

IQDMSDS Multi-standard Digital Decoder

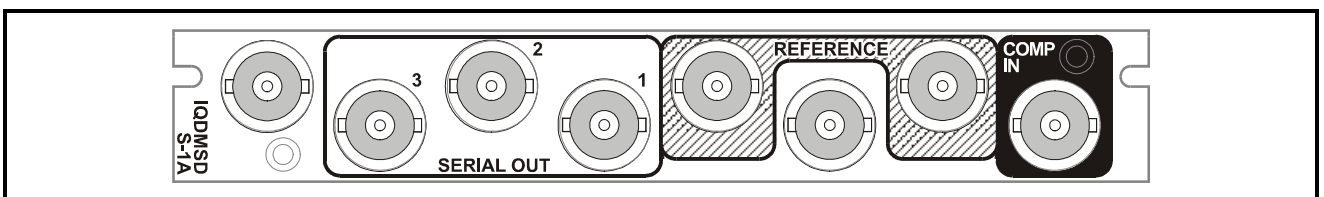
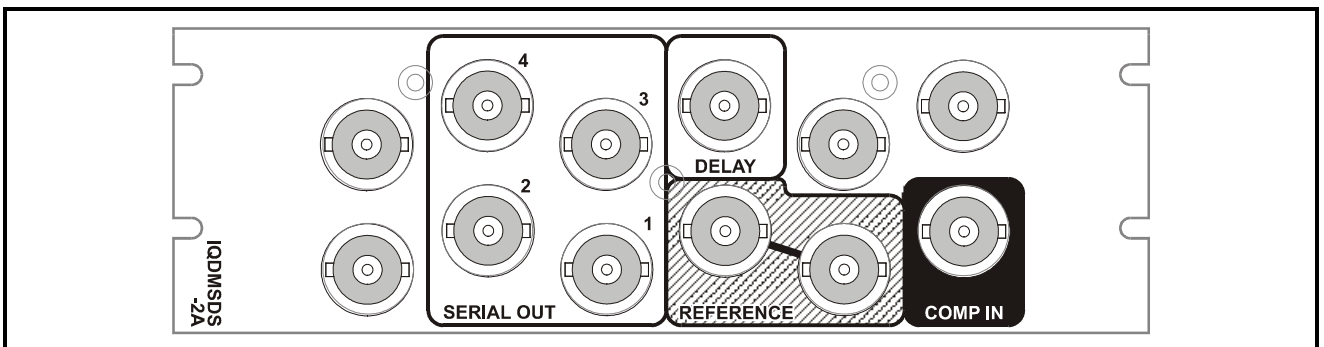
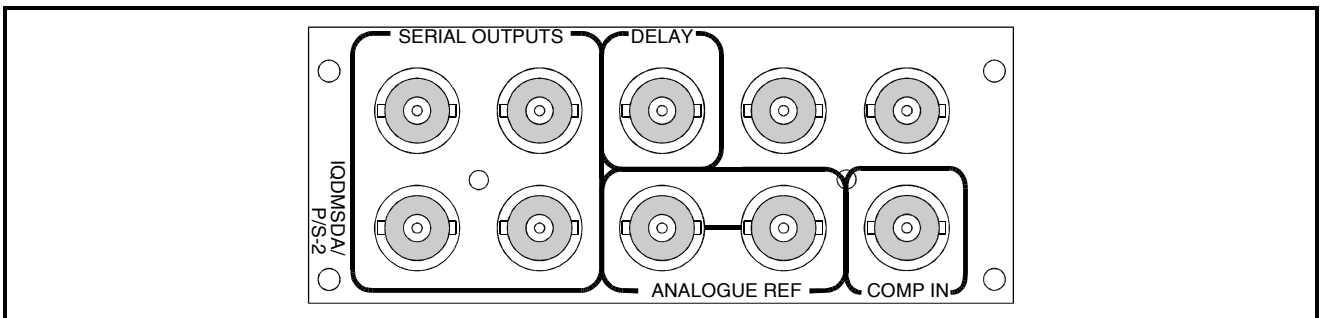


Module Description

The IQDMSDS module accepts a composite input in any one of six standards (PAL/NTSC/PAL-N/PAL-M/N4.4/SECAM) which it digitises to 10-bits (8-bits for SECAM). This is decoded, selecting between either adaptive line combs or conventional low pass/high pass filters. The decoded signal is then

passed through a full frame synchronizer that can re-time the video to a studio reference black burst. The re-synchronized video is then converted to a component serial output with switchable embedded EDH.

REAR PANEL VIEWS



Versions of the module cards available are:

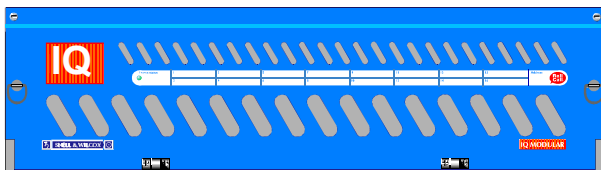
IQDMSDS-2-0
 IQDMSDS-2A-0
 IQDMSDS-1A-0

For details refer to “Feature Variations” on page 4

Note that there are two styles of rear panels available. They are not interchangeable between the two styles of enclosures. However, the cards may be fitted into any style of enclosure.

‘A’ Style Enclosure

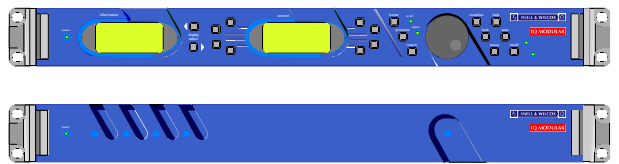
Rear panels **with** the suffix A may only be fitted into the ‘A’ style enclosure shown below.



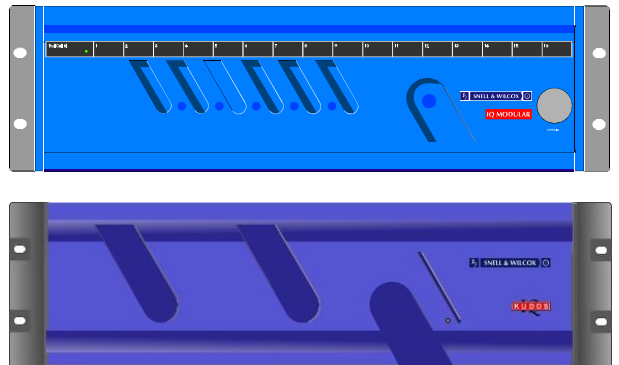
(Enclosure order codes IQH3A-E-O, IQH3A-E-P, IQH3A-N-O, IQH3A-N-P)

‘O’ Style Enclosures

Rear panels **without** the suffix A may only be fitted into the ‘O’ style enclosures shown below.

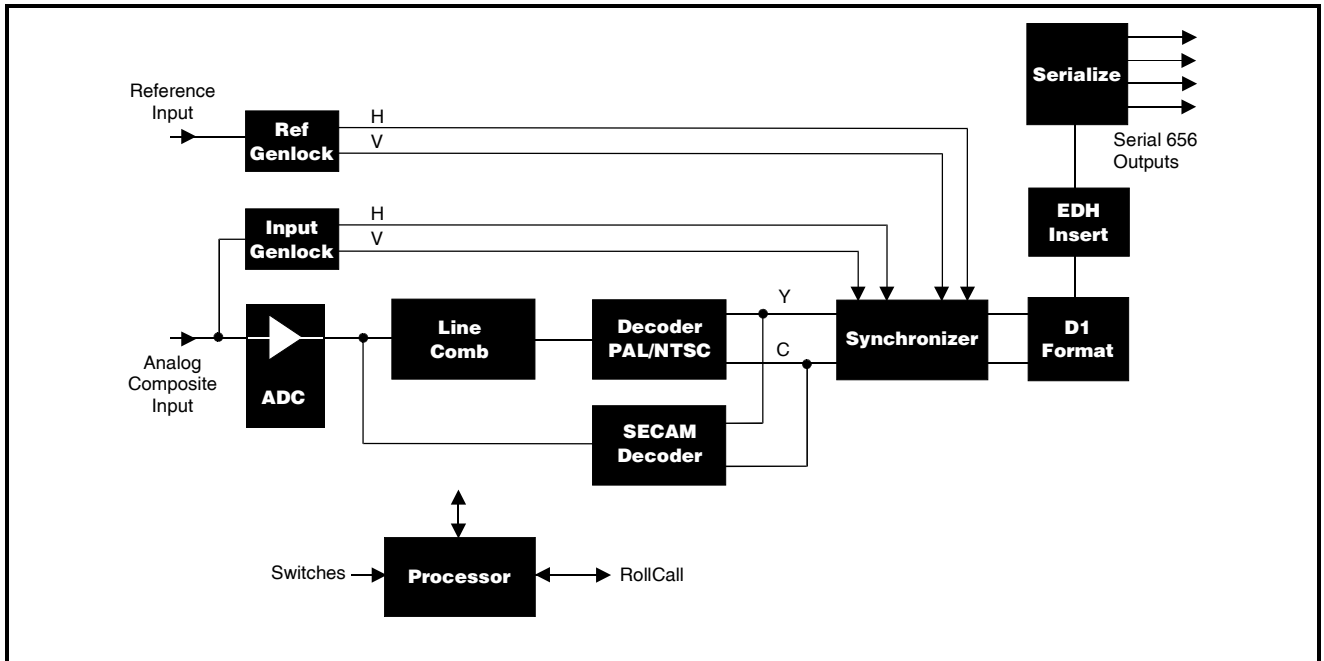


(Enclosure order codes IQH1S-RC-O, IQH1S-RC-AP, IQH1U-RC-O, IQH1U-RC-AP, Kudos Plus Products)



(Enclosure order codes IQH3N-O, IQH3N-P)

BLOCK DIAGRAM



Features

- Multi-standard decoding of PAL/NTSC-M/PAL-M/PAL-N/NTSC4.43/NTSC-J/ SECAM
- 10-bit sampling
- Multi-mode operation:
 - Adaptive line comb filter (not SECAM)
 - Simple mode decoding
 - Full proc. amp controls
 - Full frame synchronizer with phase controls
 - Minimum delay mode (not for SECAM or VHS)
 - RollTrack output
 - 4 x 10-bit serial 4:2:2 outputs
 - Switchable EDH insertion
 - RollCall™ compatible
 - Test pattern generator
 - 20-character caption generator
 - 4 nameable user memories per colour standard

Technical Profile

Features

Signal Inputs

Composite Video	1 x Differential input
Standards	PAL/NTSC//NTSC-J/PAL-M /PAL-N/SECAM/N4.43
Reference.....	1 x Loop-through

Signal Outputs

10-bit Serial Digital	4 x SDI outputs
Standards	SMPTE 259M-C-1997
Delay Flag	1 output

Processing

3 Decoder Modes	Adaptive 10-bit Line Comb (not SECAM) Simple Mode Pass Through
Sampling	10-bit

Card Edge Controls (also available via RollCall)

Input Standard.....	PAL/PAL-M/PAL-N/ NTSC-M/ NTSC-J/SECAM/ NTSC4.43
Decode Mode	Adaptive 10-bit Line Comb Simple Mode Pass Through
Test Pattern Select.....	Black/100% Color bars/75% Color bars/Multiburst (not SECAM)
Video Gain	+6 dB to -3 dB
Black Level.....	±75 Units (Approximately 120 mV)

Chrominance Gain	±3 dB
NTSC Hue	±30°
Y/C Delay	-222 ns to +148 ns in 74 ns steps
H-Phase.....	±31968 ns in 37 ns steps
V-Phase.....	±7 lines in 1 line steps
Picture Position.....	±2220 ns in 148 ns steps
VITS Pass	Pass or Strip
EDH Insertion	On/Off
Preset Unit	

Functions Available via RollCall™ Only

Decode Mode Reporting	Reports Decoder Mode (Field, Line or Simple) or Pattern
Input Standard Reporting ...	Reports PAL/PAL-M/PAL-N/ NTSC/SECAM/NTSC4.43
Signal input State Reporting	
Reference State Reporting	
Preset Unit	
Edit Caption	
Caption	On/Off
Save Memory.....	4 Memories for each decode standard (total of 28)
Read Memory	4 Memories for each decode standard (total of 28)
Clear Memory	Independent clearing of each memory location
Name Memory	20 Character user name

Specifications

Y Frequency Response.....	5.5 MHz ± 0.2 dB (not SECAM)
Y Frequency Response.....	3.0 MHz -3 dB (SECAM Input)
Signal/Noise Ratio	Better than 62 dB Weighted
PbPr Frequency Response	1.5 MHz -3 dB
2T Pulse-Shape k-rating	Better than 1%
Y-C Timing Error.....	Better than 25 ns
Y non-linearity Error	Better than 1%
Subcarrier Rejection	better than 46 dB (Test signal Modulated Staircase)
Insertion Delay	3 lines (Minimum delay mode)
Input Return Loss (Analog)	Better than -35 dB at 5 MHz
Output Return Loss (Digital)	Better than -15 dB to 270 MHz

Power Consumption

Module Power Consumption	10.4W max
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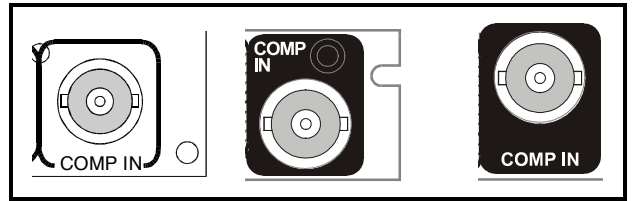
FEATURE VARIATIONS OF THE IQDMSD CARDS

FEATURE	IQDMSDP	IQDMSDA	IQDMSDN	IQDMSDD	IQDMSDS
Crystal lock for stable inputs	YES	YES	YES	YES	YES
Has VHS Mode	YES	YES			YES
Has frame synchroniser	YES	YES			YES
8 bit Decoding	YES	YES			YES
10 bit Decoding	YES	YES	YES	YES	YES
Has delay flag output (Frame Synchroniser)/RollTrack	YES	YES			YES
Decodes NTSC/PAL/PAL-M/PAL-N standards	YES	YES	YES	YES	YES
Decodes SECAM	YES	YES			YES
Decoder Mode: Adaptive Field Comb	YES	YES	YES	YES	
Decoder Mode: Adaptive Line Comb	YES	YES	YES	YES	YES
No reference input indication	YES	YES			YES
Recursive Noise Reducer	YES		YES		
Auto standard detect	YES	NO	YES	YES	NO
EDH Insertion	YES	YES	YES	YES	YES
Field Freeze	YES	YES			YES
Has user memories	YES	YES	YES	YES	YES
Caption Generator	YES	YES	YES	YES	YES

INPUTS AND OUTPUTS

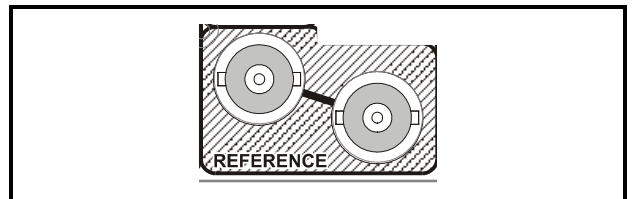
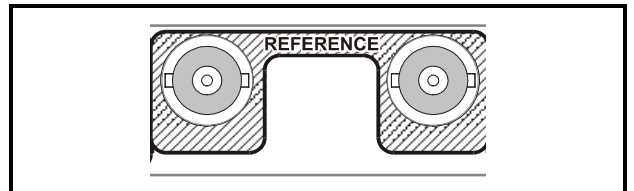
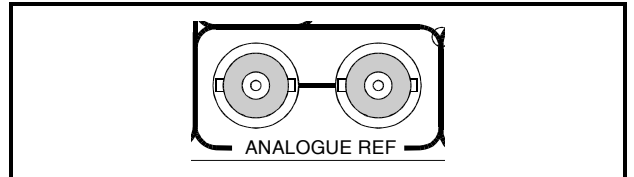
COMPOSITE INPUT

The connector is the composite video input to the decoder via a BNC connector terminated in 75 Ohms.
Nominal input level is 1V p-p.



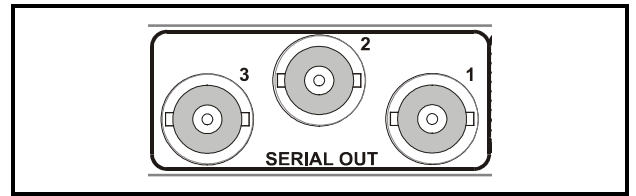
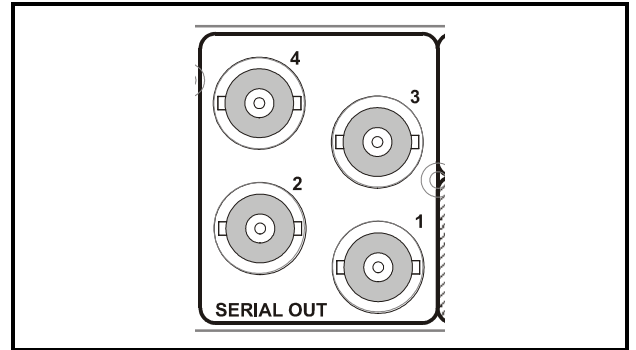
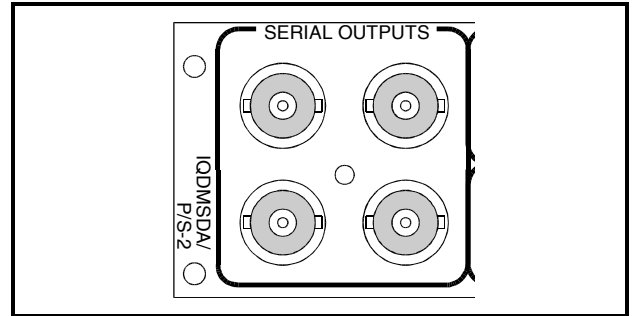
ANALOGUE REF INPUT

These are the loop-through connections via BNC connectors for 75 Ohms, for a black burst reference signal for the synchroniser.



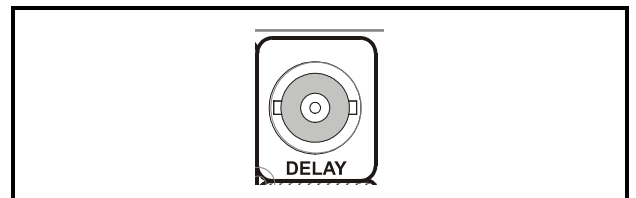
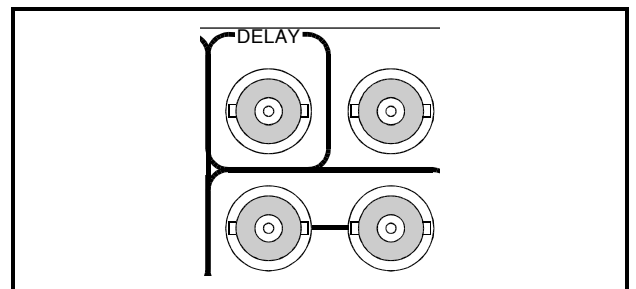
SERIAL OUTPUTS

These are the Serial Digital outputs of the unit via BNC connectors for 75 Ohms.

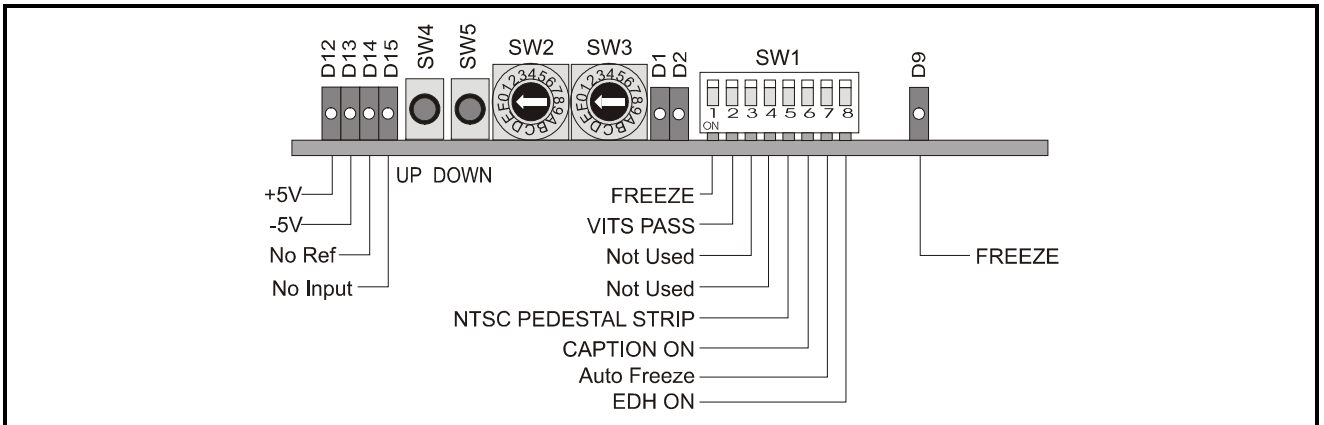


DELAY OUTPUT

This connector provides a signal that represents the delay time through the synchroniser. The output is high (+3 V) for the duration of the delay and low at other times.



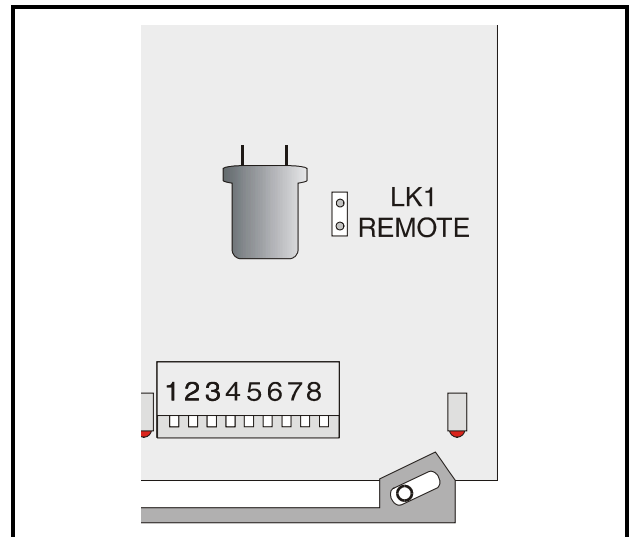
CARD EDGE CONTROLS



The unit will respond simultaneously to either remote RollCall commands or card-edge control settings.
The current settings are saved in an on-board memory.

If the remote link (LK1) is fitted the saved control settings are used when the unit is powered-up.

If the remote link (LK1) is not fitted the unit will take its control settings from the card edge switches where possible and otherwise will use the default settings.

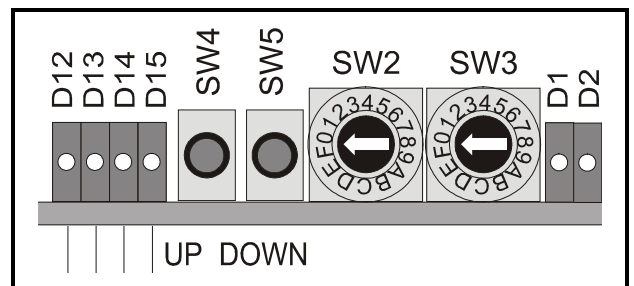


LED INDICATORS D12, 13, 14 & 15

When illuminated D12 indicates that the +5 V supply is present and D13 indicates that the -5 V supply is present.

When D14 is illuminated this indicates that the unit is not receiving a reference input signal.

When D15 is illuminated this indicates that the unit is not receiving a video input signal.



SW4, SW5, SW2 & SW3

These two push buttons and two Hex switches allow various functions and modes to be set.

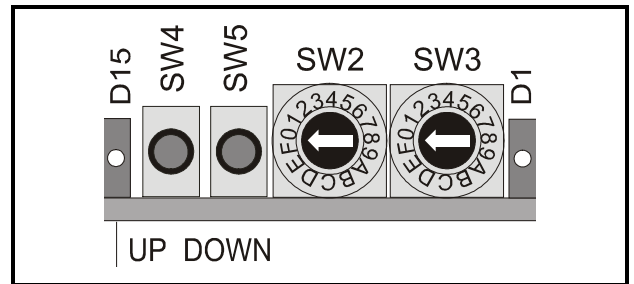
SW2 selects a particular function and SW3 selects the mode or value of that function.

To change a function select the required function with SW2 and change the setting using SW3 or the push buttons SW4/SW5. The setting will be saved after the value remains unchanged for a few seconds.

To change another function setting use SW2 to select the new function.

The push buttons SW4 & 5 allow the value of the selected function to be adjusted.

SW4 (UP) increases the value and SW5 (DOWN) decreases the value; D1 and D2 indicate which direction away from the default position that is currently set.



Note that to select the default value both buttons should be pressed together. D1 and D2 will both be extinguished when the default position reached.

The various modes and selections made with SW2 & SW3 are detailed in the table below:

FUNCTION AND MODE SELECTIONS

SW2 SETTING	SW3 SETTING						
	0	1	2	3	4	5	6
0 Standard		PAL	NTSC	PAL-N	PAL-M	SECAM	NTSC4.43
1 Decode Mode	Line Comb	Simple	Pass-Through				
2 Default Output(1)	Black	100% Bars	75% Bars	Multiburst			
3 Pattern (2)	Video	Black	100% Bars	75% Bars	Multiburst		
4 Video Gain	Use Buttons						
5 Black Level	Use Buttons						
6 Chroma Gain	Use Buttons						
7 NTSC Hue	Use Buttons						
8 Genlock Mode	Genlock	Min Delay	Freerun				
9 YC Delay	Use Buttons						
A H-Phase	Use Buttons						
B V-Phase	Use Buttons						
C Picture Position	Use Buttons						
D Unused							
E Unused							
F Preset	Press both buttons together to preset unit						

(1) Default Output mode not available in SECAM mode; loss of input will produce a frozen picture in SECAM mode.

(2) Patterns not available in SECAM mode; output will be video only in SECAM mode.

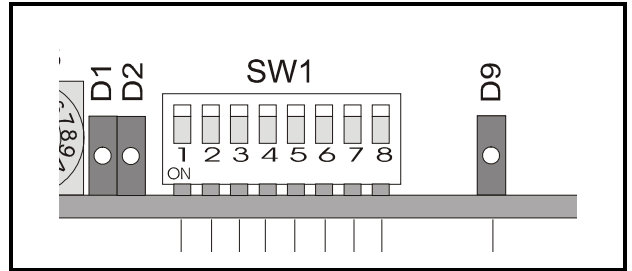
ADJUSTMENT RANGES

Video Gain	+6 dB to -3 dB	YC Delay	-222 ns to +148 ns in 74 ns steps
Chrominance Gain	±3 dB	H-Phase	±31968 ns in 37 ns steps
Black Level	±75 units Overall range ±120 mV	V-Phase	±7 lines in 1 line steps
NTSC Hue	±30° in 1° steps	Picture Position	±2220 ns in 148 ns steps

SW1 SWITCH FUNCTIONS

(Functions enabled when switch is set to ON)

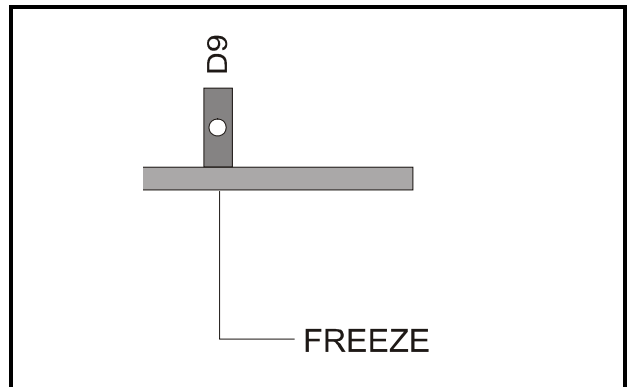
- Position 1 Freeze
- Position 2 VITS Pass
- Position 3 Not Used
- Position 4 Not Used
- Position 5 Pedestal strip (NTSC only)
- Position 6 Caption ON
- Position 7 Auto Freeze
- Position 8 EDH



LED INDICATORS D1 and D2

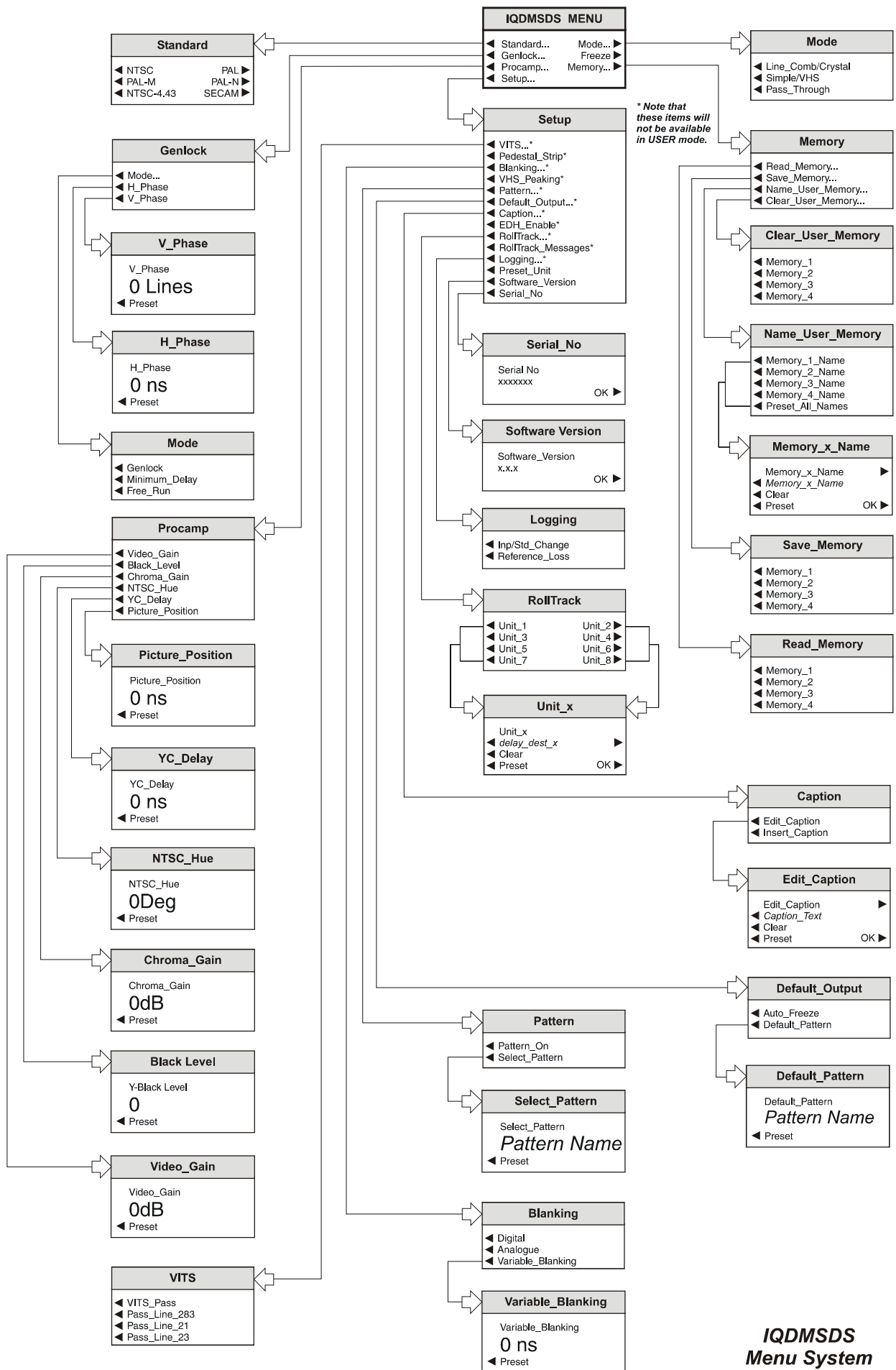
These LED's will indicate the state of a selected function.

D1	D2	State of Variable
Off	Off	Default Value
Off	On	Above Default Value
On	Off	Below Default Value
On	On	N/A



LED INDICATOR D9

D9 will become illuminated when the Freeze function is enabled.



OPERATION FROM AN ACTIVE CONTROL PANEL

The card may be operated with an active control panel via the RollCall™ network.

The menus available for this card are shown on page opposite and will appear in the Control display window.

Operational details for the remote control panel will be found in SECTION 1 of the Modular System Operator's Manual.

MENU DETAILS (see IQDMSDS Menu System Opposite)**MAIN MENU**

The main, or top level menu allows various sub-menus to be selected by pressing the button adjacent to the required text line.

Note that where a menu item is followed by three dots (...) this indicates that a further sub-menu may be selected.

Whenever a menu item is selected the parameters of that selection will be displayed in the Information window of the front panel. Where the selection is purely a mode selection and does not enable a sub-menu, the text will become reversed (white-on-black) indicating that the mode is active. If the mode is not available for selection the text will remain normal.

◀ STANDARD

This menu selection allows the operating standard of the unit to be set.

Selections are:

◀ PAL

When PAL is selected the decoder will decode assuming the input is PAL.

◀ NTSC

When NTSC is selected the decoder will decode assuming the input is NTSC.

◀ PAL-N

When PAL-N is selected the decoder will decode assuming the input is PAL-N.

◀ PAL-M

When PAL-M is selected the decoder will decode assuming the input is PAL-M.

◀ SECAM

When SECAM is selected the decoder will decode assuming the input is SECAM.

◀ NTSC443

When NTSC443 is selected the decoder will decode assuming the input is NTSC 4.43.

◀ GENLOCK**◀ Mode****◀ Genlock**

The unit will be genlocked to the reference signal.

◀ Minimum Delay

When this mode is selected the unit will operate in a minimum delay mode.

◀ Free Run

The output signal will be locked to an internal free-running signal.

Note that if there is no reference input signal present the unit will default to this Free Run mode.

◀ H Phase (Only operational in Genlock mode)

Selecting this item reveals a display showing the horizontal timing of the output signal relative to the reference sync signal, in nanoseconds. Rotating the spin-wheel will adjust this value.

The range is ± 31968 ns in steps of 37 ns.

Selecting Preset returns the setting to zero. (Output coincident with reference)

◀ V Phase (Only operational in Genlock mode)

Selecting this item reveals a display showing the vertical timing of the output signal relative to the reference sync signal, in TV lines. Rotating the spin-wheel will adjust this value. Range is ± 7 lines in 1 line steps.

Selecting Preset returns the setting to zero. (Output coincident with reference)

◀ PROCAMP

This selection allows various adjustments to be made to the processed signal.

◀ Video_Gain

This selection reveals a numerical readout display for the gain of the composite video signal.

The overall range of adjustment is from +6 dB to -3 dB.

Selecting Preset returns the setting to the calibrated value of 0 dB.

◀ Black Level

This selection reveals a numerical readout display for the Y pedestal or black level. By rotating the spinwheel the pedestal may be adjusted by ± 75 units in steps of 1 unit.

Note that the overall range of adjustment is approximately ± 120 mV

Selecting Preset returns the setting to the calibrated value of 0 mV.

◀ Chroma Gain

This selection reveals a numerical readout display for the gain of the chrominance signal.

By rotating the spinwheel the gain may be adjusted by ± 3 dB

Selecting Preset returns the setting to the calibrated value of 0 dB.

Note that the Chroma Gain function does not operate in the SECAM mode.

◀ NTSC_Hue

This selection reveals a numerical readout display for the Hue of an NTSC signal. By rotating the spinwheel the Hue may be adjusted by $\pm 30^\circ$ in steps of 1°

Selecting Preset returns the setting to the calibrated value of 0°

◀ YC Delay

The relative timing between the luminance and the chrominance signals may be set using this function and rotating the spinwheel. The range is -222 ns to +148 ns in steps of 74 ns.

When viewing a picture, the chrominance will move to the right for positive values and to the left for negative values of shift.

Selecting Preset returns the setting to 0 ns.

◀ Picture Position

This function allows the horizontal position of the active picture to be adjusted by ± 2220 ns in steps of 74 ns.

Selecting Preset returns the setting to 0 ns.

◀ SETUP

This selection reveals a sub-menu that allows the following functions to be set up:

* Note that these items will not be available in USER mode.

◀ VITS*

This item will reveal a sub-menu that allows various actions to be applied to the VITS lines.

◀ VITS_Pass*

The effect of the various settings are shown below.

Note that when this item is selected the word VTS will appear on the bottom line in the information window.

VBI Operation (NTSC)

Setting	Effect on VITS lines			
	Lines 1-9, 263-272	Lines 10-20, 273 –282	Line 21	Line 283
VITS Pass OFF	Blanked	Blanked	Decoded	Decoded
VITS Pass ON Pass Line 21/283 OFF	Blanked	Passed flat	Decoded	Decoded
VITS Pass ON Pass Line 21 ON	Blanked	Passed flat	Passed flat	Decoded
VITS Pass ON Pass Line 283 ON	Blanked	Passed flat	Decoded	Passed flat
Simple/VHS mode VITS selection n/a	Blanked	Decoded	Decoded	Decoded

VBI Operation (PAL)

Setting	Effect on VITS lines			
	Lines 623-6, 311-318	Lines 7-22, 319-334	Line 23	Line 335
VITS Pass OFF	Blanked	Blanked	Decoded	Blanked
VITS Pass ON Pass Line 23 OFF	Blanked	Passed flat	Decoded	Y Decoded C Blanked
VITS Pass ON Pass Line 23 ON Line Mode	Blanked	Passed flat	Passed flat	Y Decoded C Blanked
Simple/VHS mode VITS selection n/a	Blanked	Blanked	Decoded	Blanked

◀ Pass L283 (only available in 525 line standard)

When this item is selected and if a 525 line standard is present, the unit will pass this line flat through the luminance channel and will be blanked on the chrominance channel. Under any other conditions this line will be decoded.

◀ Pass L21 (only available in 525 line standard)

When this item is selected and if a NTSC colour standard is present, the unit will pass this closed caption line, flat. Under any other conditions this line will be decoded.

◀ Pass L23 (only available in 625 line standard)

When this item is selected and if a 625 line standard is present, the unit will pass line 23 flat through the luminance channel and will be blanked on the chrominance channel. Under any other conditions this line will be decoded.

◀ Pedestal Strip*

This toggle ON/OFF function allows the effect of any set-up on the input signal to be cancelled. This function only operates in NTSC but is always enabled in PAL-M mode.

Note that the pedestal is not stripped in the VHS mode.

◀ Blanking*

This menu allows control of the blanking width of the active picture.

Selections available are:

◀ Digital

This sets the active video to 720 pixels in length.

◀ Analogue

This sets the active video to 702 (625 line standard) or 714 (525 line standard) pixels in length. The blanking may be varied using the Variable Blanking function.

◀ Variable Blanking

This selection reveals a numerical readout display for the variation in blanking.

The overall range of adjustment is ± 1184 ns in 74 ns steps.

Selecting Preset returns the setting to the calibrated value of 0.

◀ VHS Peaking*

When selected and the operating mode is VHS a fixed amount of horizontal peaking, centred at 2.9 MHz, is added.

◀ Pattern*

This function will allow a pattern to be available as the output signal when the Pattern_On item is enabled.

Note that this function is not available in SECAM or VHS mode.

◀ Pattern_On

When this item is selected (text highlighted) the pattern selected in the Select Pattern menu will become the output signal.

When unselected (text normal) the decoded video will become the output signal.

◀ Select_Pattern

This item will allow a pattern to be selected. The spinwheel should be used to scroll through the list.

- | | |
|--------------------|-----------------------------------------|
| ◀ Black | The output will be standard black. |
| ◀ 100% Colour_Bars | The output will be 100% colour bars. |
| ◀ 75% Colour_Bars | The output will be 75% colour bars. |
| ◀ Multiburst | The output will be a multiburst signal. |

◀ Default_Output*

This menu allows the characteristics of the output signal to be set if the input signal is lost.

Note that in SECAM mode only the Auto Freeze mode is available.

◀ Auto_Freeze

The selected default output pattern will become the output picture.

When activated the output signal will become a frozen picture using the last good input picture data.

◀ Default_Pattern

This function will allow the pattern to be chosen for the default output signal.

Note that this function is not available in SECAM or VHS mode..

The spinwheel should be used to scroll through the list to select the pattern.

◀ Black The output will be standard black.

◀ 100% Colour_Bars The output will be 100% colour bars.

◀ 75% Colour_Bars The output will be 75% colour bars.

◀ Multiburst The output will be a multiburst signal.

◀ Caption*

This selection allows text to be compiled which may be overlaid on the pattern or default pattern output signal when the

◀ Insert_Caption item is enabled.

Note that this function is not available in SECAM or VHS mode.

◀ Insert_Caption

When enabled the caption is overlaid on the pattern output signal.

To compile/edit the text the ◀ Edit_Caption function should be selected and the right ► and left ◀ buttons adjacent to the upper text line in the Caption menu used to select the character position in the text and the spinwheel used to select the character.

The ◀ **Clear** function blanks out the selected character.

The ◀ **Preset** function loads the default text (card identification)

O.K. ► saves the caption text and returns to the main menu.

◀ EDH_Enable*

Selecting this item (appears as reversed text) enables the error detection system and the generation of EDH on the SDI output.

◀ RollTrack*

This function allows the value of the delay time produced by this module to be sent, via the RollCall™ network, to audio delay units connected on the same network. This enables compatible audio delay units to produce an audio delay dependent on this and other similar units. The audio delay unit will dynamically follow or track the received delay-time information allowing processed video signals to be timed correctly with audio signals. This automatic tracking system via the RollCall™ network is call **RollTrack**.

For more detailed information, see the RollTrack section (Appendix) at the end of this manual.

The destination for the delay information is set by the network code address as follows:

Selecting **RollTrack** provides a sub-menu that allows up to 8 audio delays to be selected as a destination.

◀ Unit_1	Unit_2▶
◀ Unit_3	Unit_4▶
◀ Unit_5	Unit_6▶
◀ Unit_7	Unit_8▶

When a unit is selected a further sub-menu then appears to allow the code to be set up.

To edit the text the buttons adjacent to the upper text line in the menu are used to select the character position in the text and the spinwheel used to select the character.

A further sub-menu then appears to allow the code to be set up using the adjacent push buttons to edit the text.

(The right ▶ and left ◀ buttons select the cursor position and the spinwheel selects the character; the clear button sets the text line to all zero's and the OK button accepts the network address)

For more detailed information see the RollTrack section of this manual.

The full network address has five sets of numbers.

For example: 0000:10:01*14*51

The first set (0000) is the network segment code number

The second set (10) is the number identifying the (enclosure/mainframe) unit

The third set (01) is the slot number in the unit

The fourth set (14) separated by an * is the channel number.

Note that only channel numbers 14, 15, 16 & 17 should be used for audio delay cards.

The fifth set (51) is the board type identification.

Once a destination address for a unit has been set the OK function will return to the unit menu to allow another address to be set if required.

◀ RollTrack Messages*

When this item is enabled an error message will appear in the information window if an acknowledgement is not received from the RollTrack destination.

◀ Logging*

If a logging device is attached to the RollCall™ network, information about various parameters will be reported to the logging device assigned in the Remote Control Interface system. (See Section 1) The RCIF Menu System can be made available to such a device.

◀ Inp/Std_Change

When activated, a loss of input signal condition or change of input line standard will be available for the logging device.

◀ Reference_Loss

When activated, a loss of reference signal condition or change of reference input line standard will be available for the logging device.

◀ Preset_Unit

Selecting this function presets various functions such that some sort of signal is produced at the output even though some settings may be inappropriate for the input signal. This is useful if many settings have been set in error such that no output signal is being produced.

Note that this function does not clear the memories or the caption data.

◀ Software_Version

Selecting this item reveals a display showing the version of the software fitted in the module. Select OK to return to the Setup Menu.

◀ Serial No

This displays the serial number of the unit. Select OK to return to the setup menu

MODE ▶

The decoding mode may be selected using this sub-menu:

◀ Line_Comb/Crystal

This is an adaptive line comb useful for inputs containing pictures with a large amount of movement but requiring short-term stability. e.g. LaserDisc

◀ Simple/VHS

This enables a lowpass/high pass band-split filter that is capable of locking to unstable inputs. e.g. VHS

◀ Pass_Through

This function allows the composite/luma input to be passed directly through to the Y output channel for test purposes. U and V channels are blanked.

FREEZE ▶

This toggle function produces a freeze-field picture *This function will be shown in the information window.*

MEMORY ►

This function reveals a sub-menu which allows control of the user memories.

◀ Read Memory

This function reveals a sub-menu which allows 4 different settings of Standard, ProcAmp and Mode items to be recalled from the 4 memory locations as saved in the Save_Mem function.

Note that there are 4 memory locations available for each of the operating standards, PAL, NTSC, PAL-N and PAL-M plus NTSC no-pedestal-strip. They can all be renamed using the Name_User_Memory menu.

◀ Save Memory

This function reveals a sub-menu which allows the settings of Standard, ProcAmp and Mode items to be saved. Up to 4 different set-ups may be saved in the 4 memory locations.

Note that there are 4 memory locations available for each of the operating standards, PAL, NTSC, PAL-N and PAL-M plus NTSC no-pedestal-strip. They can all be renamed using the Name_User_Memory menu.

◀ Name User Memory

This selection allows renaming of the Save 1, 2, 3 and 4 memory locations.

Note that there are 4 memory locations available for each of the operating standards, PAL, NTSC, PAL-N and PAL-M plus NTSC no-pedestal-strip. (This is designated as NTSC-J, the NTSC system used in Japan which has no pedestal; NTSC-M is used to define the normal NTSC system)

To rename a memory location when operating in a particular standard, select:

◀ Name_User_Memories to reveal the sub-menu.

Select the memory location to be renamed e.g.

◀ Memory_1_Names

To compile/edit the text the right ► and left ◀ buttons adjacent to the upper text line in the menu should be used to select the character position in the text and the spinwheel used to select the character.

The ◀ **Clear** function blanks out the selected character.

The ◀ **Preset** function loads the default text, for example **Memory_1_NTSC-M** if operating in the normal NTSC standard.

O.K. ► saves the caption text and returns to the main menu.

Now, when the Read_Mem function is selected (and the unit is operating in the NTSC standard) Read_1 will now appear with the new name.

◀ Preset_All_Names

Selecting this function will reset all the memory names to their default names.

e.g. in NTSC-M memory x will become

Memory_x_NTSC-M

◀ Clear User Memory

This selection allows individual memory locations to be cleared and returned to their default (factory) settings.

RollTrack Audio Delay Tracking

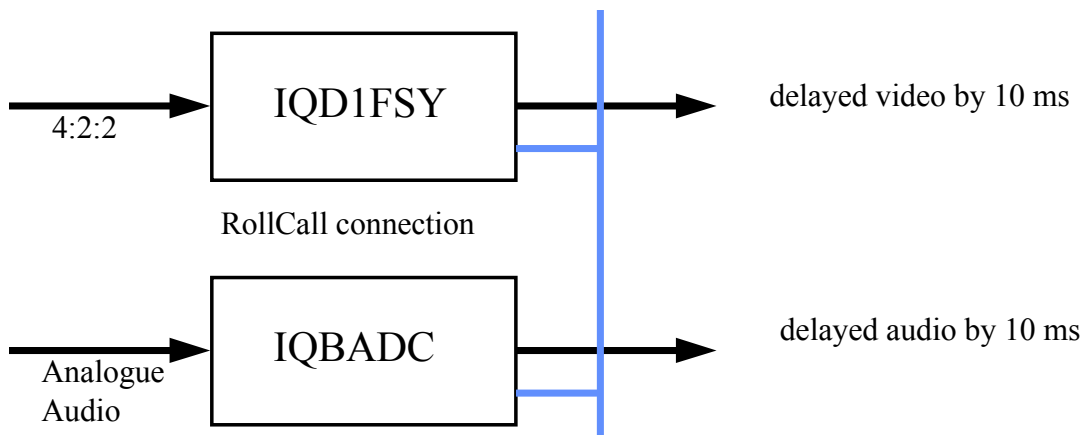
RollTrack is a feature of RollCall™ (Snell & Wilcox’s proprietary remote control system), that allows devices to communicate across the RollCall network with no direct user intervention.

RollTrack Audio Delay Tracking enables Snell & Wilcox RollCall™ compatible audio delay products to track delay introduced by RollCall™ compatible video processing products.

The current products that implement RollTrack Audio Delay Tracking are:

Audio Delay Modules	Video Modules	Other Products	
IQBAAD	IQD1FSY	ALCHEMIST	MDD3000
IQBADC	IQDMSDS	CPP100	MDD550
IQBDAC	IQDAFS	CPP200	MDD560
IQBDAD	IQDMSDS	NRS500	MDD570
IQBSYN	IQDMSDP	HD5050	MDD2000
IQBADCD	IQDSYN		

The simplest configuration is a single video unit and a single audio delay in a RollCall™ system. The audio delay will have the same delay as through the video path. If the delay changes the audio delay will track.



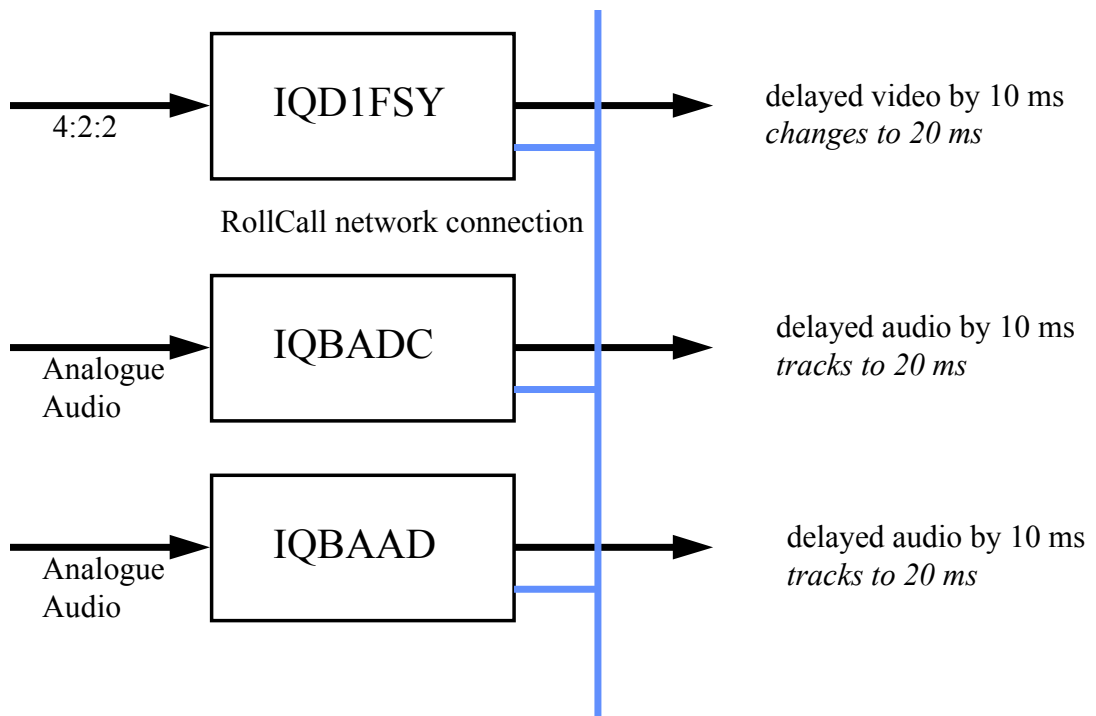
The next level of configuration is where there are multiple Frame Synchronizers (for example) each connected through RollCall™ to their own tracking Audio Delay. (It is worth stating that the synchronizers and audio delays do not have to be in the same enclosure; the addressing scheme, discussed later, allows for the units to be positioned anywhere in the RollCall™ domain.)

The maximum number of video units and audio delays in a RollCall™ system is set by the maximum limit of the number of modules in a RollCall™ network and is currently 3840 on a single network without bridges.

The unique identification of the destination unit (a decimal number) for various modules is as follows:

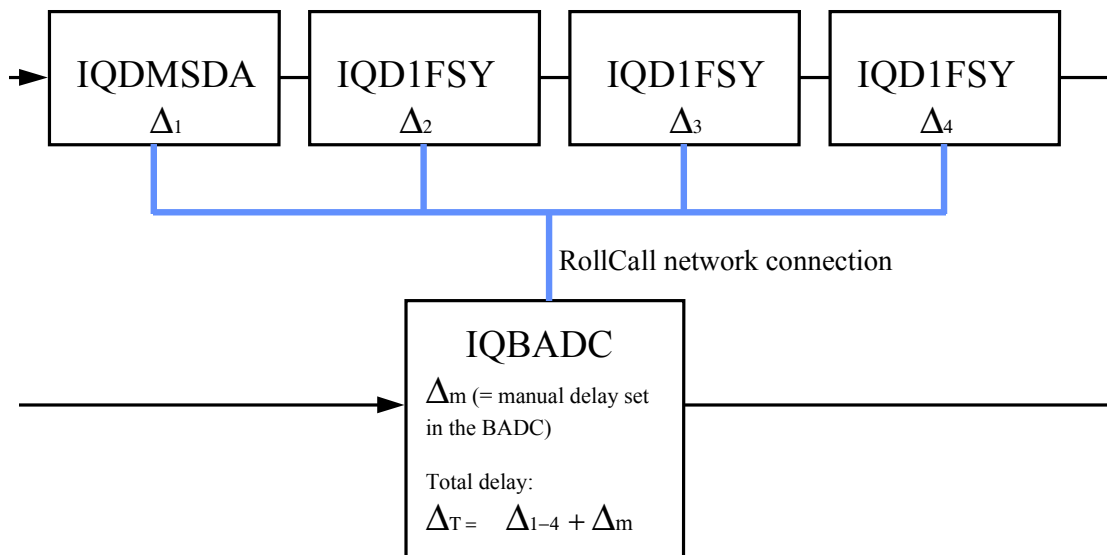
Module	ID
IQBADC	51
IQBDAC	52
IQBAAD	53
IQBDAD	54
IQBSYN	89
IQBADCD	107

The next level of complexity is a *vertical delay cluster* where a video unit can have up to eight audio delays tracking - of the same or different types.



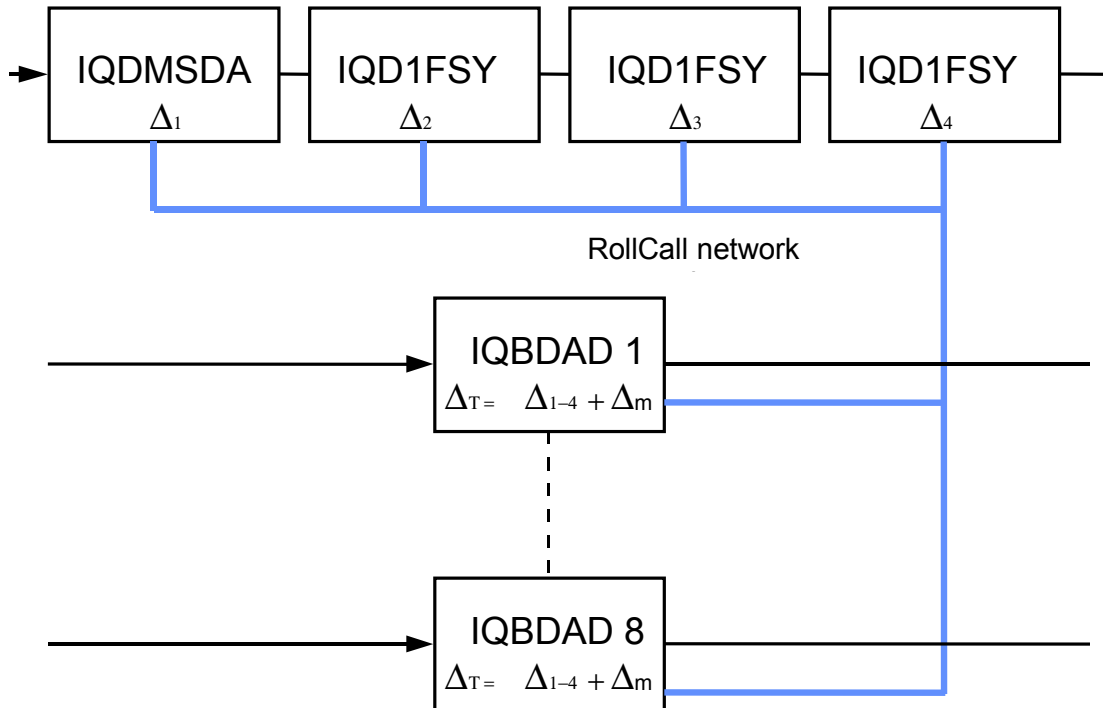
From one to eight audio delay products can be connected via RollCall™ to a single frame synchronizer, for example. If the synchronizer delay changes, then however many audio delays are connected will track the delay. The audio delays can also have a manual delay which will be added to the RollTrack delay.

The next level of complexity is a *horizontal delay cluster* where an audio delay can track up to four video units.



The total delay time through the audio delay is then the sum of the individual delays introduced by the video units plus the manual delay of the audio unit. The manual delay can be set to compensate for any fixed propagation delay in the video path or may be set to zero.

The next level of complexity is a *matrix delay cluster* where each audio delay (up to eight) can track up to four video units. This configuration is in effect a four by eight matrix of video units and audio delay units. The total delay time through the audio delay units is then the sum of the individual delays introduced by the video units plus the manual delay of the audio unit.



As any of the delay times change in the video path so will the audio delay time track this delay. A virtual connection is made between from, say, an IQD1FSY to an IQBDAD by:

- selecting the *Setup...* Menu of the IQD1FSY
- then selecting the *Audio_Delay...* Menu
- then choosing from *Unit_1 to Unit_8*
- then entering the unique network address of the IQBDAD in the form *nnnn:xx:yy*z*d* where *nnnn* = network address and in most cases will be 0000(hex);
- xx* = IQ enclosure address (hex);
- yy* = slot address of the IQBDAD (hex)
- z* = the connection (or channel) number (decimal) - see table below.
- d* = the unique identification of the destination unit (decimal) The ID entered must match the receiving units own ID or else the command will be ignored. If the ID value is set to 00, the receiving unit does not perform an ID match and will always accept the incoming command
- then selecting the *Delay...* Menu of the IQBDAD
- then selecting *RollTrack*

Example of Network Addresses with Channel Numbers and ID Numbers

	D1FSY 1	D1FSY 2	D1FSY 3	D1FSY 4
Audio delay 1	0000:10:01*14*54	0000:10:01*15*54	0000:10:01*16*54	0000:10:01*17*54
Audio delay 2	0000:10:03*14*54	0000:10:03*15*54	0000:10:03*16*54	0000:10:03*17*54
Audio delay 3	0000:10:05*14*54	0000:10:05*15*54	0000:10:05*16*54	0000:10:05*17*54
Audio delay 4	0000:10:07*14*54	0000:10:07*15*54	0000:10:07*16*54	0000:10:07*17*54
Audio delay 5	0000:10:09*14*54	0000:10:09*15*54	0000:10:09*16*54	0000:10:09*17*54
Audio delay 6	0000:10:0B*14*54	0000:10:0B*15*54	0000:10:0B*16*54	0000:10:0B*17*54
Audio delay 7	0000:10:0D*14*54	0000:10:0D*15*54	0000:10:0D*16*54	0000:10:0D*17*54
Audio delay 8	0000:10:0F*14*54	0000:10:0F*15*54	0000:10:0F*16*54	0000:10:0F*17*54

The most complex system would be an array of matrix delay clusters

