parametric EQ Band4 Lvl  
 cc 17 -> Linked or Middle Parametric EQ Band5 Freq  
 cc 18 -> Linked or Middle Parametric EQ Band5 Slope  
 cc 19 -> Linked or Middle Parametric EQ Band5 Lvl

cc 20 -> Linked Stereo Adjust On/Off  
 cc 21 -> Linked Stereo Adjust Balance  
 cc 22 -> Linked Stereo Adjust Stereo-Mono

cc 23 -> Linked Ambience On/Off  
 cc 24 -> Linked Ambience Amount  
 cc 25 -> Linked Ambience Width  
 cc 26 -> Linked Ambience Threshold  
 cc 27 -> Linked Ambience Threshold

cc 28 -> Linked Crossover Edge1 Fc  
 cc 29 -> Linked Crossover Edge1 Slope  
 cc 30 -> Linked Crossover Edge2 Fc  
 cc 31 -> Linked Crossover Edge2 Slope  
 cc 32 -> Linked Crossover Edge3 Fc  
 cc 33 -> Linked Crossover Edge3 Slope

cc 34 -> Linked Band1 Gate On/Off  
 cc 35 -> Linked Band1 Gate Threshold  
 cc 36 -> Linked Band1 Gate Gate Ratio  
 cc 37 -> Linked Band1 Gate Attack  
 cc 38 -> Linked Band1 Gate Hold time  
 cc 39 -> Linked Band1 Gate Release  
 cc 40 -> Linked Band1 Max Attenuation  
 cc 41 -> Linked Band2 Gate On/Off  
 cc 42 -> Linked Band2 Gate Threshold  
 cc 43 -> Linked Band2 Gate Gate Ratio  
 cc 44 -> Linked Band2 Gate Attack  
 cc 45 -> Linked Band2 Gate Hold time  
 cc 46 -> Linked Band2 Gate Release  
 cc 47 -> Linked Band2 Max Attenuation  
 cc 48 -> Linked Band3 Gate On/Off  
 cc 49 -> Linked Band3 Gate Threshold  
 cc 50 -> Linked Band3 Gate Gate Ratio  
 cc 51 -> Linked Band3 Gate Attack

cc 52 -> Linked Band3 Gate Hold time  
 cc 53 -> Linked Band3 Gate Release  
 cc 54 -> Linked Band3 Max Attenuation  
 cc 55 -> Linked Band4 Gate On/Off  
 cc 56 -> Linked Band4 Gate Threshold  
 cc 57 -> Linked Band4 Gate Gate Ratio  
 cc 58 -> Linked Band4 Gate Attack  
 cc 59 -> Linked Band4 Gate Hold time  
 cc 60 -> Linked Band4 Gate Release  
 cc 61 -> Linked Band4 Max Attenuation

cc 62 -> Linked Band1 Compressor On/Off  
 cc 63 -> Linked Band1 Compressor OverEasy  
 cc 64 -> Linked Band1 Compressor Auto On/Off  
 cc 65 -> Linked Band1 Compressor Threshold  
 cc 66 -> Linked Band1 Compressor Gate Ratio  
 cc 67 -> Linked Band1 Compressor Gain  
 cc 68 -> Linked Band1 Compressor Attack  
 cc 69 -> Linked Band1 Compressor Hold time  
 cc 70 -> Linked Band1 Compressor Release  
 cc 71 -> Linked Band2 Compressor On/Off  
 cc 72 -> Linked Band2 Compressor OverEasy  
 cc 73 -> Linked Band2 Compressor Auto On/Off  
 cc 74 -> Linked Band2 Compressor Threshold  
 cc 75 -> Linked Band2 Compressor Gate Ratio  
 cc 76 -> Linked Band2 Compressor Gain  
 cc 77 -> Linked Band2 Compressor Attack  
 cc 78 -> Linked Band2 Compressor Hold time  
 cc 79 -> Linked Band2 Compressor Release  
 cc 80 -> Linked Band3 Compressor On/Off  
 cc 81 -> Linked Band3 Compressor OverEasy  
 cc 82 -> Linked Band3 Compressor Auto On/Off  
 cc 83 -> Linked Band3 Compressor Threshold  
 cc 84 -> Linked Band3 Compressor Gate Ratio  
 cc 85 -> Linked Band3 Compressor Gain  
 cc 86 -> Linked Band3 Compressor Attack  
 cc 87 -> Linked Band3 Compressor Hold time  
 cc 88 -> Linked Band3 Compressor Release  
 cc 89 -> Linked Band4 Compressor On/Off  
 cc 90 -> Linked Band4 Compressor OverEasy  
 cc 91 -> Linked Band4 Compressor Auto On/Off  
 cc 92 -> Linked Band4 Compressor Threshold  
 cc 93 -> Linked Band4 Compressor Gate Ratio  
 cc 94 -> Linked Band4 Compressor Gain  
 cc 95 -> Linked Band4 Compressor Attack  
 cc 96 -> Linked Band4 Compressor Hold time  
 cc 97 -> Linked Band4 Compressor Release

cc 98 -> Linked Band1 Limiter On/Off  
 cc 99 -> Linked Band1 Limiter Threshold  
 cc 100-> Linked Band1 Limiter Attack  
 cc 101-> Linked Band1 Limiter Hold time  
 cc 102-> Linked Band1 Limiter Release  
 cc 103-> Linked Band2 Limiter On/Off  
 cc 104-> Linked Band2 Limiter Threshold  
 cc 105-> Linked Band2 Limiter Attack  
 cc 106-> Linked Band2 Limiter Hold time  
 cc 107-> Linked Band2 Limiter Release  
 cc 108-> Linked Band3 Limiter On/Off  
 cc 109-> Linked Band3 Limiter Threshold  
 cc 110-> Linked Band3 Limiter Attack  
 cc 111-> Linked Band3 Limiter Hold time

cc 112-> Linked Band3 Limiter Release  
 cc 113-> Linked Band4 Limiter On/Off  
 cc 114-> Linked Band4 Limiter Threshold  
 cc 115-> Linked Band4 Limiter Attack  
 cc 116-> Linked Band1 Limiter Hold time  
 cc 117-> Linked Band4 Limiter Release

cc 118-> Linked TCM On/Off  
 cc 119-> Linked TCM Time

cc 120-> Linked Output Effect Bits  
 cc 121-> Linked Output Effect Dither  
 cc 122-> Linked Output Effect Shape  
 cc 123-> Linked Output Effect Dither Out

cc 124-> Linked Normalize Effect On/Off  
 cc 125-> Linked Normalize Effect Level  
 cc 126-> Linked Normalize Effect Ceiling  
 cc 127-> Linked Normalize Effect Type

## 6.2- Linked Non-Multi-band Chains

cc 0 -> Linked TypeIV On/Off  
 cc 1 -> Linked TypeIV Color

cc 2 -> Linked or Middle Parametric EQ On/Off  
 cc 3 -> Linked or Middle Parametric EQ Position  
 cc 4 -> Linked or Middle Parametric EQ Type  
 cc 5 -> Linked or Middle Parametric EQ Band1 Freq  
 cc 6 -> Linked or Middle Parametric EQ Band1 Slope  
 cc 7 -> Linked or Middle Parametric EQ Band1 Lvl  
 cc 8 -> Linked or Middle Parametric EQ Band2 Freq  
 cc 9 -> Linked or Middle Parametric EQ Band2 Q  
 cc 10 -> Linked or Middle Parametric EQ Band2 Lvl  
 cc 11 -> Linked or Middle Parametric EQ Band3 Freq  
 cc 12 -> Linked or Middle Parametric EQ Band3 Q  
 cc 13 -> Linked or Middle Parametric EQ Band3 Lvl  
 cc 14 -> Linked or Middle Parametric EQ Band4 Freq  
 cc 15 -> Linked or Middle Parametric EQ Band4 Q  
 cc 16 -> Linked or Middle Parametric EQ Band4 Lvl  
 cc 17 -> Linked or Middle Parametric EQ Band5 Freq  
 cc 18 -> Linked or Middle Parametric EQ Band5 Slope  
 cc 19 -> Linked or Middle Parametric EQ Band5 Lvl

cc 20 -> Linked Stereo Adjust On/Off  
 cc 21 -> Linked Stereo Adjust Bal  
 cc 22 -> Linked Stereo Adjust Stereo/Mono

cc 23 -> Linked De-Esser On/Off  
 cc 24 -> Linked De-Esser HP Frequency  
 cc 25 -> Linked De-Esser Amount  
 cc 26 -> Linked De-Esser Type  
 cc 27 -> Linked De-Esser Width

cc 28 -> Linked Ambience On/Off  
 cc 29 -> Linked Ambience Amount  
 cc 30 -> Linked Ambience Width  
 cc 31 -> Linked Ambience Threshold

cc 32 -> Linked or Middle Gate On/Off  
 cc 33 -> Linked or Middle Gate Threshold  
 cc 34 -> Linked or Middle Gate Gate Ratio  
 cc 35 -> Linked or Middle Gate Attack

cc 36 -> Linked or Middle Gate Hold time  
 cc 37 -> Linked or Middle Gate Release  
 cc 38 -> Linked or Middle Max Attenuation

cc 39 -> Linked or Middle Compressor On/Off  
 cc 40 -> Linked or Middle Compressor OverEasy  
 cc 41 -> Linked or Middle Compressor Auto On/Off  
 cc 42 -> Linked or Middle Compressor Threshold  
 cc 43 -> Linked or Middle Compressor Gate Ratio  
 cc 44 -> Linked or Middle Compressor Gain  
 cc 45 -> Linked or Middle Compressor Attack  
 cc 46 -> Linked or Middle Compressor Hold time  
 cc 47 -> Linked or Middle Compressor Release  
 cc 48 -> Linked or Middle Compressor MS On/Off

cc 49 -> Linked or Middle Limiter On/Off  
 cc 50 -> Linked or Middle Limiter Threshold  
 cc 51 -> Linked or Middle Limiter Type  
 cc 52 -> Linked or Middle Limiter Attack  
 cc 53 -> Linked or Middle Limiter Hold time  
 cc 54 -> Linked or Middle Limiter Release  
 cc 55 -> Linked or Middle Limiter Over Easy  
 cc 56 -> Linked or Middle Limiter Auto

cc 57 -> Linked TCM On/Off  
 cc 58 -> Linked TCM Time

cc 59 -> Linked Output Effect Bits  
 cc 60 -> Linked Output Effect Dither  
 cc 61 -> Linked Output Effect Shape  
 cc 62 -> Linked Output Effect Dither Out

cc 63 -> Linked or Middle Parametric Side-Chain EQ On/Off  
 cc 64 -> Linked or Middle Parametric Side-Chain EQ Type  
 cc 65 -> Linked or Middle Parametric Side-Chain EQ Band1 Fc  
 cc 66 -> Linked or Middle Parametric Side-Chain EQ Band1 Slope  
 cc 67 -> Linked or Middle Parametric Side-Chain EQ Band1 Level  
 cc 68 -> Linked or Middle Parametric Side-Chain EQ Band2 Fc  
 cc 69 -> Linked or Middle Parametric Side-Chain EQ Band2 Q  
 cc 70 -> Linked or Middle Parametric Side-Chain EQ Band2 Level  
 cc 71 -> Linked or Middle Parametric Side-Chain EQ Band3 Fc  
 cc 72 -> Linked or Middle Parametric Side-Chain EQ Band3 Q  
 cc 73 -> Linked or Middle Parametric Side-Chain EQ Band3 Level  
 cc 74 -> Linked or Middle Parametric Side-Chain EQ Band4 Fc  
 cc 75 -> Linked or Middle Parametric Side-Chain EQ Band4 Q  
 cc 76 -> Linked or Middle Parametric Side-Chain EQ Band4 Level  
 cc 77 -> Linked or Middle Parametric Side-Chain EQ Band5 Fc  
 cc 78 -> Linked or Middle Parametric Side-Chain EQ Band5 Slope  
 cc 79 -> Linked or Middle Parametric Side-Chain EQ Band5 Level

cc 80 -> Linked Normalize Effect ON OFF  
 cc 81 -> Linked Normalize Effect Level  
 cc 82 -> Linked Normalize Effect Ceiling  
 cc 83 -> Linked Normalize Effect Type

cc 84 -> Side Parametric EQ On/Off  
 cc 85 -> Side Parametric EQ Type  
 cc 86 -> Side Parametric EQ Band1 Fc  
 cc 87 -> Side Parametric EQ Band1 Slope  
 cc 88 -> Side Parametric EQ Band1 Level  
 cc 89 -> Side Parametric EQ Band2 Fc  
 cc 90 -> Side Parametric EQ Band2 Q  
 cc 91 -> Side Parametric EQ Band2 Level  
 cc 92 -> Side Parametric EQ Band3 Fc  
 cc 93 -> Side Parametric EQ Band3 Q  
 cc 94 -> Side Parametric EQ Band3 Level

cc 95 -> Side Parametric EQ Band4 Fc  
 cc 95 -> Side Parametric EQ Band4 Q  
 cc 97 -> Side Parametric EQ Band4 Level  
 cc 98 -> Side Parametric EQ Band5 Fc  
 cc 99 -> Side Parametric EQ Band5 Slope  
 cc 100 -> Side Parametric EQ Band5 Level

cc 101 -> Side Side-Chain EQ On/Off  
 cc 102 -> Side Side-Chain EQ Type  
 cc 103 -> Side Side-Chain EQ Band1 Freq  
 cc 104 -> Side Side-Chain EQ Band1 Slope  
 cc 105 -> Side Side-Chain EQ Band1 Lvl  
 cc 106 -> Side Side-Chain EQ Band2 Freq  
 cc 107 -> Side Side-Chain EQ Band2 Q  
 cc 108 -> Side Side-Chain EQ Band2 Lvl  
 cc 109 -> Side Side-Chain EQ Band3 Freq  
 cc 110 -> Side Side-Chain EQ Band3 Q  
 cc 111 -> Side Side-Chain EQ Band3 Lvl  
 cc 112 -> Side Side-Chain EQ Band4 Freq  
 cc 113 -> Side Side-Chain EQ Band4 Q  
 cc 114 -> Side Side-Chain EQ Band4 Lvl  
 cc 115 -> Side Side-Chain EQ Band5 Freq  
 cc 116 -> Side Side-Chain EQ Band5 Slope  
 cc 117 -> Side Side-Chain EQ Band5 Lvl

cc 118 -> Side Gate On/Off  
 cc 119 -> Side Gate Threshold  
 cc 120 -> Side Gate Gate Ratio  
 cc 121 -> Side Gate Attack  
 cc 122 -> Side Gate Hold time  
 cc 123 -> Side Gate Release  
 cc 124 -> Side Max Attenuation

cc 125 -> Side Compressor On/Off  
 cc 126 -> Side Compressor OverEasy  
 cc 127 -> Side Compressor Auto On/Off

### 6.3- Dual Mono Chain

cc 0 -> Channel 1 TypeIV On/Off  
 cc 1 -> Channel 1 TypeIV Color

cc 2 -> Channel 1 EQ On/Off  
 cc 3 -> Channel 1 EQ Position  
 cc 4 -> Channel 1 EQ Type  
 cc 5 -> Channel 1 EQ Band1 Freq  
 cc 6 -> Channel 1 EQ Band1 Slope  
 cc 7 -> Channel 1 EQ Band1 Lvl  
 cc 8 -> Channel 1 EQ Band2 Freq  
 cc 9 -> Channel 1 EQ Band2 Q  
 cc 10 -> Channel 1 EQ Band2 Lvl  
 cc 11 -> Channel 1 EQ Band3 Freq  
 cc 12 -> Channel 1 EQ Band3 Q  
 cc 13 -> Channel 1 EQ Band3 Lvl  
 cc 14 -> Channel 1 EQ Band4 Freq  
 cc 15 -> Channel 1 EQ Band4 Q  
 cc 16 -> Channel 1 EQ Band4 Lvl  
 cc 17 -> Channel 1 EQ Band5 Freq  
 cc 18 -> Channel 1 EQ Band5 Slope  
 cc 19 -> Channel 1 EQ Band5 Lvl

cc 20 -> Channel 1 De-Esser On/Off  
 cc 21 -> Channel 1 De-Esser HP Frequency  
 cc 22 -> Channel 1 De-Esser Amount  
 cc 23 -> Channel 1 De-Esser Type  
 cc 24 -> Channel 1 De-Esser Width

cc 25 -> Channel 1 Gate On/Off  
 cc 26 -> Channel 1 Gate Threshold  
 cc 27 -> Channel 1 Gate Gate Ratio  
 cc 28 -> Channel 1 Gate Attack  
 cc 29 -> Channel 1 Gate Hold time  
 cc 30 -> Channel 1 Gate Release  
 cc 31 -> Channel 1 Max Attenuation

cc 32 -> Channel 1 Compressor On/Off  
 cc 33 -> Channel 1 Compressor OverEasy  
 cc 34 -> Channel 1 Compressor Auto On/Off  
 cc 35 -> Channel 1 Compressor Threshold  
 cc 36 -> Channel 1 Compressor Gate Ratio  
 cc 37 -> Channel 1 Compressor Gain  
 cc 38 -> Channel 1 Compressor Attack  
 cc 39 -> Channel 1 Compressor Hold time  
 cc 40 -> Channel 1 Compressor Release

cc 41 -> Channel 1 Limiter On/Off  
 cc 42 -> Channel 1 Limiter Threshold  
 cc 43 -> Channel 1 Limiter Type  
 cc 44 -> Channel 1 Limiter Attack  
 cc 45 -> Channel 1 Limiter Hold time  
 cc 46 -> Channel 1 Limiter Release  
 cc 47 -> Channel 1 Limiter Over Easy  
 cc 48 -> Channel 1 Limiter Auto

cc 49 -> Channel 1 MONO TCM On/Off  
 cc 50 -> Channel 1 MONO TCM Time

cc 51 -> Channel 1 Output Effect Bits  
 cc 52 -> Channel 1 Output Effect Dither  
 cc 53 -> Channel 1 Output Effect Shape  
 cc 54 -> Channel 1 Output Effect Dither Out

cc 55 -> Channel 1 Side-Chain EQ On/Off  
 cc 56 -> Channel 1 Side-Chain EQ Type  
 cc 57 -> Channel 1 Side-Chain EQ Band1 Fc  
 cc 58 -> Channel 1 Side-Chain EQ Band1 Slope  
 cc 59 -> Channel 1 Side-Chain EQ Band1 Level  
 cc 60 -> Channel 1 Side-Chain EQ Band2 Fc  
 cc 61 -> Channel 1 Side-Chain EQ Band2 Q  
 cc 62 -> Channel 1 Side-Chain EQ Band2 Level  
 cc 63 -> Channel 1 Side-Chain EQ Band3 Fc  
 cc 64 -> Channel 1 Side-Chain EQ Band3 Q  
 cc 65 -> Channel 1 Side-Chain EQ Band3 Level  
 cc 66 -> Channel 1 Side-Chain EQ Band4 Fc  
 cc 67 -> Channel 1 Side-Chain EQ Band4 Q  
 cc 68 -> Channel 1 Side-Chain EQ Band4 Level  
 cc 69 -> Channel 1 Side-Chain EQ Band5 Fc  
 cc 70 -> Channel 1 Side-Chain EQ Band5 Slope  
 cc 71 -> Channel 1 Side-Chain EQ Band5 Level

cc 72 -> Channel 1 Ambience  
 cc 73 -> Channel 1 Ambience Amount  
 cc 74 -> Channel 1 Ambience Width  
 cc 75 -> Channel 1 Ambience Threshold

cc 76 -> Channel 2 TypeIV On/Off  
 cc 77 -> Channel 2 TypeIV Color

cc 78 -> Channel 2 Parametric EQ On/Off  
 cc 79 -> Channel 2 Parametric EQ Position  
 cc 80 -> Channel 2 Parametric EQ Type  
 cc 81 -> Channel 2 Parametric EQ Band1 Freq  
 cc 82 -> Channel 2 Parametric EQ Band1 Slope



cc 83 -> Channel 2 Parametric EQ Band1 Lvl  
 cc 84 -> Channel 2 Parametric EQ Band2 Freq  
 cc 85 -> Channel 2 Parametric EQ Band2 Q  
 cc 86 -> Channel 2 Parametric EQ Band2 Lvl  
 cc 87 -> Channel 2 Parametric EQ Band3 Freq  
 cc 88 -> Channel 2 Parametric EQ Band3 Q  
 cc 89 -> Channel 2 Parametric EQ Band3 Lvl  
 cc 90 -> Channel 2 Parametric EQ Band4 Freq  
 cc 91 -> Channel 2 Parametric EQ Band4 Q  
 cc 92 -> Channel 2 Parametric EQ Band4 Lvl  
 cc 93 -> Channel 2 Parametric EQ Band5 Freq  
 cc 94 -> Channel 2 Parametric EQ Band5 Slope  
 cc 95 -> Channel 2 Parametric EQ Band5 Lvl

cc 96 -> Channel 2 De-Esser On/Off  
 cc 97 -> Channel 2 De-Esser HP Frequency  
 cc 98 -> Channel 2 De-Esser Amount  
 cc 99 -> Channel 2 De-Esser Type  
 cc 100 -> Channel 2 De-Esser Width

cc 101 -> Channel 2 Gate On/Off  
 cc 102 -> Channel 2 Gate Threshold  
 cc 103 -> Channel 2 Gate Gate Ratio  
 cc 104 -> Channel 2 Gate Attack  
 cc 105 -> Channel 2 Gate Hold time  
 cc 106 -> Channel 2 Gate Release  
 cc 107 -> Channel 2 Max Attenuation

cc 108 -> Channel 2 Compressor On/Off  
 cc 109 -> Channel 2 Compressor OverEasy  
 cc 110 -> Channel 2 Compressor Auto On/Off  
 cc 111 -> Channel 2 Compressor Threshold  
 cc 112 -> Channel 2 Compressor Gate Ratio  
 cc 113 -> Channel 2 Compressor Gain  
 cc 114 -> Channel 2 Compressor Attack  
 cc 115 -> Channel 2 Compressor Hold time  
 cc 116 -> Channel 2 Compressor Release

cc 117 -> Channel 2 Limiter On/Off  
 cc 118 -> Channel 2 Limiter Threshold  
 cc 119 -> Channel 2 Limiter Type  
 cc 120 -> Channel 2 Limiter Attack  
 cc 121 -> Channel 2 Limiter Hold time  
 cc 122 -> Channel 2 Limiter Release  
 cc 123 -> Channel 2 Limiter Over Easy  
 cc 124 -> Channel 2 Limiter Auto

cc 125 -> Channel 2 MONO TCM On/Off  
 cc 126 -> Channel 2 MONO TCM Time

cc 127 -> Channel 2 Output Effect Bits

## 6.4- Linked Multi-band with De-Esser Chain

cc 0 -> Linked TypeIV On/Off  
 cc 1 -> Linked TypeIV Color  
 cc 2 -> Linked TypeIV Level

cc 3 -> Linked or Middle Parametric EQ On/Off  
 cc 4 -> Linked or Middle Parametric EQ Position  
 cc 5 -> Linked or Middle Parametric EQ Band1 Freq  
 cc 6 -> Linked or Middle Parametric EQ Band1 Slope  
 cc 7 -> Linked or Middle Parametric EQ Band1 Lvl  
 cc 8 -> Linked or Middle Parametric EQ Band2 Freq

cc 9 -> Linked or Middle Parametric EQ Band2 Q  
 cc 10 -> Linked or Middle Parametric EQ Band2 Lvl  
 cc 11 -> Linked or Middle Parametric EQ Band3 Freq  
 cc 12 -> Linked or Middle Parametric EQ Band3 Q  
 cc 13 -> Linked or Middle Parametric EQ Band3 Lvl  
 cc 14 -> Linked or Middle Parametric EQ Band4 Freq  
 cc 15 -> Linked or Middle Parametric EQ Band4 Q  
 cc 16 -> Linked or Middle Parametric EQ Band4 Lvl  
 cc 17 -> Linked or Middle Parametric EQ Band5 Freq  
 cc 18 -> Linked or Middle Parametric EQ Band5 Slope  
 cc 19 -> Linked or Middle Parametric EQ Band5 Lvl

cc 20 -> Linked Stereo Adjust On/Off  
 cc 21 -> Linked Stereo Adjust Balance  
 cc 22 -> Linked Stereo Adjust Stereo-Mono

cc 23 -> De-Esser On/Off  
 cc 24 -> De-Esser HP Frequency  
 cc 25 -> De-Esser Amount  
 cc 26 -> De-Esser Type  
 cc 27 -> De-Esser Width

cc 28 -> Linked Crossover Edge1 Fc  
 cc 29 -> Linked Crossover Edge1 Slope  
 cc 30 -> Linked Crossover Edge2 Fc  
 cc 31 -> Linked Crossover Edge2 Slope  
 cc 32 -> Linked Crossover Edge3 Fc  
 cc 33 -> Linked Crossover Edge3 Slope

cc 34 -> Linked Band1 Gate On/Off  
 cc 35 -> Linked Band1 Gate Threshold  
 cc 36 -> Linked Band1 Gate Gate Ratio  
 cc 37 -> Linked Band1 Gate Attack  
 cc 38 -> Linked Band1 Gate Hold time  
 cc 39 -> Linked Band1 Gate Release  
 cc 40 -> Linked Band1 Max Attenuation  
 cc 41 -> Linked Band2 Gate On/Off  
 cc 42 -> Linked Band2 Gate Threshold  
 cc 43 -> Linked Band2 Gate Gate Ratio  
 cc 44 -> Linked Band2 Gate Attack  
 cc 45 -> Linked Band2 Gate Hold time  
 cc 46 -> Linked Band2 Gate Release  
 cc 47 -> Linked Band2 Max Attenuation  
 cc 48 -> Linked Band3 Gate On/Off  
 cc 49 -> Linked Band3 Gate Threshold  
 cc 50 -> Linked Band3 Gate Gate Ratio  
 cc 51 -> Linked Band3 Gate Attack  
 cc 52 -> Linked Band3 Gate Hold time  
 cc 53 -> Linked Band3 Gate Release  
 cc 54 -> Linked Band3 Max Attenuation  
 cc 55 -> Linked Band4 Gate On/Off  
 cc 56 -> Linked Band4 Gate Threshold  
 cc 57 -> Linked Band4 Gate Gate Ratio  
 cc 58 -> Linked Band4 Gate Attack  
 cc 59 -> Linked Band4 Gate Hold time  
 cc 60 -> Linked Band4 Gate Release  
 cc 61 -> Linked Band4 Max Attenuation

cc 62 -> Linked Band1 Compressor On/Off  
 cc 63 -> Linked Band1 Compressor OverEasy  
 cc 64 -> Linked Band1 Compressor Auto On/Off  
 cc 65 -> Linked Band1 Compressor Threshold  
 cc 66 -> Linked Band1 Compressor Gate Ratio  
 cc 67 -> Linked Band1 Compressor Gain  
 cc 68 -> Linked Band1 Compressor Attack  
 cc 69 -> Linked Band1 Compressor Hold time  
 cc 70 -> Linked Band1 Compressor Release

cc 71 -> Linked Band2 Compressor On/Off  
cc 72 -> Linked Band2 Compressor OverEasy  
cc 73 -> Linked Band2 Compressor Auto On/Off  
cc 74 -> Linked Band2 Compressor Threshold  
cc 75 -> Linked Band2 Compressor Gate Ratio  
cc 76 -> Linked Band2 Compressor Gain  
cc 77 -> Linked Band2 Compressor Attack  
cc 78 -> Linked Band2 Compressor Hold time  
cc 79 -> Linked Band2 Compressor Release  
cc 80 -> Linked Band3 Compressor On/Off  
cc 81 -> Linked Band3 Compressor OverEasy  
cc 82 -> Linked Band3 Compressor Auto On/Off  
cc 83 -> Linked Band3 Compressor Threshold  
cc 84 -> Linked Band3 Compressor Gate Ratio  
cc 85 -> Linked Band3 Compressor Gain  
cc 86 -> Linked Band3 Compressor Attack  
cc 87 -> Linked Band3 Compressor Hold time  
cc 88 -> Linked Band3 Compressor Release  
cc 89 -> Linked Band4 Compressor On/Off  
cc 90 -> Linked Band4 Compressor OverEasy  
cc 91 -> Linked Band4 Compressor Auto On/Off  
cc 92 -> Linked Band4 Compressor Threshold  
cc 93 -> Linked Band4 Compressor Gate Ratio  
cc 94 -> Linked Band4 Compressor Gain  
cc 95 -> Linked Band4 Compressor Attack  
cc 96 -> Linked Band4 Compressor Hold time  
cc 97 -> Linked Band4 Compressor Release

cc 98 -> Linked Band1 Limiter On/Off  
cc 99 -> Linked Band1 Limiter Threshold  
cc 100-> Linked Band1 Limiter Attack  
cc 101-> Linked Band1 Limiter Hold time  
cc 102-> Linked Band1 Limiter Release  
cc 103-> Linked Band2 Limiter On/Off  
cc 104-> Linked Band2 Limiter Threshold  
cc 105-> Linked Band2 Limiter Attack  
cc 106-> Linked Band2 Limiter Hold time  
cc 107-> Linked Band2 Limiter Release  
cc 108-> Linked Band3 Limiter On/Off  
cc 109-> Linked Band3 Limiter Threshold  
cc 110-> Linked Band3 Limiter Attack  
cc 111-> Linked Band3 Limiter Hold time  
cc 112-> Linked Band3 Limiter Release  
cc 113-> Linked Band4 Limiter On/Off  
cc 114-> Linked Band4 Limiter Threshold  
cc 115-> Linked Band4 Limiter Attack  
cc 116-> Linked Band1 Limiter Hold time  
cc 117-> Linked Band4 Limiter Release

cc 118-> Linked TCM On/Off  
cc 119-> Linked TCM Time

cc 120-> Linked Output Effect Bits  
cc 121-> Linked Output Effect Dither  
cc 122-> Linked Output Effect Shape  
cc 123-> Linked Output Effect Dither Out

cc 124-> Linked Normalize Effect ON OFF  
cc 125-> Linked Normalize Effect Level  
cc 126-> Linked Normalize Effect Ceiling  
cc 127-> Linked Normalize Effect Type