

REMOTE CONTROL OF CANON DSLR

Unattended imaging of Noctilucent Clouds



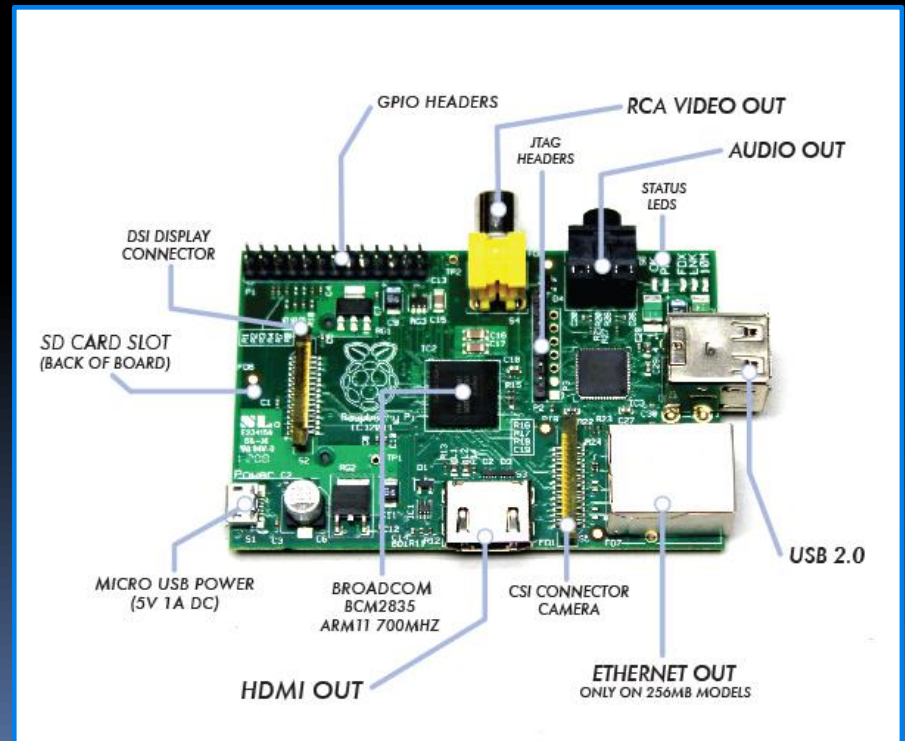
John Murrell

Time interval imaging

- Shutter opened at preset intervals
- Possibly shutter opened for programmed time
- 'Double Shutter press' for mirror lockup
- Canon software does not allow mirror lockup and older cameras (40 D) max exposure is 30 sec
- Designed for NLC but can also be used for Meteors and general deep sky imaging
- NB this solution does not autofocus – AF cannot be relied on for astronomical imaging


Plan 1

- Initial Plan was to use Raspberry Pi & Piface interface.
- Problem found with Raspberry Pi locking up when network connection lost

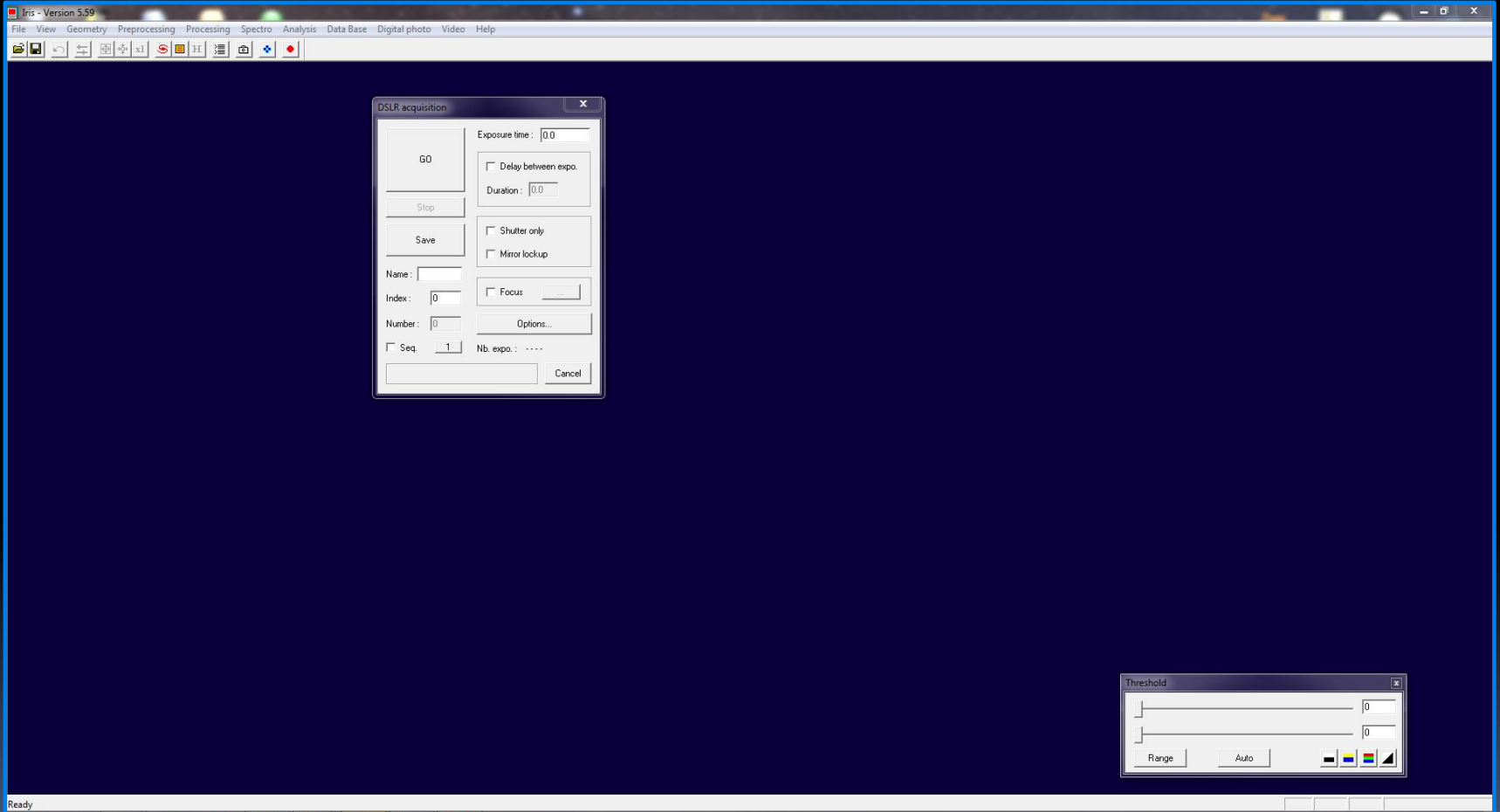




Plan 2

- Use IRIS Astronomical software to control camera
 - Requires either a special interface
 - Or RS232 interface
 - Special interface is no longer made
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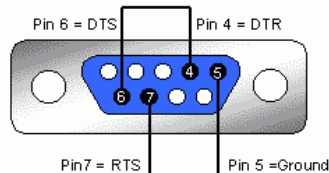
Iris Software



RS232 Interface diagram (note wrong plug for Canon 10/20/30/40 D)

(DSLR Focus) Computer Serial Control Cable for DSLR Canon 300D/10D

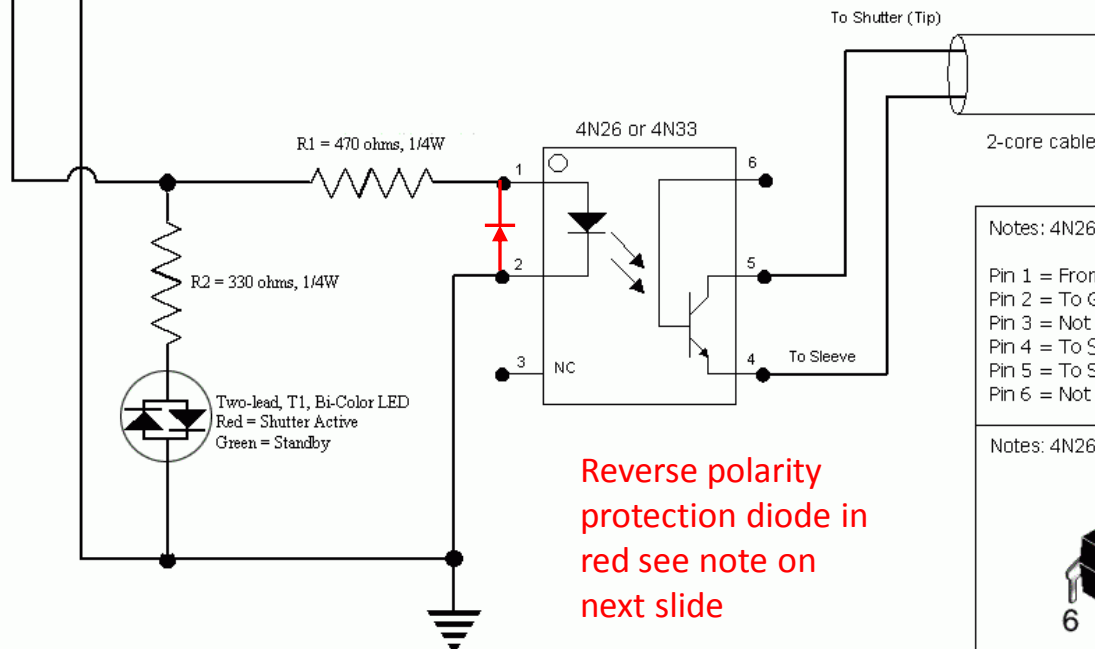
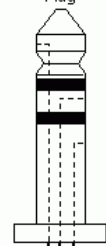
9 pin RS232 port female connector (rear view)



This cable is also useable with the Canon 10D if a suitable 1/8" stereo jack to Canon N3 connector adapter cable is also constructed. Canon cable containing the N3 plug is wired to 1/8" jack as follows:

- Red (Shutter) = tip
- White (Half-Press) = not used
- Bare (Shield) = Body

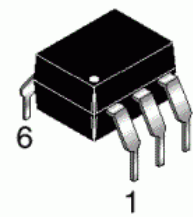
2.5mm Stereo Plug



Notes: 4N26 or 4N33 pinout

- Pin 1 = From RTS
- Pin 2 = To Ground
- Pin 3 = Not connected
- Pin 4 = To Sleeve (Body)
- Pin 5 = To Shutter
- Pin 6 = Not in use

Notes: 4N26 or 4N33 package



Reverse polarity protection diode in red see note on next slide

This diagram is provided as is, without any warranty, stated or implied. If you build it, it is at your own risk and responsibility.

Opto-circuit suggested by: Bill Drummond
Adapted & drawn by: Matthew Chang & Wade Calvert



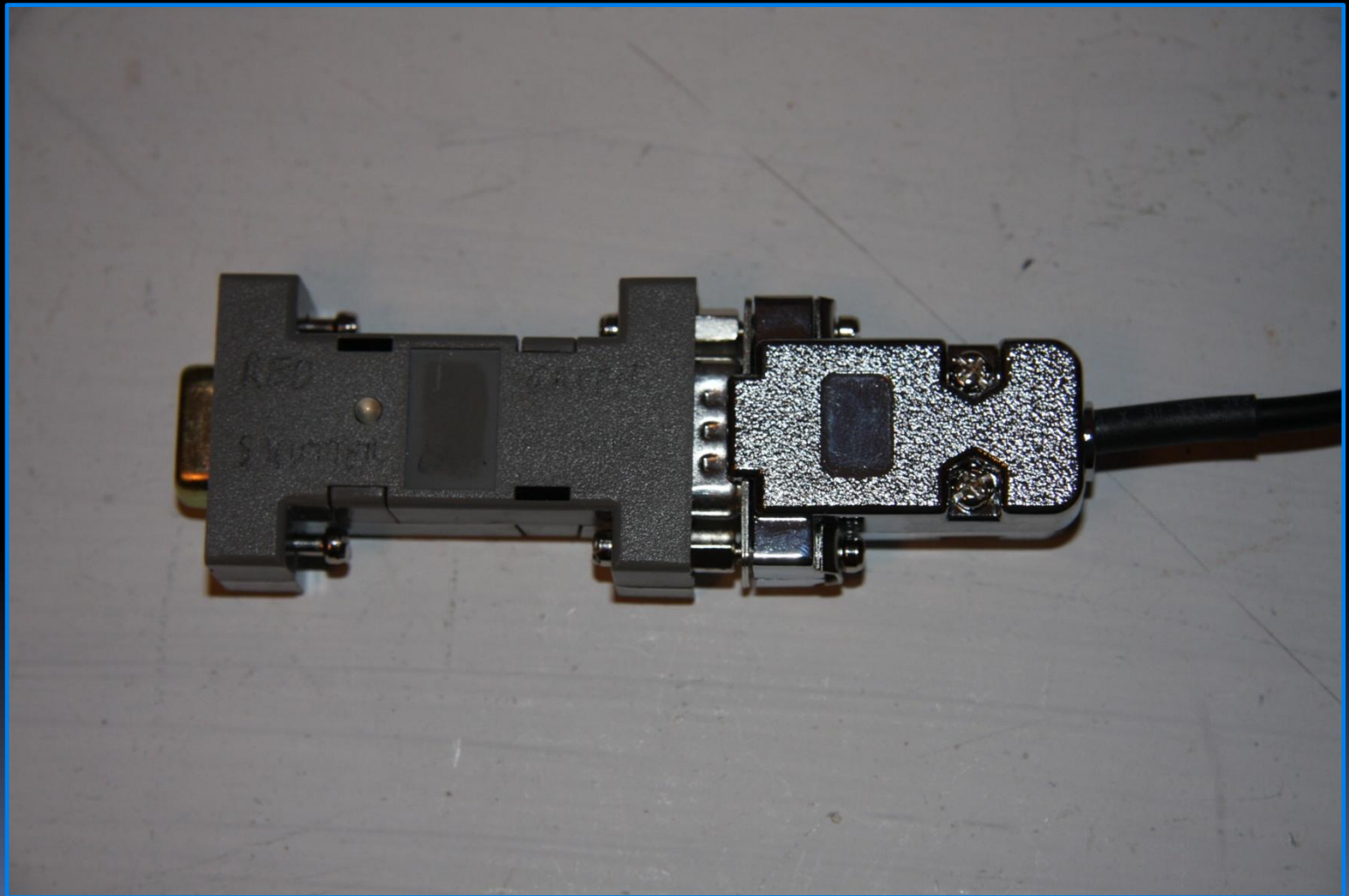
Addition to circuit diagram on previous page

The circuit diagram on the previous page does not allow for the RS232 signals to change to -12V which is in the specification though most computer RS232 interfaces do not supply -12V.

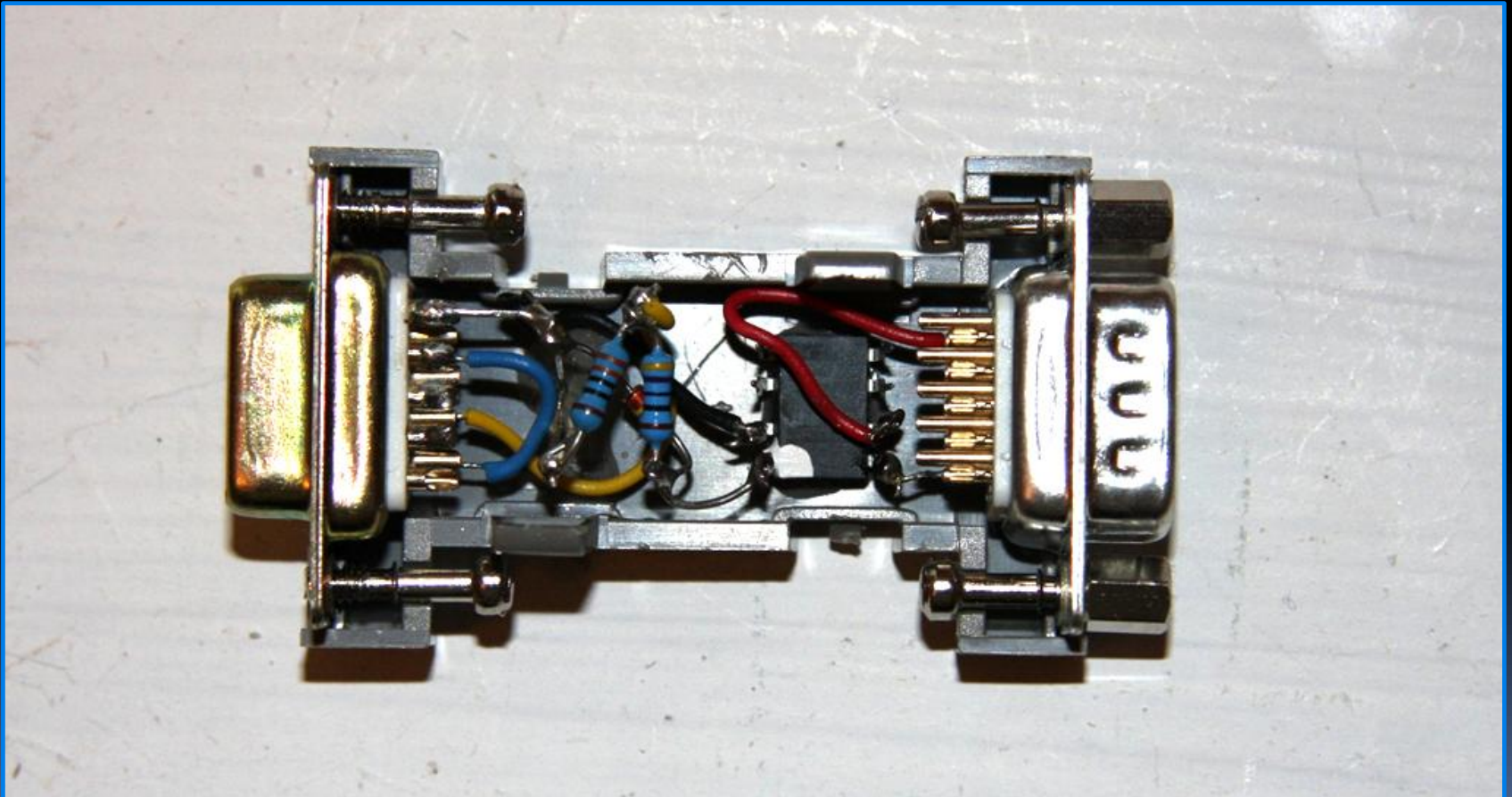
The -12V signal is likely to destroy the diode in the opto coupler, to protect against this an additional small signal diode needs to be connected across pins 1 and 2 of the opto coupler in the opposite direction to the LED in the opto coupler.



Assembled interface



Internal Construction





Connection Leads

- Connection to camera is via a 'Hama' Canon N3 connecting lead and extension cable with the plug cut off and replaced by a 15 way D type sub-miniature connector
 - Computer connection via Maplin USB to RS232 cable.
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