

IQDSK01

SD-SDI Linear Keyer



The IQDSK01 provides a simple & straightforward linear or luma keying capability for SD-SDI video streams. The unit provides a dedicated program output along with selectable preview/program outputs which include a clean feed option. Being transparent to ancillary data allows the IQDSK01 to pass any embedded audio or metadata and this combined with a short signal delay makes the module suitable for all operational environments. As well as operating with the RollCall control and monitoring system the IQDSK01 can interface with external systems using RS-422 control. When combined with Snell & Wilcox' Kahuna switcher this allows seamless integration via the Kahuna control GUI enabling direct keying control and reporting.

Does this module suit your application?

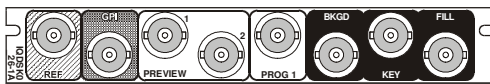
- Background, Fill, and Key Inputs
- Linear and Luma Key Modes
- Dedicated Program output, and two independently selectable preview or program outputs
- 2 independently selectable preview outputs showing preview, program, program pre-fade, Background (clean feed), Fill, Key, Matte, pattern and Processed Key signals
- Fade to black on Program Output with adjustable duration
- Self-key capability using fill input to provide key signal
- Matte generation and capture
- Dissolve/Cut Mix mode with key opacity control
- Maintains valid output with background input fail, with option of switching to Fill input or Matte source
- Ancillary data can be passed from the Background input, Fill input or blanked
- Relay input bypass option - background to program output 1
- 2 GPIs and 1 GPI/O which can operate as a Tally output

- Remote trigger of Fade Up/Down action using GPI control
- External keyer control via RS422 interface on double width versions
- RollCall remote control and monitoring

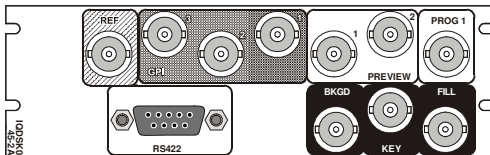
Why should you choose this module?

- Linear & luma key modes provides keying for a variety of sources
- External control via RS422 interface enables direct keyer control from production switchers like Snell & Wilcox' Kahuna
- Key layer cut or fade operation for the program output enables flexibility for instant or timed transitions
- Selectable clean feed (Background) output for editing and archive purposes
- Emergency input to output bypass option allows added protection for critical signal paths or 24/7 operations

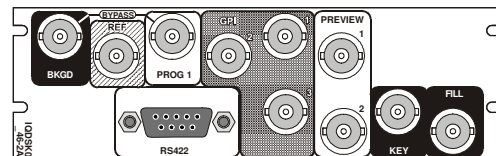
Order codes for IQH3A/1A enclosures



IQDSK0126-1A SDI Linear Keyer. 1 program, 2 preview selectable SDI outputs



IQDSK0145-2A SDI Linear Keyer. 1 program, 2 preview selectable SDI outputs, external control interface via RS-422

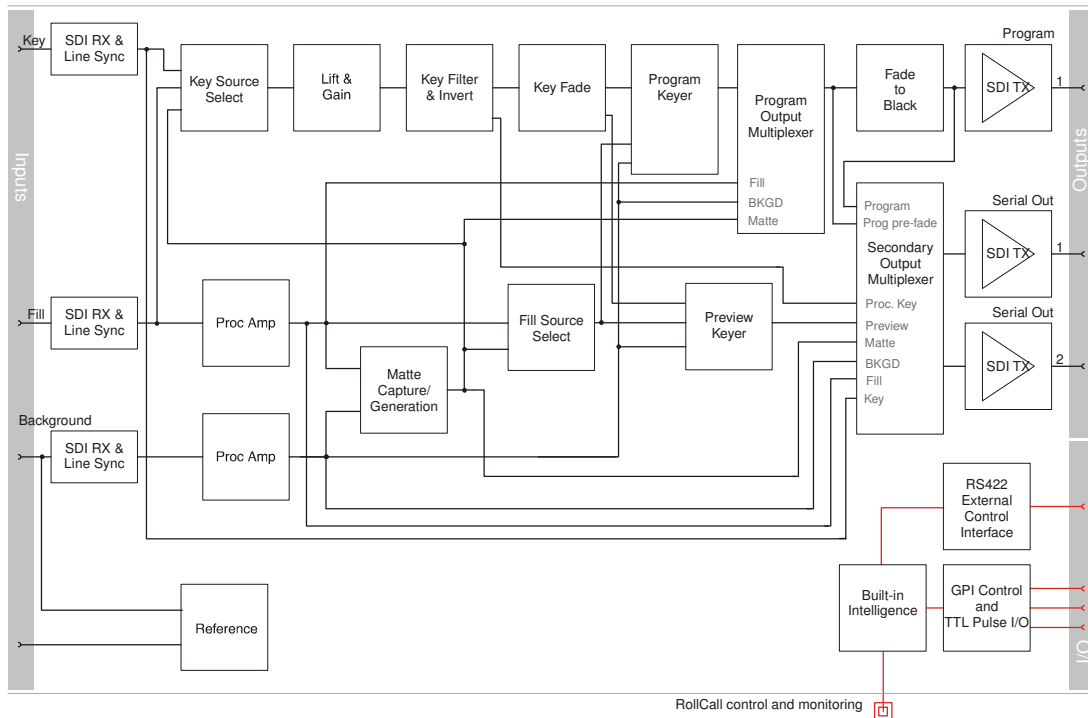


IQDSK0146-2A SDI Linear Keyer. 1 program, 2 preview selectable SDI outputs, external control interface via RS-422, relay bypass for background input to program output

For more details on enclosure types please refer to the Frames/Enclosures section

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Block diagram for IQDSK0145-2A shown

Inputs & Outputs

Signal Inputs

- Serial Digital Background (Bkgd)
 - 1 x BNC Terminated in 75 Ohms
- Serial Digital Key (Key) 1 x BNC Terminated in 75 Ohms
- Serial Digital Fill (Fill) 1 x BNC Terminated in 75 Ohms
- Standards 270 Mbit/s SDI, SMPTE 259M-C
- Analog Reference (Ref) 1 x BNC Terminated in 75 Ohms
- Standards SD Bi-sync, RS170A

Signal Outputs

- Serial Digital (Prog 1) 1 x SDI Program
- Serial Digital (Preview 1, 2) ... 2 x SDI Preview
(independently selectable)
- Standards 270 Mbit/s SDI, SMPTE 259M-C

Control

- GPI 2 Closing Contact style inputs + 1 I/O via BNC
- RS422 Remote Control 9-pin D-type connector

Controls

- Bkgd / Fill Luma Gain Adjust ± 6 dB in 0.1 dB steps
- Bkgd / Fill Chroma Gain Adjust ± 6 dB in 0.1 dB steps
- Bkgd / Fill Black Level Adjust ± 100 mV in 0.8 mV steps
- Fill Picture Position Approx. +600ns in 148ns (SD) or 27ns (HD) steps
- Key Picture Position Approx. +600ns in 74ns (SD) or 13.5ns (HD) steps
- Key Gain 0 - 13.686 (0x0000 - 0xFFFF)
- Key Lift -10% - +110% (0x800 - 0x7ff) in 0.1% steps
- Program Fade to Black On / Off (selecting 'on' fades to black, off returns to program setting)

Program Fade to Black Time

- 0 - 2047 Frames (0x0000 - 0x0800):
- 0-63 in steps of 1 frame
- 64 to 254 in steps of 10 frames
- >254 in steps of 100 frames (preset to 100)

- Default Program Output Fill, Matte, Color Bars, Black
- Preview Output 1 & 2 Select

Independent selection for each output of: Preview, Program, Program pre-fade, Bkgd I/P, Fill I/P, Key I/P, Processed Key, Matte, Black, Color Bars

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Genlock Mode.....	Analog Reference / Background Input (Note: Fill and Key inputs can be up to 1 line earlier, but not later than the background input in this mode)
Reference Default	On Ref. loss use background input. If background input not valid use fill input, otherwise free-run
Genlock H Phase	$\pm 1H$, adjustable in 13.5 ns steps for HD, or $\pm 0.5H$, in 37ns steps for SD
Ancillary data select	Background Input / Fill Input
Ancillary data blanking	Blank for HANC and/or VANC (Program output, Preview selection: Program, Program pre-fade, Background only)
Pattern Generator	On/Off – EBU Color Bars (Preview Out Only)

Keyer Controls

Keyer Control	RollCall/RS422
Keyer Mode.....	Linear, Luma
Key Source.....	Key Input / Matte / Fill Input (Self-Key)
Fill Source.....	Fill Input / Matte
Key Invert	Off / On
Keyer Enable	Off / On (cut or fade on/off the keyer)
Fade Enable	Off / On (fade function enabled when ON)
Keyer Fade Time.....	0 – 2047 Frames (0x0000 - 0x0800) 0-63 in steps of 1 field 64 to 255 in steps of 10 fields >255 in steps of 100 fields (preset to 100)
Mix Enable.....	Off / On (dissolve or cut to the set mix level)
Note: Keyer/Mix enable priority	Cannot both be selected at the same time. Selecting one of these functions will de-select the other if already enabled
Mix Level	0 – 100% in 1% steps (100% = Full Key) (Preset to 50%)
Key Opacity	Key fade level 50% to 100% (100% = Key full-on)
Memory	16 x Store / Name / Recall
GPI/O function*.....	GPI – Programmable to recall any memory (and toggle between 2 selectable memories) GPO (output closed when true) – Key Tally On, Key Fade Up, Key Fade Down, Full Key (100% mix) enabled, Bkgd Lost, Fill Lost and Key Lost.

* Note: GPI's functional whether Keyer control selected to RollCall or RS422

Preset Unit

Returns all settings to factory defaults

Matte Controls

Matte Select	Single Color (default)/ Frame Store
Frame Store Capture Source	Background Input (default)/ Fill Input
Frame capture.....	activates capture from selected input
Frame store status.....	Captured = frame stored, Empty = not stored
Matte Hue	0 – 360° (preset - 0°)
Matte Saturation	0 - 100% (preset 0%)
Matte Luminance.....	0 - 100% (preset 0%)

Indicators

Power	OK (Green)
CPU running.....	OK (Green flashing)
FPGA running.....	OK (Green flashing)
Status	OK (Green) Warning (Yellow) Error (Red)
Background Input	OK (Green)
Key Input.....	OK (Green)
Fill Input.....	OK (Green)

Additional Controls via RollCall Remote Control System

Logging.....	Input Status* Input Standard* Reference Status ANC Error (Bkgd, Fill) EDH Error*, Error-Time*, EDH Error-Seconds* CRC Error*, Error-Time*, CRC Error-Seconds*
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* Background, Key & Fill

RollTrack*	Set up to 8 unit destinations for Key On / Off / Fade / Mix, Background Input Loss/Restore and Key Loss/Restore
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* Note: RollTracks only operation when Keyer control set to RollCall

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Specifications

Input Cable Length..... Up to 350 m Belden 1694A @
270 Mbit/s
Input Return loss..... Better than -15 dB
Serial Output Level..... 800 mV \pm 10%
Output Overshoot < 70 mV
Output Return Loss..... Better than -15 dB
Output Jitter..... < 0.2 UI
Minimum delay (when locked to Background input)
5 μ s

Reference Input

Electrical Black and Black Burst
SD bi-level – RS170A
Connector / Format..... BNC/75 ohm panel jack on standard
S&W connector panel
Analog Reference Return Loss
SD bi-level <-40 dB to 5.5 MHz

Video Standards

525(480)/29i, 625(576)/25i

Note: All inputs must be the same standard

EMC Performance Information

Environment Commercial and light
industrial E2

Peak Mains Inrush Current following a 5 second mains
interruption
No Mains Input

Performance Information.

No performance
degradations or cable
length limitations

Power Consumption

Module Power Consumption

8.5W Max