

The IQDDAC converts serial 4:2:2 format at 270 Mbit/s to analog component video (in either YPbPr or GBR formats). Each channel is over-sampled and applied to three 10 bit DAC's. These analog signals are corrected for gain and offset, syncs added to the Y signal, and then low-pass filtered in accordance with the requirements for full '601' performance. Optional Key channel only version available.

# IQDDAC

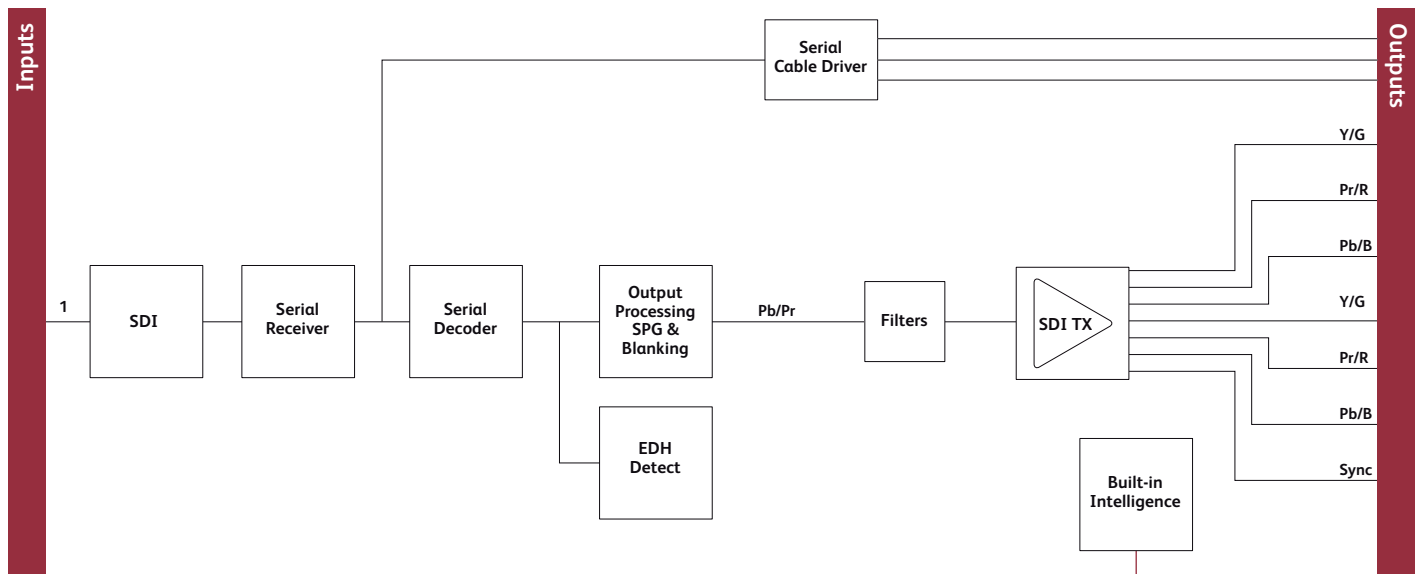
## Video Digital to Analog Converter

### Does this module suit your application?

- SDI to analog YPrPbS or GBRS
- 10-bit oversampled DAC's
- Full CCIR601 filter performance
- 525 line YPbPr in Betacam or SMPTE levels
- Auto-detects 625/525 line standards
- Separate 2V Sync output
- Control of blanking timing, picture position and Y to PbPr correction
- Two outputs for each component (-2)
- EDH monitoring and error checking
- User controlled Blanking shaping
- Digital bypass mode
- Selectable vertical blanking
- RollCall control, monitoring and logging

### Why should you choose this module?

- Digital to analog converters are 10 bit and twice over-sampled for optimum accuracy. Reconstruction is to within CCIR601 specification
- Operates within the 525 or 625 environments so can be used in multi-format digital component environments
- Component analog can be YPbPr (EBU or Betacam levels) or GBRS as required by the system
- Input is monitored for EDH errors to ensure system integrity
- Blanking is selectable between analog and digital limits to ensure no unwanted picture content at the side of the display



Block Diagram for IQDDAC-1A

**Order codes for IQH3A/1A enclosures**

**IQDDAC-1A**

Video DAC 601 spec 10-Bit,  
1 output.

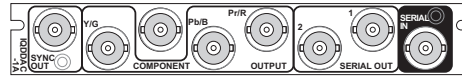
**IQDDAC-2A**

Video DAC 601 spec 10-Bit  
2 component, 3 serial outputs.

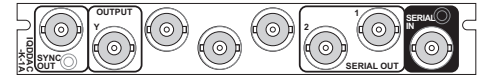
**IQDDAC-K-1A**

Video DAC Key Channel only 10-Bit  
1 output.

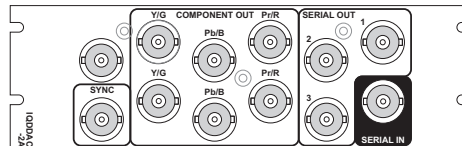
For more details on enclosure types please refer to datasheet IQH3A.



IQDDAC-1A



IQDDAC-K-1A



IQDDAC-2A

**Technical Specification**

**Inputs and Outputs**

**Signal Inputs**

Serial SDI 525 or 625 serial digital  
Standards SMPTE 259M-C-1997

**Signal Outputs**

Component 525/625 YPbPr to EBU/SMPTE/  
Betacam specification or  
GBR, Sync on Y, selectable on  
G, B/R

Serial Up to 3 re-clocked SDI  
Standards SMPTE 259M-C-1997  
Sync Mixed Syncs at -2 V pk to pk

**Functions Available via RollCall Only**

EDH Statistics  
Picture position +3700 ns to -1332 ns in  
increments of 74 ns

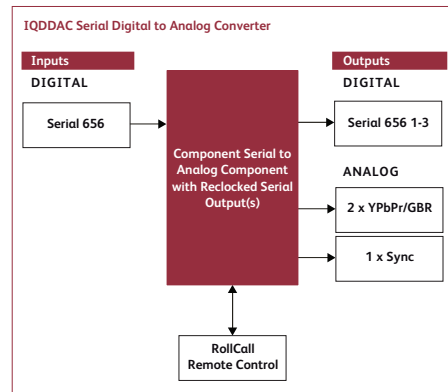
**Specifications**

**Analog Audio Input (Balanced)**

Frequency response Within 601 specification  
Output D.C.  $\pm 50$  mV (YUV outputs)  
Analog output return loss Better than 35 dB DC to 5.0  
MHz  
Maximum input cable length >200 m  
Processing 10 bit with oversampling  
Serial input / output return loss Better than -15 dB at 270 MHz  
Delay 2.29  $\mu$ s

**Power Consumption**

Module power consumption 7.5 W max



**Card Edge and RollCall Controls**

**Card Edge Controls (also available via RollCall)**

Picture position +518 to -592 ns in increments  
of 74 ns  
Y to PbPr timing +222 to -148 ns in increments  
of 74 ns  
EDH clear On/Off  
Vertical blanking Pass/Blank  
Syncs On/Off  
Digital bypass On/Off  
Horizontal blanking D1 active (no shaping)  
D1 active (shaped)  
Composite (shaped)  
Minimum Legal (Composite  
shaped)  
Output select YPbPr or GBR  
525 YPbPr levels SMPTE/Betacam

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