

Eyesight Product Information

User Guide For: NS-21 2 Input, 2 Output video switch

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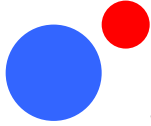
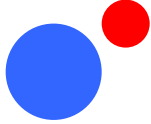
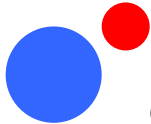
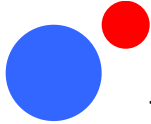
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1 System Overview

This manual describes the function of the NS-21. This unit is an electronic SDI Video switcher. The input video is simply switched and reclocked to the output. One input can be replaced by an analogue reference source, which enables the system to be set up and cut on any line. A mechanical relay bypass is enabled if the power is removed and provides connection between input 1 and the output.

The NS-21 is a unit that will accept four SDI video inputs, (or three and a analogue reference source) and has one SDI output.

The main features are :-

- 2 inputs, 2 outputs SDI video switch.
- 1 input for an analogue reference input for switching on a particular line.
- A mechanical relay bypass, from input 1 to the output.
- Control by FP-9 control panel. 2 LCD legendable pushbutton switches for control.
- GP-2 GPI card available for remote GPI control.

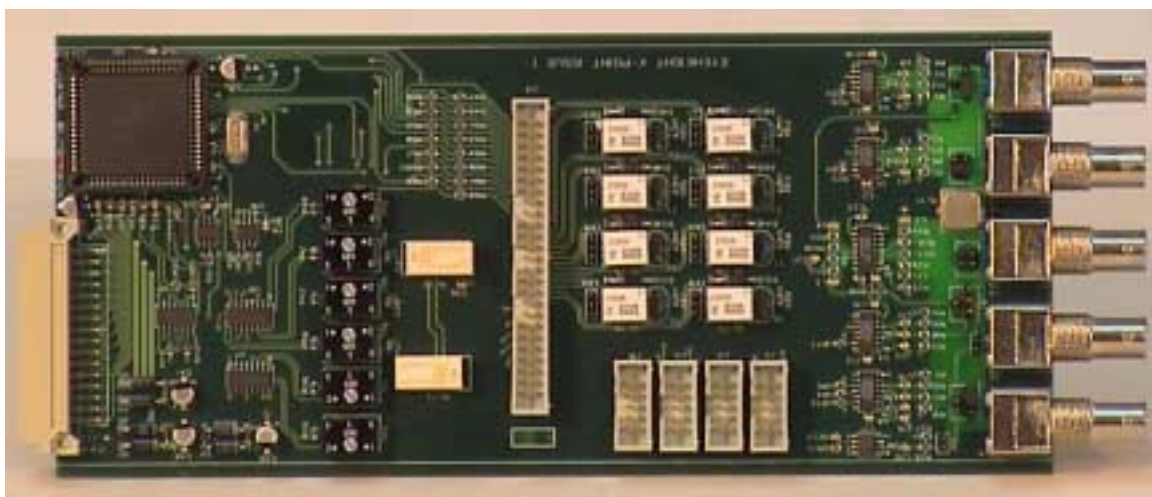


Figure 1-1 The NS-21 Module

1.1 Applications for the NS-21

Applications for the NS-21 include the following:-

- A preview switcher .
- Emergency bypass switching.

1.2 Associated Equipment for the NS-21

1.2.1 Hardware Requirements

The NS-21 is a module and requires both a chassis and a control surface to function. In it's simplest form and system would consist of:-

- 1 off NS-21 Modules
- 1 off FB-9 Flexi-box
- 1 off FP-9 FlexiPanel

1.2.2 Software Requirements

There are no special software requirements. The system is controlled via the front panel, however, it may be alternatively controlled by the Eyeheight front panel emulator, SoftPanel which runs on a PC.

Chassis Types Available :-

- The 1RU chassis is called a **FlexiBox** (Order code FB-9) This will hold a maximum of 6 NS-21 Modules.



Figure 1-2 FB-9 FlexiBox With Modules Fitted

2 Installation

2.1 Installation of the NS-21 product

If this unit is already pre-installed in a FlexiBox (FB-9) with either a local or remote panel from the Factory then refer to the "Hardware Installation Guide" which will be enclosed with the system.

If this unit has been ordered separately we assume here that you already have a FlexiBox system with a FlexiPanel and that the FlexiBox has at least two spare slots, one above the other, for the NS-21 card.

2.2 Installing the NS-21 into a FlexiBox

To install the NS-21 into a FlexiBox it is desirable (but not necessary) to power down the flexi-box. Follow these instructions.

1. On the rear of the FlexiBox are 6 slots for Products. Remove any pair of spare blanking plates one above another. There are 2 M2.5 Screws, which require unfastening for each blanking plate.
2. Slide the Product PCB into the spare slots and firmly push it "home".
3. Use the two thumbscrews to fasten the unit in place. Take care that the ribbon cable for the upper circuit board stays attached to the lower board.
4. Now refer to the "GeNETics User Guide". If your system consists of a single FlexiBox with a single FlexiPanel then refer to the section titled "FlexiPanel Auto Set-up". If your system is part of a network with more than one FlexiPanel then refer to the section titled "FlexiPanel Manual Set-up". This will guide you through acquiring your product as a device on the FlexiPanel.

2.3 Connecting Video to the NS-21

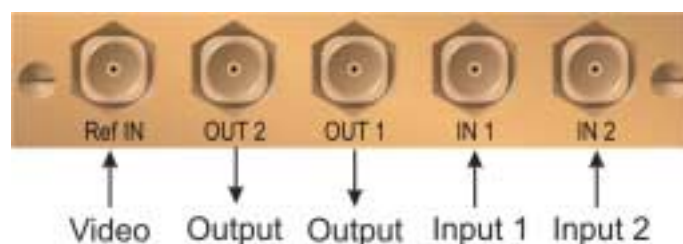


Figure 2-1 Pin Out of NS-21 module.

3 Operation

3.1 Control of the NS-21

Control of the NS-21 is generally done using an FP-9 Flexi panel. It is also possible to control this unit with an FP-10 Panel (Desktop Panel). The unit can also be controlled remotely using a PC running the SoftPanel software.

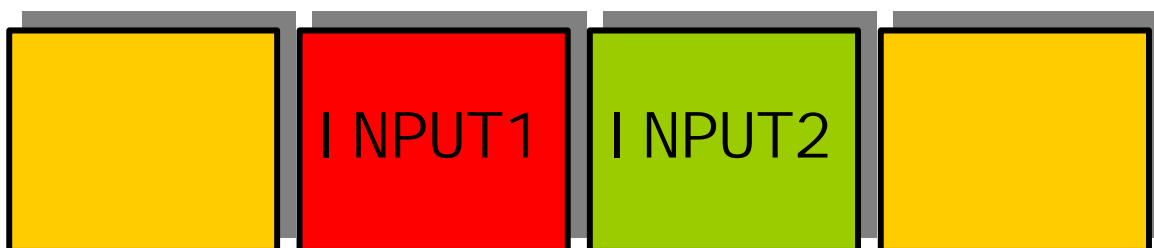
The NS-21 is, as are all genetics modules, controlled using a set of **menus**. Each of these menus contains up to 3 parameters that are adjusted using the rotary 'digipots'. The Menus define all of the adjustable operational parameters in the NS-21. Pressing the rotary 'digipots' brings the parameter to its default value. Device selection is done using the device select switches which, when pressed, will offer the name of the device in the LCD Window. Modules can be acquired and then de-acquired using the set-up switch. For a full description of the operation philosophy of the GeNETics system refer to the "geNETics User Guide" (section "Operation of the FlexiPanel")

A full list of the Menus and their functions are given in the following section.

3.2 Operation menus for the NS-21

The following set of menus defines the operation of the NS-21.

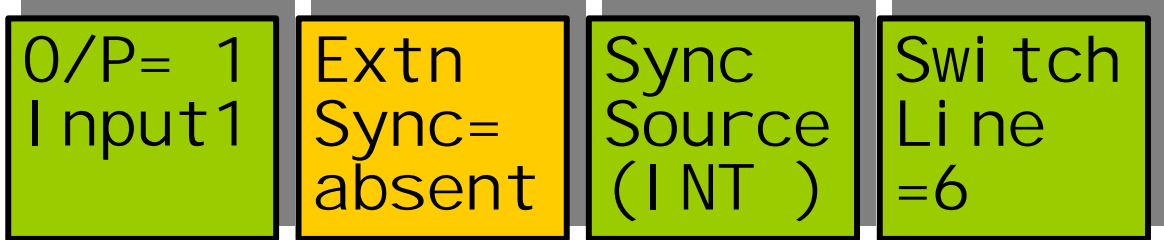
3.2.1 Menu 00-03: Top level controls



Menu Num.	Heading	Automation	Function
0			
1	INPUT 1 (user defined)	1=switch output to this input.	Pressing this button switches the output to this input. The switch lights up red to indicate when selected.
2	INPUT 2 (user	1=switch output to	Pressing this button switches the output to this input. The switch

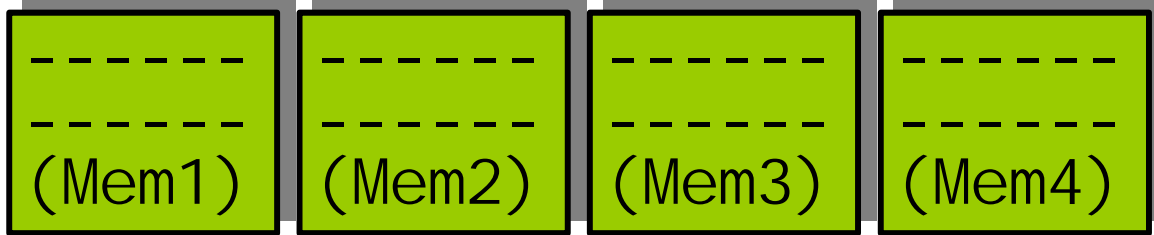
	defined)	this input.	lights up red to indicate when selected.
3			

3.2.2 Menu 04-07: Set up Controls



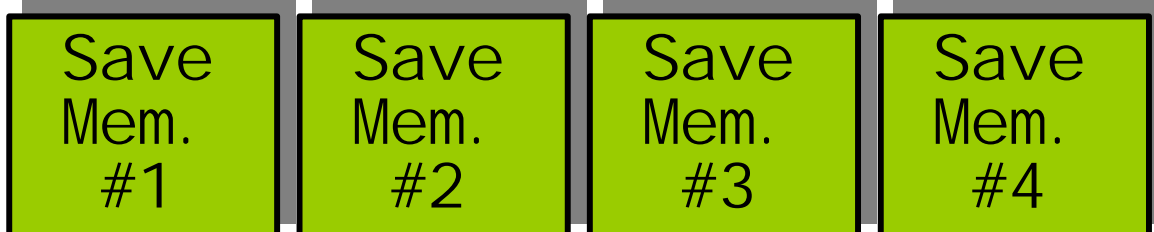
Menu Num.	Heading	Automation	Function
4	O/P= 1 INPUT 1 (user defined)	1 to 2 (default is 1)	This button will select which input is routed to the output. Pressing return will bring up a cursor enabling the user to type their required label for the currently selected input. Pressing return again will store the new label and return to normal operation.
5	Extn Sync= absent	Info only	This menu indicates the presence or absence of external syncs.
6	Sync source (INT)	0=Auto, 1=INT 2=EXT (default is 1=INT)	This menu option selects the sync source used to synchronise the line switching of the inputs. The options are using the Internal reference, an External input or automatically trying to lock to an internal source when present.
7	Switch Line =6	1 to 288 (default is 6)	This option selects on which video line the inputs are switched between inputs.

3.2.3 Menu 12-15: Memory Controls



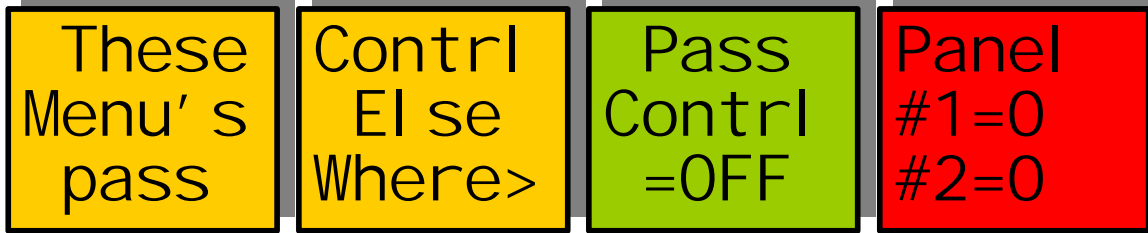
Menu Num.	Heading	Automation	Function
12	MEM1	1=Recall	Pressing this will recall Memory number 1.
13	MEM2	1=Recall	Pressing this will recall Memory number 2.
14	MEM3	1=Recall	Pressing this will recall Memory number 3.
15	MEM4	1=Recall	Pressing this will recall Memory number 4.

3.2.4 Menu 20-23: Memory Controls continued



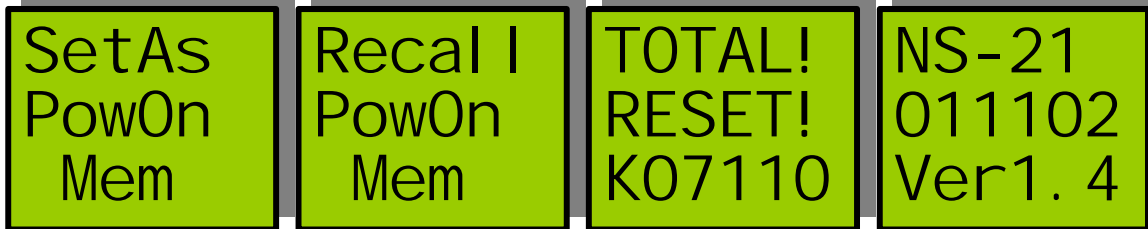
Menu Num.	Heading	Automation	Function
12	Save Mem. 1	1= Save	Pressing this will Save Memory number 1.
13	Save Mem. 2	1= Save	Pressing this will Save Memory number 2.
14	Save Mem. 3	1= Save	Pressing this will Save Memory number 3.
15	Save Mem. 4	1= Save	Pressing this will Save Memory number 4.

3.2.5 Menu 20-23: Control Menus



Menu Num.	Heading	Automation	Function
20	Info	none	Information
21	Info	none	Information
22	Pass Control	1= on	Pass control
23	Info	none	Information

3.2.6 Menu 24-27: Reset options



Menu Num.	Heading	Automation	Function
24	Set As Pow On Memory	1=save	Pressing this will save the current set up as the power on default.
25	Recall Pow On Memory	1=Recall	Pressing this will recall the power on default settings.
26	TOTAL RESET	1=Reset	Pressing this will reset the system.
27	NS-21 040302 Ver1.4	N/A	Information about the current issue of software.

4 Technical Appendix

4.1 Technical Specification for the NS-21

Number of Inputs	3 Input BNCs
Type of Inputs	2 off 270Mbit Serial Digital Video Inputs 75Ohm, and one BNC acts as a video input to enable synchronised switching.
Line Length	At least 200 Meters of PSF1/3 (Typically 275 Meters)
Number of Outputs	2 Output BNCs
Type Of Outputs	270Mbit Serial Digital Video Outputs, 75 Ohm, 800mV
Total Number Of BNC Connections	5, consisting of 3 Inputs, and 2 outputs.
SDI Output Jitter	The system will add less than 0.2UI to the input Jitter. (This is only guaranteed on issue 2 or later cards)
Current Consumption	<800mA at +5V
Size	215mm by 100mm

4.2 I-BUS (CAN-BUS) Termination

The I-BUS Network is the "control system" under which all Products and Panels are networked together. Under certain circumstances it is necessary to terminate the network. This can be done on a Panel or a "Product". To terminate this product, locate J5 on the NS-21 Processor Card supplied which is between U1 (The large square "chip") and the Edge connector. (This is on the half of the card labelled "CHP-100 Spartan2 Processor"). Jumper this with a 2mm link.



Figure 4-1 Location of I-Bus Termination