Merger
User's Guide

Standard & Extended Merger

The Merger is a sophisticated electronic switching box, which effects a merger between CMX, DMX, and S-Mix sources. It insures against blackouts resulting from a communication failure between the control desk and the dimmers.

Specifications

Dimensions: 484 mm x 222mm x 44 mm; 19” x 1 U high

Weight: 2 kg.

Input: 200 - 260v. 0.6A when J1 is connected to CN5 at the internal power supply.
100- 120v. 1.1A when J1 is connected to CN4.

Fuse: 2A

Standard Merger - Front and Back Panels

The Standard Merger is controlled by a co-processor.

- Output connector 1 provides a dipless crossfade from the last viable CMX/DMX transmission and to a lighting state on the back up system.
- Output connector 2 transmits the same output as connector 1 in standard DMX protocol.

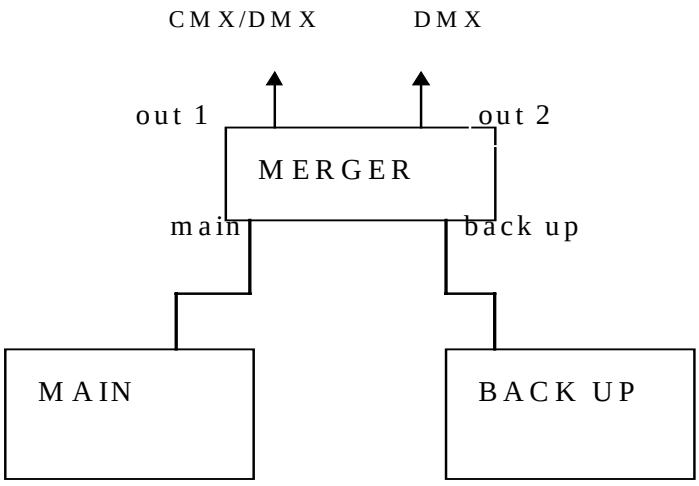


Figure 1Standard Merger- Block Diagram

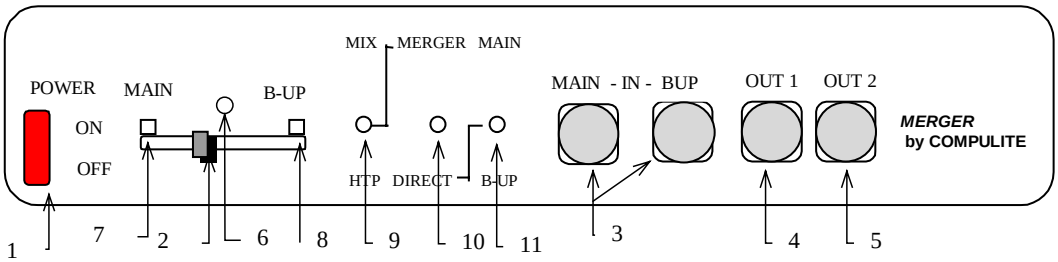


Figure 2 Standard Merger - Front Panel

1. Power Switch.
2. Selection Fader
3. 2 CMX/DMX input connectors; XLR 5 pin female (Standard Merger only, see below).
4. 1 CMX/DMX output connector; XLR 5 pin male (Standard Merger only, see below).
5. 1 DMX output connector; XLR 5 pin male (Standard Merger only, see below).
6. Merger LED - Orange LED. The flashing is a result of the amount and rapidity of DMX/CMX transmissions.
7. Main board LED - Red LED. This LED is on when the switching box is receiving transmission from the main board. If the LED is extinguished the Merger is not receiving any signals from the main board.
8. Back up board LED - A green LED. This LED is on when the switching box is receiving transmission from the back up board. If the LED is extinguished the Merger is not receiving any signals from the back up board.
9. Mix/HTP toggle.
10. Direct/Merger toggle.
11. Main/Back Up toggle.

Extended Merger - Front and Back Panels

Output connectors 2 and 3 are relay controlled.

- Output connector 1 (CMX/DMX) is co-processor controlled. It provides a dipless crossfade from the last viable CMX/DMX transmission to a lighting state on the second control board. output connector 1 is identical to output connector 1 on the Standard Merger.
- Output connector 2 switches between 2 DMX inputs.
- Output connector 3 switches between 2 S-Mix inputs.

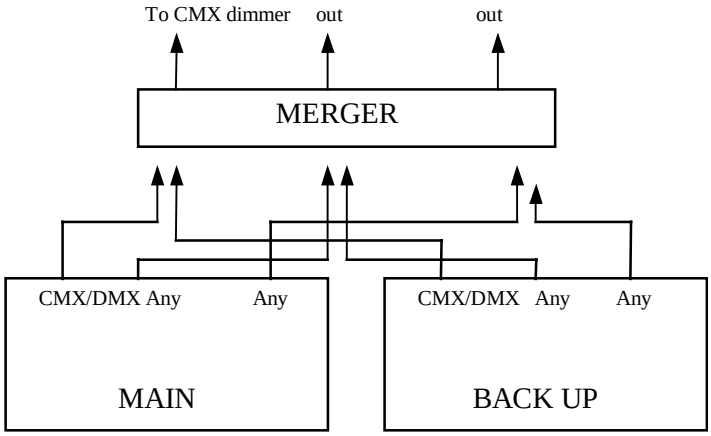


Figure 3 Extended Merger - Block Diagram

The front panel of the Extended Merger

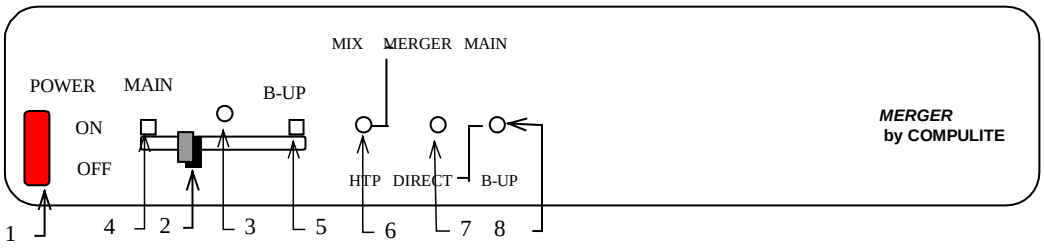


Figure 4 Extended Merger - Front Panel

1. Power Switch.
2. Selection Fader
3. Merger LED - Orange LED. The flashing is a result of the amount and rapidity of DMX/CMX transmissions.
4. Main board LED - Red LED. This LED is on when the switching box is receiving transmission from the main board. If the LED is extinguished the Merger is not receiving any signals from the main board.
5. Back up board LED - A green LED. This LED is on when the switching box is receiving transmission from the back up board. If the LED is extinguished the Merger is not receiving any signals from the back up board.
6. Mix/HTP toggle.
7. Direct/Merger toggle.
8. Main/Back Up toggle.

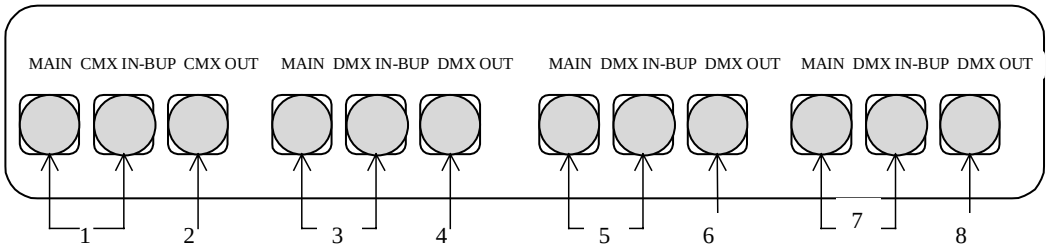


Figure 5 Extended Merger - Back Panel

1. Two CMX input connectors (main and back up); XLR 5 pin female.
2. One CMX output connector; XLR 5 pin male.
3. Two any protocol input connectors (main and back up); XLR 5 pin female.
4. One any protocol output connector; XLR 5 pin male.
5. Two any protocol input connectors (main and back up); XLR 5 pin female.
6. One any protocol output connector; XLR 5 pin male.
7. Two any protocol input connectors (main and back up); XLR 5 pin female.
8. One any protocol output connector; XLR 5 pin male.

Operation Modes

Merger-Mix

The output level of the last valid transmission is determined by the CMX/DMX input levels and the position of the selection fader.

In case of a breakdown in communications, Merger retains the last valid CMX/DMX transmission. The communication break causes an alarm, that is audible to the board operator, to sound.

What to do in case of a communication breakdown

1. Ascertain that the other control board is powered up and has a memory or group assigned to an active playback device. If the board is not on or there is no assigned lighting state, take care of that now. Merger supports the last valid transmission until you are ready to transfer control to your functioning control board.
2. Using the fader on Merger's front panel, crossfade to the functioning lighting board. This initiates a dipless crossfade between the last valid transmission (retained by Merger) and the output of the functioning board.
3. If desired, you can now rectify problem and return control to the original control board using the selection fader.

Merger-Htp *(highest takes precedence)*

In this operational mode, the highest input determines the output for each channel. This operational mode is used when both the main and the back up desks are active.

Example: If the main board operator is busy plotting and the crew on-stage is busy focusing, set the Merger to the HTP operational mode. This allows both operators to work simultaneously.

What happens in the case of a communication breakdown

When one of the control boards fails

If the selection fader is at the limit of its travel (set to Main or Back Up), and communication is disrupted from one of the boards, an automatic 4 second fade occurs between the last valid transmission from the failed board and the output of the board that is still viable.

It is recommended moving, if necessary, the selection fader to the viable board. Example: If the selection fader is at main and the main board fails, the output from the back up board continues unabated. Move the selection fader to Back Up.

If the fader is not at the limit of its travel when a communication is disrupted, the selection fader behaves as a submaster. The output level of the viable board will be at a level equal to the level of the selection fader. Manually moving the selection fader will fade up or fade down the current output.

When both of the control boards fail

If the communication from both of the control boards is disrupted the merger maintains the last viable transmission. The output levels are relative to the selelection fader level. The

selection fader can be used to manually fade to a black out and manually fade back to the last viable transmission.

Merger-Direct

This is a fall back switch, which allows you to switch mechanically between the two control boards. This switch bypasses Merger's electronics.

➢Note

Even when the Merger is switched off the Direct switch allows you to switch between consoles.

Connector 1 (CMX/DMX)

MERGER SWITCH POSITIONS / OUTPUT SOURCES / ACTION ON COMMUNICATIONS DISRUPTION

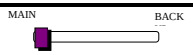
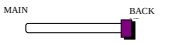
FRONT PANEL SWITCHES				OUTPUT			
mix/htp	**merger/ direct**	**main/ backup**	**selection fader position**	**synchronized to**	**# of dimmer outputs**	**output level from**	**communication break**
***	Direct	Main	***	Main	# of main outputs	main	Manually switch to backup.
***	Direct	Backup	***	Backup	# of backup outputs	back up	Manually switch to main.
mix	Merger	***		Main	# of main outputs	main	The last transmission is retained. Move the fader to Back Up.
mix	Merger	***		Backup	# of backup outputs	backup	The last transmission is retained. Move the fader to Main.
HTP	Merger		Not important	Main	Max # of outputs from main & backup	Main & backup outputs (HTP)	Fades to Backup output
HTP	Merger		Not important	none	Max # of outputs from main & backup	Main & backup output (HTP)	Fades to Main output
HTP	Merger		Not important	Backup	Max # of outputs from main & backup	Main & backup output (HTP)	Fades to Backup output

Table 1 - OUT 1 CMX/DMX

ALL OTHER CONNECTORS

Any protocol - OUT DMX/OUT HIGH END/OUT S-MIX

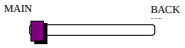
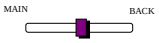
FRONT PANEL SWITCHES				OUTPUT	
mix/htp	**merger/ direct**	**main/ backup**	**selection fader position**	**output level from**	**communication break**
***	Direct	Main	***	Main	Manually switch to backup.
***	Direct	Backup	***	Back up	Manually switch to main.
Mix	Merger	***		Main	Move the fader to Back Up.
Mix	Merger	***		Last transmission source until moved to limit	Move the fader to the viable output source.
Mix	Merger	***		Backup	Move the fader to Main.
HTP	Merger	***		If the input is only from main, the output is from main.	No action necessary.
HTP	Merger	***		If the input is only from back up, the output is from backup.	No action necessary.
HTP	Merger	***		If the input is from both or neither, no change in the output.	No action necessary.

Table 2 - OUT DMX/OUT S-MIX