



Getting Started Guide FREEWAY

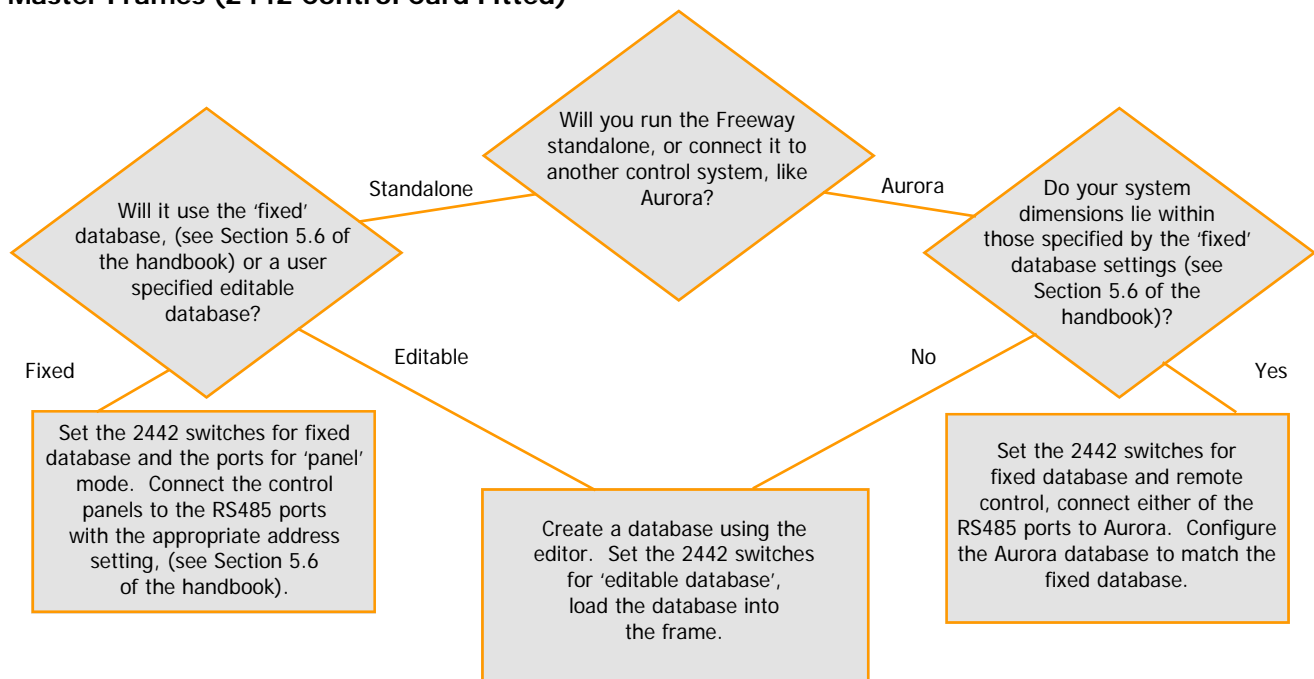
This leaflet is designed for quick reference only, and the user will have to refer to the User Guides for both Freeway and Nebula for detailed information. Nebula is the Pro-Bel router control system included with a Freeway router.

Controlling Your Router

A Freeway routing system requires a 2442 control card, which will be fitted as a sub-module on a routing card, usually the top one in the frame. Switches on the 2442 card determine the system operation, as detailed below. Freeway requires a control database in order to function. You may select a 'fixed' database, or edit your own using the Pro-Bel Nebula Editor supplied with the router. The router has a basic 'editable' database already installed to match your router dimensions, but will not have any control panels configured, unless these are shipped with the system. Use this flow chart, in conjunction with the manual to configure your system.



Master Frames (2442 Control Card Fitted)



Slave Frames (No Control Card Fitted)

Using a control bus expansion cable, connect the frame to a Master frame. Configure the master system as above.

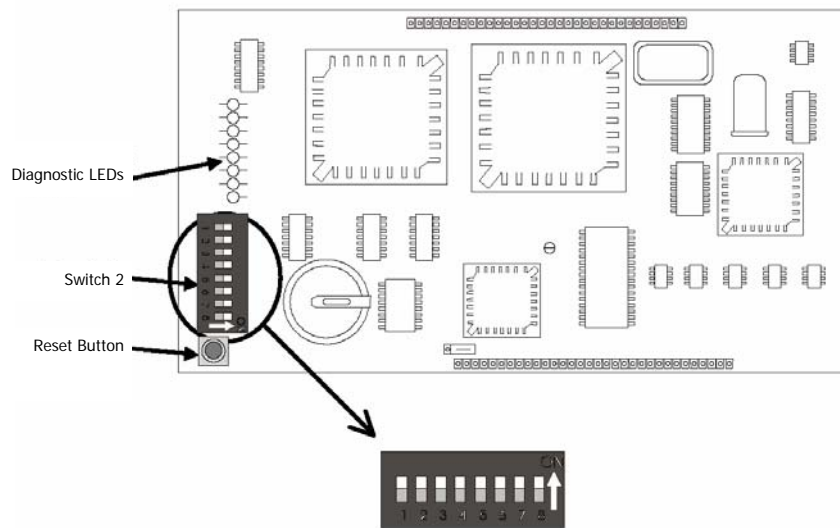
Configuration Switches

Switch SW2	Function	Selection	
		OFF/UP	ON/DOWN
1	Master/Slave Select	Slave	Master
2	µP Clock Select	10 MHz	20 MHz
3	System Run Mode	Normal	Test
4	RS232 Port Baud Rate	9600	38400
5	Default Trigger Select	625	525
6	Re-Configure	Manual	Auto
7	Database Type	Fixed	Configure
8	Control Mode	General	Panels

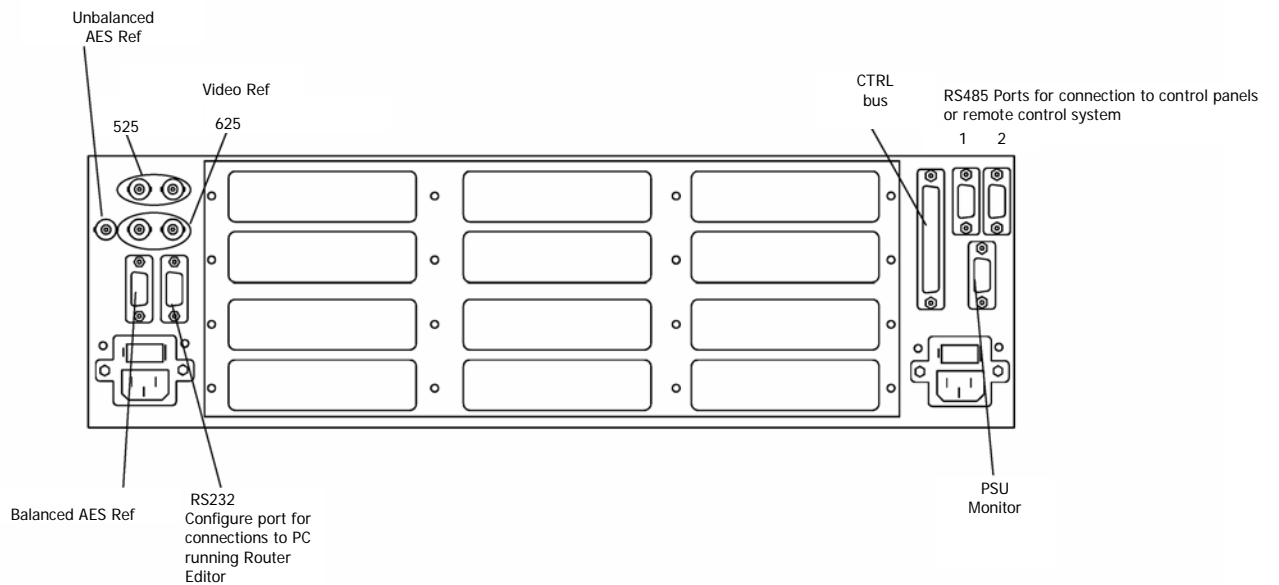
Switch Descriptions

- 1 Master/Slave Select** is used, in dual control situations, to assign Master/Slave status to the 2442 control modules. One module would be set to MASTER and the other to SLAVE so that on reset or power up the Master 2442 powers up first and, hence, always becomes the active controller.
- 2 µP Clock Select** is used to select between 10 MHz and 20 MHz µP clock frequency, the lower rate is only used for debugging purposes.
- 3 System Run Mode** determines which mode of operation the Freeway powers up in (i.e. NORMAL or TEST). NORMAL is the standard mode of operation. TEST selects a special test mode where various features of the 2442 hardware can be tested by Pro-Bel.
- 4 RS232 Port Baud Rate** select. This port is used by the Windows database editor which runs on a PC using it's COM port. The editor software will automatically detect the BAUD rate configured, and therefore this rate only needs changing to 9600 BAUD if the PC being used has difficulty communicating at 38400 BAUD.
- 5 Default Trigger Select** is used to select between the 625 or 525 analogue video reference when using the fixed database.
- 6 Reconfigure** selects between AUTOMATIC reconfigure of cards in the system on power-up or reset and MANUAL, in which the system configuration is compared to that held in non-volatile memory. It is recommended that during initial configuration the switch be set to AUTO, and when the final desired configuration is achieved, the switch changed to MANUAL. In this way the control card will always look for the intended system card configuration, and if cards or slave systems appear after the initial power-up, they will not be de-configured from the system.
- 7 Database Type** selects whether to use the fixed, non-editable database or the editable one.
- 8 Control Mode** is used in conjunction with sw2_7 to select which protocol the serial control ports will use. 'GENERAL' configures both RS485 ports to support General Switcher protocol. 'PANELS' configures both RS485 Remote ports to support Multi-drop Comms protocols.

View of 2442 control sub-board (fitted as sub-module on router card)



Connecting Your Router



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FREEWAY

General Points

Freeway routers are available in three family types, **Freeway 32**, **Freeway 64** and **Freeway 128**, each family type offers a range of configuration sizes up to a maximum defined by the family number, that is, 32 x 32, 64 x 64 or 128 x 128 respectively. **Freeway 32** and **64** are available for all signal variants, but the **Freeway 128** range is only available in audio, RS422 and timecode formats. In addition **Freeway** input cards, providing 16 channel input modules, may be used with any of the video and audio routers in the Freeway 32, 64 or 128 ranges. In using these input modules with the standard signal cards, each range can be configured to provide routers from 16 x 16 to the maximum permitted size for each range in either 16 input or 16 input/ output blocks.

By designing each signal-type module to require identical PSU and support functions, any combination of signal types may be housed in the same chassis. So that, for instance, a 32x32 SDV and stereo audio switcher can be housed within the same frame.

Two frame variants are available for the Freeway range, one 3U; accommodating a total of 4 signal cards, while the 6U variant houses up to 8. Typically, Freeway 32 and 64 routers along with the Freeway 128 RS422 and timecode systems use the 3U, whilst Freeway 128 audio routers use the 6U frame. However, as these frames can accommodate any modules in the Freeway range, smaller audio routers may be housed in the 3U frame while Freeway 32 and 64 cards can share a 6U frame with Freeway 128 modules.

Freeway's modularity ensures that your switcher can change as your requirements do, permitting routers to be 'plug and play' upgraded in the field to their maximum size. Similarly a predominantly analogue router can gradually be 'transformed' into a digital router (by swapping analogue sixteen square modules for digital alternatives) as your installation requirements evolve.

Power Supplies

By utilising advanced PSU circuit topology and the latest signal switching technologies, **Freeway** offers a very compact router with low power dissipation, ensuring 'fit and forget' reliability. For extra security, each frame has provision for redundant PSU modules, providing a main and backup architecture in the event of a PSU failure. The high-speed converter technology in the PSU is monitored by two onboard microprocessors that assess the condition of the mains and of the supplies leaving the power unit. Should any of the PSUs 'vital-signs' show a warning condition these are monitored and, if appropriate, an external warning alarm may be activated. **Freeway** PSUs may be withdrawn from the unit from the front and a replacement 'hot-plugged'; thereby ensuring continuous service.

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