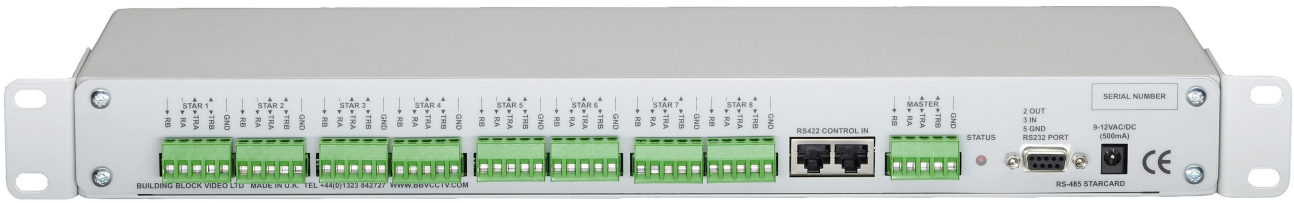
STARCARD CONVERTER

Manual Addendum



Software version CONV1AV39

Building Block Video Ltd
17 Apex Park,
Diplocks Industrial Estate,
Hailsham, East Sussex, BN27 3JU, UK
Tel: + 44 (0) 1323 842727
Fax: +44 (0) 1323 842728
www.bbvcctv.com

Version 39

This manual covers STARCARD/CONVERTER software version **CONV1AV397** and must be read in conjunction with the STARCARD Manual.

Protocols compatible with the Starcard Converter:

360 Vision
BBV RX450/550
CBC SMD20
Chugai
Conway
COP (Pelco D or P)
COP 15-CD51H (Pelco D or P)
Dallmeier DCCP protocol dome
Dennard 2050
DM DTMT (using TAD3 with special s/w)
Forward Vision Mic1-300/400
Ganz ZC-S122/123
JVC 675B 676
LG dome (Pelco D)
Mark Mercer
Meyertech ZVR510 VICTA protocol
Molynx 250/260
NIO D86/Intercepter (Pelco D)
Panasonic CS850/860
Pelco D
Pelco P
Philips RS232/485 (bi-phase via Philips LTC8780/50)
Samsung 641/643 dome 421P camera
Sanyo VCC9200P
Sensormatic RS422 (Ultradome)
Star MD2000
VCL
Vicon Surveyor & V1305DC
Videcon VHSD860 Dome (Pelco P-9600,N,8,1)
Videcon VPC451 Camera (Pelco D-2400,N,8,1)
Videotec Ulisse (Pelco D)
Vista PowerDome

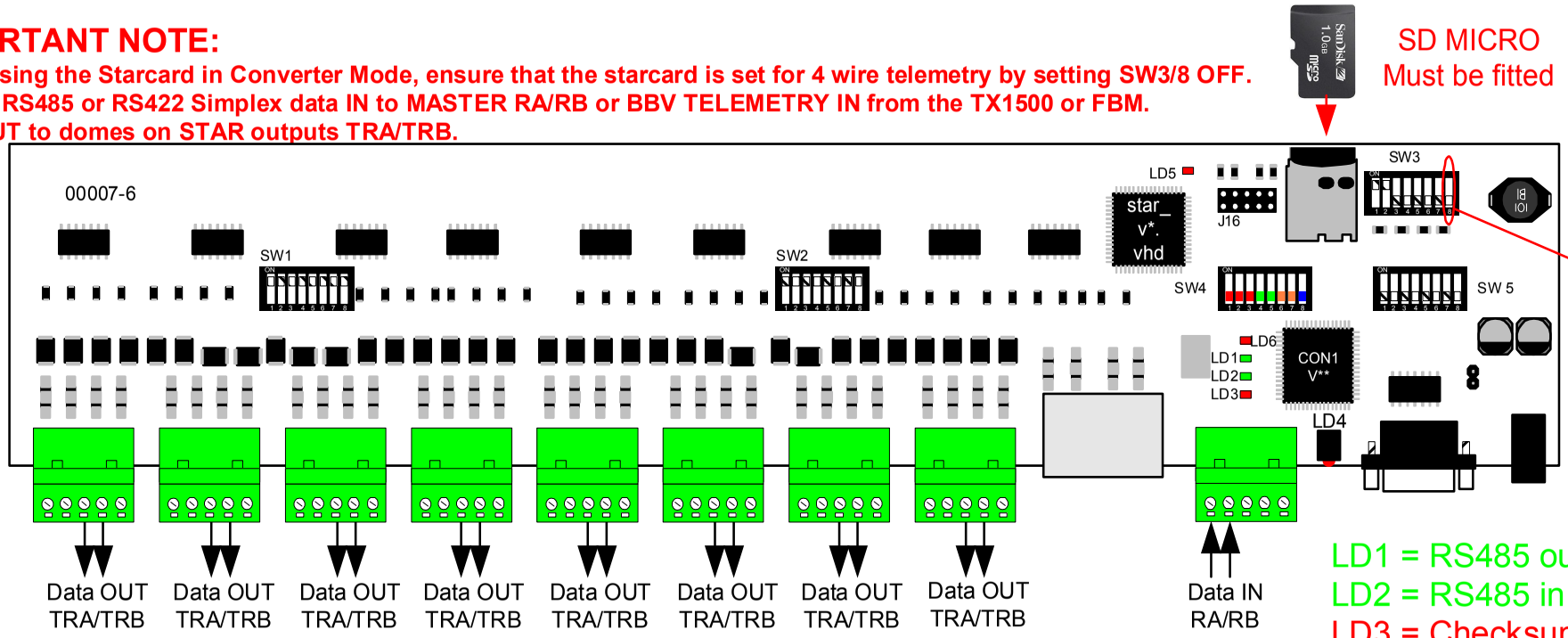
Starcard Converter Manual Version History

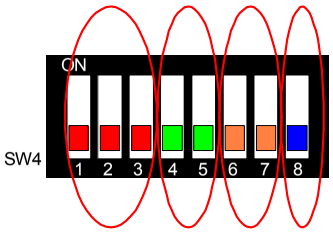
V39 6 June 11	**1. Addition of Dallmeier DCCP dome**
	2. Addition of COP 15-CD51H dome
	3. 360 Vision output protocol now supports Wash/Wipe/Lights for Predator camera
	4. PHOTOSCAN not supported. Use 1-2-1 converter for this (one per dome) CHECK WITH BBV FIRST!
V38 25 Aug 10	1. The addition of the JVC TK675E
	2. Page 14 changed the switch settings they now are correct with sw5/2 on for Dennard RS485
V37.2 15 June 10	1. changed switch numbering on page 26 from SW4 & SW5 to SW1 & SW2
V37 20 April 10	1. No changes, just keeping up to date with revised software name & version. CONV1AV37
V34.3 01 Oct 09	1. Maximum address number added
V34.2 21 Jan 09	1. Page numbers corrected
	2. New back page to manual
V34.1 19 Dec 08	1, The manual showed SW2 when it should have shown SW5
V34 10 Dec 08	1. Update for new PCB 00007-6
V32 23Sep 08	1. Addition of Videotec Ulisse
	2. Additional of NIO/DynaPel D86/Intercepter dome
	3. Improvements to Molynx telemetry timings and pattern playback.
	4. Some changes to Meyertech – Aux 1 output A1 now switched using preset 81 & 82
V30 9 Aug 07	1. Changes to support autopan driving Molynx CAMERA POWER Aux
	2. Additional of zone definition to allow zone blanking with Pelco Esprit PTZ head.
V27 2 Feb 07	1. Improvements to 360->VCL for HOME time programming
	2. Molynx telemetry improvements
	3. Addition to drive DM DTMF receiver via TAD3 with special s/w
	4. Improvement to Mark Mercer o/p protocol giving better control from DM DS2
	5. Modifications to allow control of Bosch dome Pelco D from DM DS2 and Pelco P
V25 22 Jan 06	1. Documented LOCK A3 for 360 Vision Wiper ON/OFF
	2. Added support for CONWAY dome, Videcon VHSD860 dome and VCP451 camera
V24 23 Dec 05	1. Added support for LG dome running Pelco D protocol.
	2. Added support for wiper with 360 Vision->VCL using Lock A3 to toggle wiper
	3. Fix to Pelco D Iris Close command
V23 15 Nov 05	1. Revised Photoscan protocol to repeat ptz command every 1 second to allow domes to move smoothly.
	2. SW5 switch settings have changed to add support for Pelco D and P at 4800 baud.
V22 8 Nov 05	1. Added support for early Photoscan AC fixed speed receivers.
V21 20 June 05	1. Added support for early Vicon V1305DC DC telemetry receivers.
V20 14 June 05	1. Added support for Forward Vision Mic-1300/400 metal Mickey
V19A 31 May 05	1. Added support for Pelco D or Pelco P and 2400 or 9600 baud for COP dome.
V19 26 May 05	1. Pelco output now supports PATTERN define and playback also able to drive esprit wiper.
	2. VICON output protocol amended to support aux 1,2,3 using WASH, WIPE & LIGHTS.
	3. Added support for COP dome.
V18 7 April 05	1. Added support for VICON to MARK MERCER conversion.
	2. JVC676 send ONE TOUCH AUTO FOCUS after all zoom stop commands (SW5/7)
	3. VICON output baud rate selectable between 9600 or 4800 baud (SW5/8)
	4. LED3 (RED) flashes when telemetry into the converter has wrong parity, baud, data bits or wrong way around.
V17 22 Feb 05	1. Added support for Sensormatic RS422 protocol. Ultradome.
V16 8 April 04	1. Improved functionality of 360 Vision from BBV telemetry.
	2. Added support for Mimic tour definition and playback with VCL-360 Vision
	3. Added support for 360 Vision – VCL
	4. Improved Meyertech support by allowing menu access and navigation. Control response also improved.
	5. Improved control response of Molynx protocol.
V15 20 Feb 04	1. Added support for Philips RS232 protocol (bi-phase via LTC8780/50)
V14 4 Jan 04	1. Added support for Meyertech VICTA output protocol.
	2. Bug fix to allow tri-state output to work correctly with a 02005 PCB.
	3. Couple of changes to Molynx protocol to correctly drive focus with RX318
V13 7 Nov 03	1. SW5 output protocol switch settings changed to support additional protocols.
	2. Added support for Vista PowerDome
	3. Added support for Samsung SCC-641/643 dome and zoom/focus with SCC421P static camera.
	4. 4# now performs a remote reset with VCL dome output protocol.
V12 10 Sept 03	1. Added support for CBC SMD20/Star MD2000/Sanyo VCC9200P from BBV.
	2. Added support for Vicon Surveyor from BBV.
	3. VCL output protocol additional features added.
	4. Fix to 360 Vision checksum routine.
	5. Ganz ZC-S122/123 camera sync now set for Line Lock.
V10 11 June 03	1. Added support for 360 Vision output protocol controlled from BBV
	2. Added support for 360 Vision output protocol from VCL protocol.
V9 13 May 03	1. Added support for Pelco P and Pelco D output protocol
	2. BBV, VCL, DENNARD and MARK MERCER output protocols fixed at 9600,N,8,1
	3. BBV input protocol is now fixed at 9600,N,8,1
V8 20 Mar 03	1. Added support to control Molynx 250/260 telemetry receivers
V7 27 Feb 03	1. Added support to control BBV RX450 AC & RX550 DC receivers
	2. Added support to control Chugai/Ganz ZC-S122/123 dome
V6 12 Feb 03	1. Improved control of Panasonic WV-CS850/860 dome.
	2. 2 Patrol will now start ALL domes patrolling
	3. Added support for BW mode selection
V5 11 Feb 03	1. Added support for BBV RS485 output
	2. Added support for JVC TK-C676 protocol
V4 5 Feb 03	1. Added support for Panasonic WV-CS850/860 RS485 dome protocol from BBV.
	2. DM connection details were incorrect, diagram now corrected.
V3 4 Dec 02	1. Addition of protocol conversion module.

Internal view of Starcard MK3 with integral protocol converter

IMPORTANT NOTE:

When using the Starcard in Converter Mode, ensure that the starcard is set for 4 wire telemetry by setting SW3/8 OFF.
Data IN RS485 or RS422 Simplex data IN to MASTER RA/RB or BBV TELEMETRY IN from the TX1500 or FBM.
Data OUT to domes on STAR outputs TRA/TRB.





SW4

1 - 3 Protocol Selection

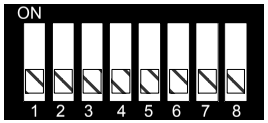
1	2	3	Protocol
OFF	OFF	OFF	BBV RS485 (TX1500/FBM)
ON	OFF	OFF	PELCO P
OFF	ON	OFF	PELCO D
ON	ON	OFF	VCL TP
OFF	OFF	ON	360 VISION
ON	OFF	ON	VICON

4 - 5 Baud

6 - 7 Parity

4	5	Baud	6	7	Parity
OFF	OFF	2400	OFF	OFF	NONE
ON	OFF	4800	ON	OFF	EVEN
OFF	ON	9600	OFF	ON	ODD
ON	ON	19200	ON	ON	NONE

8 Data bits
OFF 8 BITS
ON 7 BITS



SW5

SW5 (1-6) Output Protocol Selection
1 2 3 4 5 6 PROTOCOL/BAUD
Used to select the output protocol and baud rate settings if required.
The following page shows all the protocol/baud rate settings available.

SW5 (7-8) Output Protocol Selection
7 8 OPTIONS
These switches are used to alter some options with some protocols.
Further details are shown in the relevant section of this manual.

Address numbering

Address numbering is limited to the number of addresses supported by the selected protocol; the maximum number of addresses that can be supported is 128. For example, a protocol that supports 256 addresses would support a maximum of 128 addresses when used with the Starcard Converter.

SW5 (1 - 6) Output Protocol & Baud Selection for V39 software

PROTOCOL	BAUD	1	2	3	4	5	6	PAGE
SELF TEST	9600 N 8 1	off	off	off	Off	off	off	-
DEBUG MODE	**19200 N 8 1**	**ON**	off	off	Off	off	off	-
360 VISION	9600 N 8 1	off	ON	ON	ON	ON	off	9 - 10
BBV RS485	**9600 N 8 1**	**ON**	**ON**	**ON**	Off	off	off	-
BBV RX450/RX550	9600 N 8 1	ON	off	off	ON	off	off	-
CHUGAI SMD20	**9600 N 8 1**	**ON**	**ON**	**ON**	**ON**	**ON**	**off**	**11**
CHUGAI ZC- S122	9600 E 8 1	off	ON	off	ON	off	off	12
CONWAY	**9600 N 8 1**	**off**	**ON**	**off**	**ON**	**off**	**ON**	**13**
COP DOME (PELCO P/D)	2400/9600 N 8 1	off	ON	ON	off	off	ON	14
COP 15-CD51H (PELCO P/D)	**2400/9600 N 8 1**	**ON**	**off**	**off**	**off**	**ON**	**ON**	14
Dallmeier DCCP protocol	9600 N 8 1	off	ON	off	Off	ON	ON	15
DENNARD 20xx series	**9600 N 8 1**	**off**	**ON**	**off**	**Off**	**off**	**off**	**15**
DM DTMF via TAD3 (Camera select sent every command)	9600 N 8 1	ON	off	ON	ON	off	ON	16
DM DTMF via TAD3 (Camera select only sent if camera number changed)	**9600 N 8 1**	**off**	**ON**	**ON**	**ON**	**off**	**ON**	**16**
FORWARD VISION	9600 O 8 1	ON	ON	ON	off	off	ON	17 – 18
JVC TK-675B C676	**9600 E 8 1**	**off**	**off**	**off**	**ON**	**off**	**off**	**19**
LG DOME (PELCO D) LPT-OI551HQ/OI553HQ	9600 N 8 1	ON	off	off	ON	off	ON	20
MARK MERCER	**9600 N 8 1**	**ON**	**ON**	off	Off	off	off	20
MEYERTECH VICTA	9600 N 8 1	ON	ON	off	off	off	ON	21
MOLYNX	**9600 E 8 1**	**ON**	**ON**	off	**ON**	off	off	22
NIO/DYNAPEL INTERCEPTER (Pelco D)	9600 N 8 1	off	off	off	off	ON	ON	23
PANASONIC 850	**9600 N 8 1**	**ON**	**off**	**ON**	**Off**	**off**	**off**	**24**
PANASONIC 850	19200 N 8 1	off	ON	ON	Off	off	off	
PELCO P	**9600 N 8 1**	**off**	**off**	**ON**	**ON**	**off**	**off**	25
	9600 O 8 1	ON	off	ON	ON	off	off	
	9600 E 8 1	**off**	**ON**	**ON**	**ON**	**off**	**off**	
	4800 N 8 1	ON	ON	ON	ON	off	off	
	4800 O 8 1	**off**	**off**	**off**	**Off**	**ON**	**off**	
	4800 E 8 1	ON	off	off	Off	ON	off	
	2400 N 8 1	**off**	**ON**	**off**	**Off**	**ON**	**off**	
	2400 O 8 1	ON	ON	off	Off	ON	off	
	2400 E 8 1	**off**	**off**	**ON**	**Off**	**ON**	**off**	
	9600 N 8 1	ON	off	ON	off	ON	off	

PELCO D	**9600 O 8 1**	**off**	**ON**	**ON**	**off**	**ON**	**off**	
	9600 E 8 1	ON	ON	ON	off	ON	Off	
	4800 N 8 1	**off**	**off**	**off**	**ON**	**ON**	**Off**	
	4800 O 8 1	ON	off	off	ON	ON	Off	
	4800 E 8 1	**off**	**ON**	**off**	**ON**	**ON**	**Off**	
	2400 N 8 1	ON	ON	off	ON	ON	Off	
	2400 O 8 1	**off**	**off**	**ON**	**ON**	**ON**	**Off**	
	2400 E 8 1	ON	off	ON	ON	ON	Off	
PHILIPS RS232	**9600 N 8 1**	**off**	**off**	**ON**	**off**	**off**	**ON**	**26**
SAMSUNG SCC641/643	9600 N 8 1	off	ON	off	off	off	ON	27
SENSORMATIC RS422	**4800 N 8 1**	**ON**	**off**	**ON**	**off**	**off**	**ON**	**28**
VCL	9600 N 8 1	off	off	ON	Off	off	off	29 – 30
VICON	**4800/9600 N 8 1**	**off**	**off**	**off**	**off**	**off**	**ON**	**31**
VIDECON VCP451	2400 N 8 1	off	off	ON	ON	off	ON	32
VIDECON VHSD860	**9600 N 8 1**	**ON**	**ON**	**off**	**ON**	**off**	**ON**	**33**
VIDEOTEC ULISSE (Pelco D)	9600 N 8 1	ON	ON	ON	ON	off	ON	34
VISTA POWERDOME	**9600 N 8 1**	**ON**	**off**	**off**	**off**	**off**	**ON**	**35**

FORMAT OF BAUD SETTINGS, BAUD RATE PARITY (NONE, EVEN, ODD) DATABITS STOPBITS

STOP AND READ BEFORE INSTALLING!

AS 3RD PARTY PROTOCOLS ARE NOT UNDER THE CONTROL OF BBV, WE CANNOT GUARANTEE THAT THIS UNIT WILL PROVIDE THE EXACT FUNCTIONALITY REQUIRED.

IT IS STRONGLY RECOMMENDED THAT OPERATION IS CONFIRMED DURING PRE BUILD TESTING BEFORE INSTALLING ON SITE.

PLEASE CONTACT OUR CUSTOMER SUPPORT DEPARTMENT IF YOU HAVE ANY QUESTIONS/ISSUES:

Tel: ++ 44 (0) 1323 444600

Email: support@bbvcctv.com

RS232 serial port

The DB9F connector provides the ability to use a laptop PC to monitor the data being sent out of the Starcard via RS232.

With the optional protocol converter fitted, on power up or if SW4 or SW5 switches are altered the unit sends the current protocol, baud rate and parity settings. Please be aware that the laptop baud rate and parity must match the settings selected with SW5. If the settings do not match then the laptop display will have no meaning.

A power up message example is shown below:

BBV Protocol Converter V39
www.bbvcctv.com
SW4(IN) = 10 BBV:9600,N,8,1
SW5(OUT) = A3 MARK MERCER V7.3:9600,N,8,1

A debug mode can also be selected which provides detailed information for each command received. Whilst trouble shooting BBV engineers may ask you to use this mode with a laptop or other PC:

BBV Protocol Converter V39
www.bbvcctv.com
SW4(IN) = 10 BBV:9600,N,8,1
SW5(OUT) = 21 DEBUG MODE:19200,N,8,1

CAM=00 W3=00 W4=14 W5=40 W6=24 PL 064TD 036
CAM=00 W3=00 W4=14 W5=06 W6=3C PL 006TD 060
CAM=00 W3=00 W4=12 W5=2E W6=38 PR 046TD 056
CAM=00 W3=00 W4=12 W5=40 W6=08 PR 064TD 008
CAM=00 W3=00 W4=08 W5=00 W6=0C TU 012
CAM=00 W3=00 W4=04 W5=40 W6=00 PL 064
CAM=00 W3=00 W4=14 W5=32 W6=34 PL 050TD 052
CAM=00 W3=00 W4=12 W5=2A W6=38 PR 042TD 056
CAM=00 W3=00 W4=04 W5=36 W6=00 PL 054
CAM=00 W3=00 W4=00 W5=00 W6=00 Cam 00 stop

The example above shows the debug output for Camera 1. Driving pan/tilt followed by a stop command.

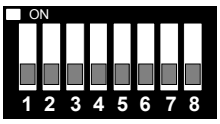
The following table shows the possible input and output protocols that are supported with this version of software.

Output Protocol	Input Protocol					
	BBV TX1500/FBM	PELCO D/P	VCL	360 VISION	VICON	Page
360 VISION	X		X			9 - 10
BBV RS485 (RX45X/55X)	X	X				
BBV RX450/550	X	X				
Chugai SMD20	X					11
Chugai ZCS122/123	X					12
CONWAY DOME	X					13
COP (PELCO D)	X					14
DALLMEIER DCCP	X					15
DENNARD 2050	X	X				15
DM DTMF(VIA TAD3)	X					16
FORWARD VISION	X					17 – 18
JVC TK 675E/C676	X	X				19
LG DOME (PELCO D)	X					20
MARK MERCER	X	X			X	20
MEYERTECH VICTA	X					21
MOLYNX 250/260	X	X				22
NIO D86 INTERCEPTER	X					23
PANASONIC CS850/860	X					24
PELCO D/P	X	X				25
PHILIPS RS232	X					26
SAMSUNG SCC641/643	X					27
SENSORMATIC RS422	X					28
VCL TP	X	X		X		29 – 30
VICON	X					31
VIDECON VCP451	X					32
VIDECON VHSD 860	X					33
VIDEOTEC ULISSE	X					34
VISTA POWERDOME	X					35

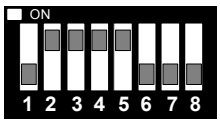
Protocol specific information

360 VISION from BBV telemetry

SW4



SW5



Connect dome D+ to Starcard/Converter TRA and dome D- to Starcard Converter TRB.
Set the dome address using the DIL switch to match the number of the camera input of the TX1500.

Ensure that the dome at the end of a daisy chained RS485 run has the RS485 terminated and the intermediate domes have the RS485 de-terminated.

The following functionality is provided:
Manual pan/tilt control with 16 speed steps from 1 to 127, (slowest to fastest)
Zoom with Manual Iris and Focus override.
Operating the Zoom will re-enable auto focus and iris after manual adjustment
32 preset positions.
2 sequential preset tours of preset positions 1 - 16, tour 1 high speed and tour 2 slow speed. The dwell time is fixed at 10 seconds per preset position. Preset positions can be removed from the tours.
All 32 privacy zones can be programmed and disabled if required.

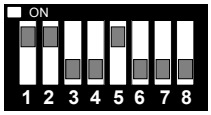
(V39 Addition) Wash/Wipe/White Light supported using Wash/Wipe/Lights feature of controller.

Advanced Function	**TX1500 Procedure**
180 degree pan flip (U turn)	**1 #**
Program a privacy zone	**2 #** followed by **PROGRAM 1-32 PRESET**
Clear a privacy zone	**3 #** followed by **PROGRAM 1-32 PRESET**
Add preset position to the tours	Programming a preset position adds the preset into the tour. (1 – 16 only)
Remove a preset from the tours	**PROGRAM 50 PRESET** followed by **1-16 PRESET**
Start preset tour 1 – high speed	**1 PATROL** (max speed with 10 second dwell)
Start preset tour 2 – slow speed	**2 PATROL** (speed 32 with 10 second dwell)
Set autoflip mode	**PROGRAM 51 PRESET** followed by **1 PRESET** = autoflip OFF **2 PRESET** = ON tilt at down limit **3 PRESET** = ON when at limit
Set Video Gain/Lift and Sync timing	**PROGRAM 52 PRESET** followed by **IRIS CLOSE/OPEN** to increase/decrease GAIN **FOCUS NEAR/FAR** to increase/decrease LIFT **ZOOM IN/OUT** to advance/retard timing Move joystick when finished.
Set IR Filter mode	**PROGRAM 53 PRESET** followed by **1 PRESET** = mono mode/auto off **2 PRESET** = colour mode/auto off **3 PRESET** = auto/kill colour **4 PRESET** = auto/don't kill colour
Set Home functions (Revised in V16 software)	**PROGRAM 54 PRESET** followed by **1-5 PRESET** = Function (1=enable,2=disable,3=preset 1,4=tour1,5=mimic 1) **1-60 PRESET = timeout in minutes**
Unit Reset. This simulates powering the dome off/on	**PROGRAM 55 PRESET** followed by **PROGRAM 55 PRESET**
Preset Tour Definition Example to program tour 1 Step 1 – define tour. PROGRAM 56 PRESET Step 2 – tour 1 or 2. 1 PRESET Step 3 – 4 presets for each preset point 1 PRESET (point 1)	**PROGRAM 56 PRESET (start definition)** **1 or 2 PRESET – Tour number** **1 – 64 PRESET (tour point number)** **1 – 32 PRESET (preset number)** **1 – 64 PRESET (speed)**

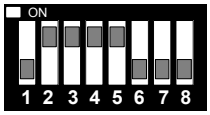
1 PRESET (PRESET 1) 64 PRESET (max speed) 10 PRESET (10 seconds dwell) Repeat step 3 for each point until the last point Step 4 – last tour point. PROGRAM 57 PRESET 3 PRESET (point 3) 4 PRESET (PRESET 4) 32 PRESET (middle speed) 2 PRESET (2 seconds dwell) The tour is now defined	**1 – 64 PRESET (dwell in seconds** **repeated for each point apart from last** **PROGRAM 57 PRESET (last point)** **1 – 64 PRESET (tour point number)** **1 – 32 PRESET (preset number)** **1 – 64 PRESET (speed)** **1 – 64 PRESET (dwell in seconds**
Mimic Tour Definition (AUTOPAN will replay the mimic tour)	**PROGRAM 58 PRESET (start definition)** **Use joystick and zoon to move dome around required tour.** **PROGRAM 59 PRESET (end definition)**
Fast Shutter ON (ANPR mode)	**PROGRAM 60 PRESET**
Fast Shutter OFF (normal mode)	**PROGRAM 61 PRESET**

360 VISION from VCL telemetry

SW4



SW5



Connect dome D+ to Starcard Converter TRA and dome D- to Starcard Converter TRB.

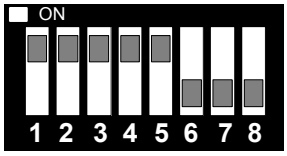
Set the dome address using the DIL switch to match the number of the camera input of the TX1500. Ensure that the dome at the end of a daisy chained RS485 run has the RS485 terminated and the intermediate domes have the RS485 de-terminated.

The following functionality is provided:
Manual pan/tilt control with 16 speed steps from 1 to 127 (slowest to fastest)
Zoom with Manual Iris and Focus override.
Operating the Zoom will re-enable auto focus and iris after manual adjustment
32 preset positions.
Preset 100 – 127 will program the dome privacy zone 1 – 27. These can be disabled within the VCL privacy menu by setting the appropriate preset to PRESET. The dome will move to show the privacy scene to allow toggling the privacy back on by selecting PRIVATE.
Tour definitions are compatible with the VCL programming method 2 including dwell time and speed per tour point.
The dome home feature can be programmed using the standard VCL control menu.
In addition to the standard functions offered by the VCL control system the following features are available:

Set autoflip mode	program preset 51 followed by goto preset 1 = autoflip OFF goto preset 2 = ON tilt at down limit goto preset 3 = ON when at limit
Set Video Gain/Lift and Sync timing	program preset 52 followed by iris close/open to increase/decrease GAIN focus near/far to increase/decrease LIFT zoom in/out to advance/retard timing Move joystick when finished.
Set IR Filter mode	program preset 53 followed by goto preset 1 = mono mode/auto off goto preset 2 = colour mode/auto off goto preset 3 = auto/kill colour goto preset 4 = auto/don't kill colour
Set Home functions (fixed at 5 minutes)	program preset 54 followed by goto preset 1 = Enable to preset 1 goto preset 2 = Enable to patrol 1 (fast) goto preset 3 = Enable to patrol 2 (slow) goto preset 4 = Disable home
Unit Reset. This simulates powering the dome off/on	program preset 55 twice

Chugai SMD20, STAR MD2000, SANYO VCC9200P from BBV telemetry

SW5



Connect dome DATA+ to Converter TRA and dome DATA- to Converter TRB.
Set the dome address using the DIL switch to match the number of the camera input of the TX1500.

Ensure that the dome at the end of a daisy chained RS485 run has the RS485 terminated and the intermediate domes have the RS485 de-terminated.

This type of dome can be addressed from 1 – 31. To allow use of more that 31 domes on a TX1500 system the converter can be adjusted to select banks of cameras as follows:

Camera Range	SW5/7	SW5/8
1 - 31	OFF	OFF (Default setting)
32 - 62	ON	OFF
63 - 93	OFF	ON
94 - 124	ON	ON

When the converter is set for camera range 32 – 62, the dome connected into video input 32 must have the address set for 1 and video input 33 must have the address set to 2 etc up to video input 62 with the address set to 31. Multiple Starcard Converters must be used when controlling more that 31 cameras with SW5/7 and SW/8 set appropriately.

i). Timing to the dome is critical, due to the nature of the dome protocol (half duplex command and response commands). The dome will ignore any command sent before it has finished executing the previous command; for example, a goto preset command sent whilst the dome is searching for another preset, (e.g. multiple alarm occurrences in quick succession).

ii) The converter is limited to control ONE dome at a time because of this timing. A lockout period prevents other cameras on a single Starcard from being controlled until 5 seconds after the last command has been sent to the current camera.
This includes preset commands.

iii) Supported manual PTZ with manual focus which reverts back to auto focus on a pan/tilt or zoom.

iv) 64 preset positions are supported

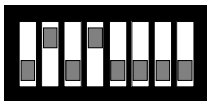
v) The AUTOPAN key is used to start patrol 2.

vi) 2 preset patrols are provided and the preset positions in each patrol are programmable. Patrol 1 has a fixed full speed movement to each preset and a dwell of 10 seconds. To define patrol 1, first PROGRAM 65 PRESET, followed by GOTO preset for each of the presets to be patrolled. Up to 64 presets can be programmed. Each preset position must be programmed prior to defining the patrol. To end the definition PROGRAM 66 PRESET.
Patrol 2 has a fixed slow speed movement between preset positions and a 10 second dwell at each position. Programming is similar to Patrol 1. PROGRAM 67 PRESET to start definition, goto preset … followed by PROGRAM 68 PRESET to end the definition. Patrol 2 can also be started by pressing the AUTOPAN key.

vii) LEDS, LD3 flashes when commands are received for domes that lie outside of the 31 camera range set by SW5/7 and SW5/8.

IMPORTANT: THE DOME WILL IGNORE ALL COMMANDS SENT FROM THE CONVERTER WHEN IT IS MOVING TO A PRESET POSITION UNTIL THE PRESET POSITION HAS BEEN REACHED. THIS RELATES TO MANUAL PRESET OR DURING A PATROL.

SW5



Chugai/Ganz ZC-S122/123 – Fixed at 9600,E,8,1
Control from BBV protocol only.

Function	TX1500 Procedure
Menu ON/OFF	**1 #**
SET (whilst in menu)	**2 #**
CLR (whilst in menu)	**3 #**
PRESET SEQUENCE	**1 PATROL**
PLAYBACK TRACE	**2 PATROL**
AUTOPAN	**AUTOPAN**
AUX 1 OUTPUT ON/OFF	**LIGHTS**
AUX 2 OUTPUT ON/OFF	**WIPER**

Notes:
Connect dome A/+(pin 1, BROWN) to Starcard TRA and dome B/- to Starcard TRB.
Each dome must be set to 9600 Baud with switch 5 OFF, switch 6 ON. Set the dome address using the dome rotary switches to match the number of the camera input of the TX1500. Ensure that domes at the end of the RS485 run are terminated by turning switch 8 ON and the intermediate domes have the switch 8 OFF.

A total of up to 96 domes are supported with a maximum of 32 domes per star output.

Menu access:
Press 1# will toggle the Menu display ON/OFF.
Whilst the menu is displayed the joystick is used to navigate.
2# is used as SET to access a menu option and
3# is used as CLR to go back.

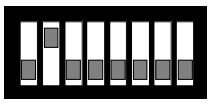
Addition functions are available for the currently displayed dome:
AUTOPAN is started by pressing the AUTOPAN key.
PRESET SEQUENCE is started by pressing 1 PATROL.
TRACE playback is started by preceding 2 PATROL

The protocol converter can directly access preset 1 – 64 by pressing the preset number followed by the PRESET key.

To program a preset position, press PROGRAM followed by the preset number and the PRESET key. See the TX1500 manual for detailed information.

CONWAY dome from BBV telemetry only

SW5



Connect the twisted pair as follows:
Dome A to Converter TRB
Dome B to Converter TRA

The following functionality is provided:
Variable speed Pan/Tilt
Zoom/Focus/Iris
64 preset positions
Preset tour 1 & 2 playback only
Wash/WIPE/LIGHTS (IR Filer ON/OFF)
Privacy enable, disable

Additional dome features

Dome Function	**TX1000 Keystroke**	**TX1500 Keystroke**
ENABLE PRIVACY	hold **#** and tap **WIPE**	**2 #**
DISABLE PRIAVCY	hold **#** and tap **AUTOPAN**	**3 #**
TOUR 1 PLAYBACK	hold **PATROL** and tap **1**	**1 PATROL**
TOUR 2 PLAYBACK	hold **PATROL** and tap **2**	**2 PATROL**
IR CUT FILTER ON/OFF	**LIGHTS ON/OFF**	**LIGHTS ON/OFF**

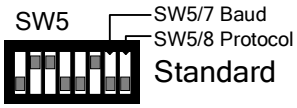
Note:
The Data connections A/B are crossed when using this dome so please connect the dome A to green connector TRB and dome B to green connector TRA.

Preset tours programming is NOT supported. These must be defined first using a CONWAY controller.

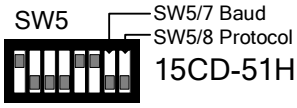
For more information please refer to the dome handbook.

COP / COP STANDARD or 15CD-51H PELCO D or PELCO P from BBV telemetry only

Connect the twisted pair as follows:
dome RS485+ (ORANGE) to Converter TRA
dome RS485- (YELLOW) to Converter TRB



Baud Rate	SW5/7
2400	OFF (default)
9600	ON
Protocol	SW5/8
PELCO D	OFF (default)
PELCO P	ON



Two versions of COP dome are supported.
The 15CD-51H dome version uses different presets for patterns and patrols although the commands from the BBV controller are the same. Please set SW5 as shown above for the 15CD-H51 or general COP.
Set the dome for protocol and baud rate. The default is 2400 baud and Pelco D telemetry.
Set the dome address to match the number of the camera input of the matrix.

The following functionality is provided:
Variable speed Pan/Tilt
Zoom/Focus/Iris
63 preset positions.
Menu access and navigation
Pattern record and playback (Group 1 record/playback 15CD-51H)
Preset patrol 1 and 2 playback (Pattern 1 & 2 playback 15CD-51H)

Additional Dome features

Dome Function	**TX1000 Keystroke**	**TX1500 Keystroke**
DISPLAY DOME MENU	hold **#** and tap **WASH** and navigate using the joystick and IRIS keys	**1 #** and navigate using the joystick and IRIS keys
PATTERN RECORD START	hold **#** and tap **AUTOPAN** then use joystick to move dome around required scenes.	**3 #** then use joystick to move dome around the required scenes.
PATTERN RECORD STOP	hold **#** and tap **LIGHTS**	**4 #**
PATTERN PLAYBACK (GROUP 1 for 15CD-51H, preset 151)	**AUTOPAN**	**AUTOPAN**
PATROL 1 PLAYBACK (PATTERN 1 for 15CD-51H, preset 131)	hold **PATROL** and tap **1**	**1 PATROL**
PATROL 2 PLAYBACK (PATTERN 2 for 15CD-51H, preset 132)	hold **PATROL** and tap **2**	**2 PATROL**

DALLMEIER DCCP dome protocol

SW5

Connect the twisted pair as follows:
Dome RXD+ to Converter TRA
Dome RXD- to Converter TRB

The following functionality is provided:
Variable speed Pan/Tilt
Zoom/Focus/Iris
Preset position 1-89
Tour 1,2 & 3 playback (defined within dome menu)

Additional dome features

Dome Function	**TX1000 Keystroke**	**TX1500 Keystroke**
DISPLAY DOME MENU	hold **#** and tap **WASH** and navigate using the joystick, zoom and iris	**1 #** and navigate using the joystick, zoom and iris
TOUR 3 PLAYBACK	**AUTOPAN**	**AUTOPAN**
TOUR 1 PLAYBACK	hold **PATROL** and tap **1**	**1 PATROL**
TOUR 2 PLAYBACK	hold **PATROL** and tap **2**	**2 PATROL**

For more information please refer to the dome handbook.

SW5

DENNARD 20xx – Fixed at 9600,N,8,1 (adjust SW4 to suit input protocol)

Function	**TX1500 Procedure**	**Pelco Procedure**
Display Dome Menu	**1 #**	SAVE PRESET 95
Display User Menu	**2 #**	GOTO PRESET 33
Display Technicians Menu	**3 #**	GOTO PRESET 94
Start current dome's Sequence 001	**1 PATROL**	GOTO PRESET 97
Start ALL DOMES Sequence 001	**2 PATROL**	GOTO PRESET 98

Navigate through the dome menu using pan/tilt and issue GOTO PRESET 1 to select current line.

DM DTMF RECEIVERS USING TAD3 from BBV telemetry only.

SW5

SEND CAMERA SELECTS BEFORE EVERY MOVEMENT COMMAND (useful for noisy links to ensure that the correct camera is controlled although this provides increased control delay)

- OR -

SW5

ONLY SEND CAMERA SELECT WHEN CAMERA CHANGES
(This is the normal method and gives improved control for most applications)

Notes
The DM TAD3 must be sourced from DM and fitted with special software TTT1_0 in IC3 position and ensure that the following configuration links are fitted. If the link is multi pins then only fit links that are shown and not fitted if not shown

J2/5-6 J4/1-2 J5/2-3 J6/2-3 J7/1-2 J9 – fitted

Connect from the

STARCARD CONVERTER	TAD3 CBUS DIN SOCKET
TRA	pin 2
TRB	pin 1
GROUND	pin 3

DTMF from the TAD3 to DTMF receivers use the TONE or AUDIO connector as required.

In addition to the normal manual pan/tilt/zoom commands the following are also supported.
WASH = AUX 1
WIPER = AUX 2
LIGHTS = AUX 3

AUTOPAN = *858001 START, *858000 STOP
PATROL = *854001 START, *854000 STOP

FORWARD VISION MIC-1300/400 from BBV telemetry only

SW5

Connect the twisted pair as follows:
Dome RX A (YELLOW) to Converter TRB (A & B swapped)
Dome RX B (WHITE) to Converter TRA

Set the dome address to match the number of the camera input of the matrix.

The following functionality is provided:
Variable speed Pan/Tilt
Zoom/Focus/Iris
64 preset positions.
Patrol (sequence) record. 8 positions of presets 1 – 16
Autopan

Additional dome features

Dome Function	**TX1000 Keystroke**	**TX1500 Keystroke**
SPECIAL PROGRAMMING (see below)	hold **#** and tap **WASH**	**1 #**
DIGITAL ZOOM ON/OFF	hold **#** and tap **WIPE**	**2 #**.
MANUAL/AUTO EXPOSURE	hold **#** and tap **AUTOPAN**	**3 #**
IR FILTER IN/OUT	hold **#** and tap **LIGHTS**	**4 #**
ENABLE ALL SCENE	Hold **#** and tap **WASH**, **PROGRAM 1**, **1**	**1 # PROGRAM 1 PRESET**
DISABLE ALL SCENE	Hold **#** and tap **WASH**, **PROGRAM 1**, **2**	**1 # PROGRAM 2 PRESET**
TOGGLE CURSOR ON/OFF	Hold **#** and tap **WASH**, **PROGRAM 1**, **3**	**1 # PROGRAM 3 PRESET**
ENABLE AROUND CURSOR	Hold **#** and tap **WASH**, **PROGRAM 1**, **4**	**1 # PROGRAM 4 PRESET**
DISABLE AROUND CURSOR	Hold **#** and tap **WASH**, **PROGRAM 1**, **5**	**1 # PROGRAM 5 PRESET**

PROGRAM PRESET PATROL
The STARCARD CONVERTER supports a single preset patrol per dome with a programmable dwell time and up to 8 preset positions. Please ensure that you program the preset positions first using the normal procedure. The keystrokes used will depend on the controller used. The TX1000 and TX1500 procedures are shown below.

TX1000
a. Hold **#** and tap **WASH**, then Hold **PATROL** and tap **1** (patrol programming mode)
b. Hold **PRESET** and tap **1** – **16** (dwell time 1 – 16 seconds)
c. Hold **PRESET** and tap **1** – **16** (first preset position)
d. repeat step C for up to 8 preset positions total
e. Hold **PATROL** and tap **1** (save the dome patrol)

TX1500
a. **1 #** then **1 PATROL** (patrol programming mode)
b. **1** – **64 PRESET** (dwell time 1 – 64 seconds)
c. **1** – **64 PRESET** (first preset position)
d. repeat step C for up to 8 preset positions in total
e. **1 PATROL** (save the dome patrol)

In addition, the following dome features are supported. First either 1# from TX1500 or Hold # and tap WASH then program the following presets:

FUNCTION	PROGRAM PRESET
PAN REVERSE ON/OFF (PRESET 194/195)	6 ON, 7 OFF
AUTO IR ON/OFF (PRESET 196/197)	8 ON, 9 OFF
INTERMITANT WIPE ON/OFF (PRESET 198/199)	10 ON, 11 OFF
SOFTLIMIT TOP LEFT (PRESET 200)	12
SOFTLIMIT BOTTOM RIGHT (PRESET 201)	13
NONE DWELL TOP LEFT (PRESET 202)	14
NONE DWELL BOTTOM RIGHT (PRESET 203)	15
AUTOHOME PRESET 1 (PRESET 204)	16
AUTOHOME SEQUENCE (PATROL) (PRESET 205)	17
AUTOHOME OFF (PRESET 206)	18
MULTI ALARM ON/OFF (PRESET 207/208)	19 ON, 20 OFF
DIGITAL ZOOM ENABLE/DISABLE (PRESET 209/210)	21 ON, 22 OFF
SET TOUR1,2,3,4,5,6 (PRESET 211-216)	23 – 28
AUTOFLIP ON/OFF (PRESET 217/218)	29 ON, 30 OFF
WASHWIPE ON/OFF (PRESET 219/220)	31 ON, 32 OFF
PRIVACY SET CURSOR (PRESET 221)	33
PRIVACY INIT PARAMETER (PRESET 222)	34
PRIVACY LOAD PARAMETER (PRESET 223)	35
PRIVACY SAVE PARAMETER (PRESET 224)	36
PRIVACY HIDE CURSOR (PRESET 225)	37
PRIVACY SHOW CURSOR (PRESET 226)	38
PRIVACY CLEAR CENTRAL (PRESET 227)	39
PRIVACY SET CENTRAL (PRESET 228)	40
PRIVACY SET STYLE (PRESET 229)	41
PRIVACY HIDE STYLE (PRESET 230)	42
PRIVACY SHOW STYLE (PRESET 231)	43
PRIVACY REPLACE ALL (PRESET 232)	44
PRIVACY UNCOVER ALL (PRESET 233)	45
PRIVACY CLEAR WHOLE (PRESET 234)	46
PRIVACY SET WHOLE (PRESET 235)	47
AUTO ALARM ON/OFF (PRESET 236/237)	48 ON, 49 OFF
AUTO LOWLIGHT ON/OFF (PRESET 238/239)	50 ON, 51 OFF)
CAMERA RECALIBRATE (PRESET 251)	52
RESET PRESETS (PRESET 255)	53

As the TX1000 supports up to preset 16 all commands that require preset 17 and higher can't be accessed. A TX1500 must be used in this case.

For example to enable auto IR use the following keystrokes
TX1000
Hold # and tap WASH (extended dome command mode)
PROGRAM 1 then 8 (program preset 8)

TX1500
1 # (extended dome command mode)
PROGRAM 8 PRESET (program preset 8)

JVC TK-C676 – Fixed at 9600,E,8,1 (adjust SW4 to suit input protocol)

SW5

Function	TX1500 Procedure	Pelco Procedure
Display menu and EXIT	**1 #**	SAVE PRESET 95
SET (whilst in menu)	**2 #**	GOTO PRESET 33
Toggle Extended Dynamic Range	**3 #**	GOTO PRESET 94
Cycle BW mode, ON/OFF/AUTO	**4 #**	
Start dome AUTO PATROL	**1 PATROL**	GOTO PRESET 97
As above for ALL DOMES	**2 PATROL**	GOTO PRESET 98
Start dome AUTOPAN	**AUTOPAN**	GOTO PRESET 99
Force AUTOFOCUS after zoom	**SW5/7 ON will force the dome to AUTOFOCUS after a zoom stop command. This is useful when used with 675BE domes.**	

Notes:
Connect dome RX- to Starcard TRB and dome RX+ to Starcard TRA.
Each dome must be set to Multi-drop, Simplex mode by setting dome switch 4 & 5 ON. Set each dome address using the dome rotary switches. This address must match the number of the camera input of the telemetry controller.

To display the current dome's menu, press either 1# with the BBV TX1500 or SAVE PRESET 95 using Pelco-P or Pelco-D protocol. Use standard PAN/TILT and where required ZOOM to navigate through the menus. To simulate the SET key to navigate into sub-menus press 2# with a TX1500 or GOTO PRESET 33 when using Pelco protocols. To exit the current menu press 1# for the TX1500 or SAVE PRESET 95 with Pelco.

Addition functions.
Pressing AUTOPAN with a TX1500 or GOTO PRESET 99 with Pelco will cause the current dome to start an AUTOPAN.
Pressing 1 PATROL with a TX1500 or GOTO PRESET 97 with Pelco will cause the current dome to start an AUTOPATROL.
Pressing 2 PATROL with a TX1500 or GOTO PRESET 98 with Pelco will cause ALL the domes to start an AUTOPATROL.

Extended Dynamic Range can be toggled ON/OFF using 3# with the TX1500 or GOTO PRESET 94 with Pelco.
B/W Mode can be cycled between ON/OFF/AUTO using 4# with the TX1500.

Camera mode display. Protocol Converter SW5/8
If protocol converter switch SW5/8 is set to ON then each time the Extended Dynamic Range or BW mode is changed or AUTOPATROL is selected then the dome title is altered to display these settings. If it is preferred to use the dome camera title for titling then set switch SW5/8 OFF. The settings will still be changed but will not be shown.

Presets
The dome home preset position is preset 0. As most control systems do not directly support preset 0, preset 1 is used instead. This means that in practice, preset 1 is home, preset 2-32 are preset 2-32 and the dome's preset 1 is not used. This could only be an issue when programming alarms directly into the dome. Do not use preset position 1 unless this is programmed from within the dome menu.

JVC TK-C675B – Fixed at 9600,E,8,1 (adjust SW4 to suit input protocol)

Function	TX1500 Procedure	Pelco Procedure
SHUTTER SPEED	**1 #**	SAVE PRESET 95
BACKLIGHT AREAS	**2 #**	GOTO PRESET 33
AGC 0,12,20dB	**3 #**	GOTO PRESET 94
DOME RESET	**4 #**	

A dome reset sets the camera as follows:-
Shutter to 1/50 sec, Backlight comp. off AGC to 20dB
The dome will display any change of Shutter Speed, Backlight or AGC for a short period.

On screen display of preset position, P01 - P16 or MANUAL during manual control. The on screen display can be enabled/disabled using dome

switch SW3, ON = Display off, OFF = Display on.

LG DOME (PELCO D) from BBV telemetry only.

SW5

Connect the twisted pair as follows:
Dome TRX D+ (RED) to Converter TRA
Dome TRX D- (GREEN) to Converter TRB

Dome SW401 – 1 OFF, 2 ON, 3 ON, 4 OFF (Selects Pelco D)
Dome SW404 – ALL OFF (9600 baud)
Dome SW402 – Address – set to match the matrix camera input

The following functionality is provided:
Variable speed Pan/Tilt
Zoom/Focus/Iris
64 preset positions
Menu access and navigation
Pattern record and playback
Preset patrol 1

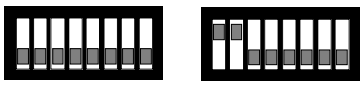
Additional Dome features

Dome Function	**TX1000 Keystroke**	**TX1500 Keystroke**
DISPLAY DOME MENU	hold **#** and tap **WASH** and navigate using the ZOOM and FOCUS keys	**1 #** and navigate using the ZOOM and FOCUS keys
180 DEGREE PAN FLIP	hold **#** and tap **WIPE**	**2 #**
PATTERN RECORD START	hold **#** and tap **AUTOPAN** then use joystick to move dome around required scenes.	**3 #** then use joystick to move dome around the required scenes.
PATTERN RECORD STOP	hold **#** and tap **LIGHTS**	**4 #**
PATTERN PLAYBACK	**AUTOPAN**	**AUTOPAN**
PATROL 1 PLAYBACK	hold **PATROL** and tap **1**	**1 PATROL**

Note:
When navigating the dome menu ZOOM IN moves the cursor UP and ZOOM OUT moved the cursor DOWN. The FOCUS keys are used to ENTER and change values.

For more information please refer to the dome handbook.

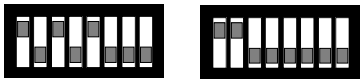
SW4 SW5



MARK MERCER from BBV

Function	**TX1500 Procedure**	**Pelco Procedure**
180 Pan U turn	**1 # or WASH**	SAVE PRESET 95
Start current dome's patrol	**1 PATROL**	GOTO PRESET 97
Start ALL DOMES patrol	**2 PATROL**	GOTO PRESET 98

SW4 SW5



MARK MERCER from VICON

When used with VICON protocol the Mark Mercer protocols supports 79 preset positions. Preset 80-89 will cause the dome preset patrol 1 to start. The patrol cannot be changed once preset positions have been saved.

The VICON protocol baud rate can be set from 2400, 4800, 9600 and 19200 using SW4/4 and SW4/5 as the previous diagram.

Meyertech ZVR-510 receiver with VICTA protocol from BBV.

SW5

Connect receiver 422 RX+ to Converter TRA and 422 RX- to Converter TRB.
Set the receiver address to match the number of the camera input of the matrix.

The following functionality is provided.
Variable speed Pan/Tilt – 8 speeds
Zoom/Focus
WASH, WIPE, LIGHTS auxiliary outputs
32 preset positions.
Menu access and navigation

The Meyertech protocol supports 8 speeds for pan and tilt. If the head is to pan and tilt simultaneously then the same speed is used for both axis. For example if the head is moving left at say speed 4 and then the joystick is moved up the head will now move left at the new tilt speed. This is not a problem with the converter but a limitation of the Meyertech protocol.

Receiver Menu Access and navigation.

Receiver Function	**TX1500 Keystroke**
RECEIVER MENU ON Once the receiver menu is displayed the joystick is used to navigate the cursor.	**1 #** (same as PROGRAM 95 PRESET)
MENU ENTER Select the flashing item	**2 #** (same as 33 PRESET)
MENU TOGGLE ITEM Used to cycle options displayed in [ ] brackets.	**3 #** (same as 94 PRESET)
EXIT MENU MODE – ALLOW PTZ This must be sent when the menu has been exited to allow normal pan/tilt control with the joystick.	**4 #**
ENTER NUMBERS 0 – 9	**1 – 9 PRESET = number 1 – 9** **10 PRESET = number 0**
AUX A1 ON/OFF	**GOTO PRESET 81 / GOTO PRESET 82**

Molynx protocol – Fixed at 9600,E,8,1 Control from BBV protocol only

SW5

Function	TX1500 Procedure
PRESET 1 – 32	**As manual**
WASH, WIPE, LIGHTS	**As manual**
TOGGLE MENU ON/OFF	**1 #**
TOGGLE JOYSTICK PTZ/MENU CONTROL	**2 #**
SET IN MENU	**IRIS OPEN or 3 #**
DEFINE PRESET PATROL	**4#**
RESET RECEIVER	**PROGRAM 99 PRESET**

Notes:
Connect receiver + to Starcard TRA and receiver - to Starcard TRB.
Set the receiver address switches to match the number of the camera input of the matrix.

Molynx receivers can only be controlled when using BBV telemetry into the Starcard ie from the BBV TX1500 or FBM series matrix.

Control of the receiver auxiliary relays is possible using the matrix Wash, Wipe and Lights keys.

Up to 32 preset positions can be programmed and recalled.

Dome mono/colour selection is possible using the **LIGHTS** button once the mono/colour switching has been set to MAN in the dome menu.

Preset Patrol Definition.
A single preset patrol can be defined which can contain up to 16 preset positions. The patrol speed and delay can be programmed as a global for each preset position. Use the following keystrokes.

4#
1 – 32 PRESET This is the delay in seconds for all preset positions
1 – 32 PRESET This is the speed to move between preset positions
1 is very slow and 32 is full speed

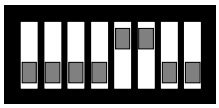
Next up to 16 preset positions, eg for patrol presets 1, 3, 6 and 17
1 PRESET, **3 PRESET**, **6 PRESET**, **17 PRESET**
MOVE JOYSTICK This ends the definition.

To start the preset patrol press **1 PATROL**

Improvement added in Version 30
SW5/8 can be used to allow the CAMERA POWER Aux to be operated from AUTOPAN allowing AUTOPAN control of AC receivers.
SW5/8 ON = enabled this feature, and SW5/8 OFF = disables

NIO D86/Intercepter (PELCO D) from BBV telemetry only

SW5



Connect the twisted pair as follows:
dome A+ to Converter TRA
dome B- to Converter TRB

Dome SW4 – Address, set to match the matrix camera input
Dome SW5 – 1 & 8 ON, 2-7 OFF, Selects PELCO & 9600 BAUD

The following functionality is provided.
Variable speed Pan/Tilt
Zoom/Focus/Iris
64 preset positions.
Menu access and navigation
Pattern record and playback
Tour 1 (preset patrol)
Autoscan (pan between limits)

Additional Dome features

Dome Function	**TX1000 Keystroke**	**TX1500 Keystroke**
DISPLAY DOME MENU	hold **#** and tap **WASH** and navigate using the joystick and **IRIS** keys	**1 #** and navigate using the Joystick and **IRIS** keys
PATTERN RECORD START	hold **#** and tap **AUTOPAN** then use joystick to move dome around required scenes.	**3 #** then use joystick to move dome around the required scenes.
PATTERN RECORD STOP	hold **#** and tap **LIGHTS**	**4 #**
PATTERN PLAYBACK	**AUTOPAN**	**AUTOPAN**
TOUR PLAYBACK	hold **PATROL** and tap **1**	**1 PATROL**
AUTOSCAN PLAYBACK	hold **PATROL** and tap **2**	**2 PATROL**

Note:
PATTERN
The dome pan/tilt/zoom will move through a defined movement.
Define the pattern first by **3#**, then move the dome to view the required areas. Once finished **4#** to end the definition. Press **AUTOPAN** to playback the pattern.

TOUR
This is a sequence of preset positions that the dome moves through. The tour is defined from within the dome menu.

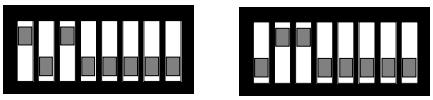
AUTOSCAN
The dome will pan continually between two positions that are defined from within the dome menu.

For more information please refer to the dome handbook.

PANASONIC WV-CS850/860

Control from BBV protocol only

9600,N,8,1 or 19200,N,8,1



Function	TX1000 Procedure	TX1500 Procedure
Show/Hide dome Menu	**# WASH**	**1 #**
ENTER (whilst in menu)	**# WIPE**	**2 #**
ESCAPE (whilst in menu)	**# AUTOPAN**	**3 #**
SPECIAL2 (whilst in menu)	**# LIGHTS**	**4 #**
Send PATROL RUN	**PATROL 1**	**1 PATROL**
Send PATROL RUN to ALL DOMES	**PATROL 2**	**2 PATROL**
Send AUTOPAN	**AUTOPAN**	**AUTOPAN**
BW MODE ON	**N/A**	**89 PRESET**
BW MODE OFF	**N/A**	**88 PRESET**
BW MODE AUTO	**N/A**	**87 PRESET**

Switch and dome settings:
Ensure that each dome is configured BEFORE installation.
Output baud rate must be set to 19200,N,8,1 with SW5.
The dome must be set to Panasonic CONVENTIONAL protocol and the address set accordingly.
The 4 way dome switch must be set to 4 wire telemetry with switches 2,3,4 OFF. The RS485 cable requires termination at the end of the run by setting switch 1 ON.

The Panasonic CS850/860 protocol conversion is only available when controlled using BBV RS485 telemetry. If another input protocol is selected using SW4 then the unit will not function and all the LEDs will flash until BBV protocol is selected again.

Due to protocol issues, the response of an individual dome may become sluggish if several domes are controlled simultaneously.

Connect TRA to RA(green) and TRB to RB(yellow).

Note:
When working with the TX1000 SW5/8 must be turned ON.

PELCO P and PELCO D

Function	TX1500 Procedure	Pelco Procedure
Display Dome Menu	**1 #**	SAVE PRESET 95
180 degree pan flip (U turn)	**2 #**	GOTO PRESET 33
Display Technicians Menu	**3 #**	GOTO PRESET 94 **SW5/8 MUST BE OFF**
PATTERN DEFINE (START)	**3 #**	**SW5/8 MUST BE ON**
PATTERN DEFINE (STOP)	**4 #**	**SW5/8 MUST BE ON**
PATTERN PLAYBACK	**AUTOPAN**	**SW5/8 MUST BE ON**
Start Random Scanning	**PATROL 1**	GOTO PRESET 97
Start Frame Scanning	**PATROL 2**	GOTO PRESET 98

This allows control of Pelco P and Pelco D units. Please ensure that the baud rate and parity are set correctly. Generally Pelco P uses 9600, N, 8, 1 and Pelco D uses 2400, N, 8, 1.

The Esprit wiper can be controlled using the TX1500 wiper function when SW5/7 is ON. With SW5/7 OFF the LIGHTS button is used. This is due to functions for each auxiliary number.

Function	Aux number SW5/7 ON	SW5/7 OFF
WASH	3	3
WIPE	1	2
LIGHTS	2	1

Additional of zone definition to allow zone blanking of Esprit PTZ heads.
Three steps are required to define and enable privacy zones.

1. Move the camera to the left edge of required privacy zone then program preset 71 – 78. 71 for zone 1, 72 for zone 2 etc up to 78 for zone 8.
2. Now move the camera to the right edge of required privacy zone the program preset 81 – 88. 81 for zone 1, 82 for 2 etc up to 88 for zone 8
3. Next display the head menu and enable zone blanking for the required zone.

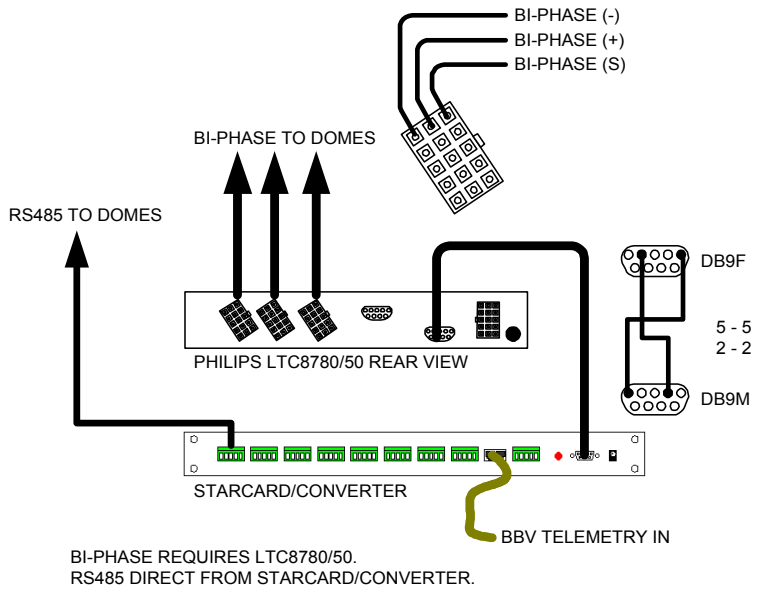
Philips RS232/485 from BBV telemetry only (bi-phase via LTC8780/50)

SW5

Depending on the exact model type, Philips domes can be controlled using RS232 or RS485 and bi-phase telemetry.

Bi-phase telemetry is a proprietary twisted pair protocol that allows several domes to be daisy chained. A Philips LTC8780/50 converter is required in addition to the Starcard Converter when driving bi-phase telemetry.

Later domes with RS485 inputs can be driven directly from the Starcard Converter outputs without the need for a Philips LTC8780/50 converter as shown below.



Set the dome address using the rotary switches to match the number of the camera input of the TX1500. Ensure that any dome at the end of a daisy chained RS485 run has the RS485 terminated and the intermediate domes have the RS485 de-terminated.

If the dome only supports FastAddress™, a Philips controller must be used to set the dome address before installation. The starcard/converter will not set the FastAddress ™.

Dome Function	**TX1500 Procedure**
SET/SAVE PRESET (1-64)	**PROGRAM NUMBER PRESET**
SHOW/GOTO PRESET (1-64)	**NUMBER PRESET**
DISPLAY DOME MENU (AUX 46 ON)	**1 #**
PROGRAM ZONE TITLE (AUX 63 ON)	**2 #**
AUTOPLAY RECORD (AUX 100 ON/OFF)	**3 # to start recording followed by either 3 # or AUTOPAN to stop recording.**
DISPLAY SOFTWARE VERSION (AUX 66 ON)	**4 # TWO times**
RESET DOME (SET 899)	**4 # FOUR times** ***(This will erase all preset positions and load default dome settings – use with care!)***

START DOME PRESET TOUR (AUX 8 ON)	**1 PATROL**
START AUTOPLAY PLAYBACK (AUX 50 ON)	**AUTOPAN**

DISPLAY PRESET TOUR MENU (SET 900)	**PROGRAM 99 PRESET**
DISPLAY PRESET TOUR PERIOD (AUX 15 ON)	**PROGRAM 98 PRESET**
DISPLAY PRESET MENU (SET 100)	**PROGRAM 97 PRESET**

Samsung SCC641/643 dome and SCC421 camera from BBV

SCC641/643 dome

SW5

Connect dome RXD/+ to Converter TRA and dome RXD/- to Converter TRB.
Set the dome address using the SW500 switch to match the number of the camera input of the TX1500. SW501 all off apart from 3 and 5 to select 9600 BAUD, SAMSUNG protocol and FULL duplex.

Ensure that any dome at the end of a daisy chained RS485 run are have switches SW501/1 and SW501/2 ON to terminate the RS485 terminated and the intermediate domes have the SW501/1 and SW501/2 OFF.

The following functionality is provided.
Manual pan/tilt control with 16 speed steps.
Zoom with Manual Focus override.
Operating the Zoom will re-enable auto focus after manual adjustment
64 preset positions.
AUTOPAN can be started with the AUTOPAN key.
PRESET SCAN can be started using 1 PATROL.
PATTERN 2 can be started using 2 PATROL.

The patterns are defined from the dome menu which is accessed using 1 # as below.

Advanced Function	**TX1500 Procedure**
Dome Menu ON	**1 #**
Dome Menu OFF	**2 #**
Dome Menu ENTER	**3 #**
Start PRESET SCAN	**1 PATROL**
Start PATTERN 2	**2 PATROL**
Start AUTOPAN	**AUTOPAN**

SCC421P Static camera
Connect the camera RS485 Data+ to Converter TRA and Data- to Converter TRB.
Ensure that BAUD RATE is set to 9600 and RS485 ADDR is set to match the video input on the Tx1500 matrix. The buttons on the rear of the camera allow menu access.
Ensure that any camera at the end of a daisy chained RS485 run has the TERMINATION switch ON and the intermediate camera have the TERMINATION switch OFF.

The following functionality is provided.
Zoom with Manual Focus override.
To allow manual focus set AUTO FOCUS in the menu to either ONEAF for MF.
ONEAF will cause an AUTOFOCUS after a zoom and MF is permanently in manual focus mode.
Iris Open/Close.

Sensormatic RS422 from BBV telemetry only

SW5

Connect dome RS422 IN + to Converter TRA and RS422 IN- to Converter TRB.
Set the dome address to match the number of the camera input of the matrix.

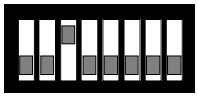
The following functionality is provided.
Variable speed Pan/Tilt
Zoom/Focus/Iris
64 preset positions.
Menu access and navigation
Pattern #1 record and playback

Additional Dome features

Dome Function	**TX1500 Keystroke**
PATTERN #1 RECORD	**1 # - start recording** **Move dome pan/tilt/zoom** **1# - end recording** **(Note the dome does not support variable speed pan/tilt when recording a pattern)**
PATTERN #1 PLAYBACK	**AUTOPAN**
DISPLAY DOME MENU	**4 #** **Navigate with joystick** **Focus is ENTER and ZOOM toggles options.**

VCL TP – Fixed at 9600,N,8,1 (adjust SW4 to suit input protocol)

SW5



Connect dome D+ to Starcard/Converter TRA and dome D- to Starcard Converter TRB.

Set the dome address using the DIL switch to match the number of the camera input of the TX1500. Ensure that any dome at the end of a daisy chained RS485 run are have the RS485 terminated and the intermediate domes have the RS485 de-terminated.

The following functionality is provided.
Manual pan/tilt control with 16 speed steps from 1 to 127, (slowest to fastest)
Zoom with Manual Iris and Focus override.
Operating the Zoom will re-enable auto focus and iris after manual adjustment
32 preset positions.
2 sequential preset tours of preset positions 1 - 16, tour 1 maximum speed and tour 2 speed 32. The dwell time is fixed at 10 seconds per preset position. Preset positions can be removed from the tours.
All 28 privacy zones can be programmed and disabled if required.

VCL TP – When using Pelco input protocol

Advanced Function	**Pelco procedure**
180 degree pan flip (U turn)	SAVE PRESET 95
Program a privacy zone	GOTO PRESET 33 followed by PROGRAM 1-28 PRESET
Clear a privacy zone	GOTO PRESET 94 followed by PROGRAM 1-28 PRESET
Dome remote reset (power cycle)	Head reset
Add preset position to the tours	Saving a preset position adds the preset into the tour. (1 – 16 only)
Remove a preset from the tours	PROGRAM 50 PRESET followed by GOTO PRESET 1-16
Start preset tour 1 – high speed	GOTO PRESET 97 (max speed with 10 second dwell)
Start preset tour 2 – slow speed	GOTO PRESET 98 (speed 32 with 10 second dwell)
Start Learned tour 5	GOTO PRESET 99 (must be defined with SAVE PRESET 56 as below)
Set Home functions (fixed at 5 minutes)	PROGRAM 54 PRESET followed by GOTO PRESET 1 = Enable to preset 1 GOTO PRESET 2 = Enable to tour 1 (fast) GOTO PRESET 3 = Enable to tour 2 (slow) GOTO PRESET 4 = Enable to learned tour (PRESET 99) GOTO PRESET 5 = Disable home
Reset dome to factory. USE CAUTION!! This command will clear all dome configuration including preset positions.	SAVE PRESET 55 followed by SAVE PRESET 55
Define learned tour 5 – START	SAVE PRESET 56
Define learned tour 5 – STOP	SAVE PRESET 57
Enable AUTO180 pan flip	SAVE PRESET 58

SW4 SW5

VCL TP – from 360 Vision Protocol

From 360 Vision matrix, connect Data+ to Master RA and Data- to Master RB. Connect dome D+ to STAR TRA and dome D- to STAR TRB.
Set the dome address using the DIL switch to match the number of the camera input of the matrix. Ensure that any dome at the end of a daisy chained RS485 run are have the RS485 terminated and the intermediate domes have the RS485 un-terminated.

The following functionality is provided.
Pan/Tilt/Zoom/Focus/Iris
Auto/Manual Focus and Iris switching
127 preset positions
Tour 1-4 definition and playback, preset 1-127 and dwell of 2-254 seconds (2 second increments)
Mimic Tour 1-4 definition and playback (VCL tour 5-8)
Privacy zones 1-28 can be programmed and toggled ON/OFF (VCL preset 100-127)
180 degree flip enable/disable on tilt down
Home functions, preset 1-127 or tour 1-4 with 1-127 minute delay
A1 and A2 toggle dome mono/colour but dome will auto switch back to colour if the scene if bright enough.
LOCK A3 – toggles Wiper ON/OFF (in CONV1_V24 and later software)

Please read the 360 Vision keyboard manual for details of keystrokes etc.

Vicon Surveyor from BBV

SW5

Connect dome COMM_IN+ to Starcard/Converter TRA and dome COMM_IN- to Starcard/Converter TRB.

Set the dome address using the DIL switch to match the number of the camera input of the TX1500. Ensure that any dome at the end of a daisy chained RS485 run are have the RS485 terminated and the intermediate domes have the RS485 de-terminated.
Select VPS telemetry using dome DIP DIL.

The following functionality is provided.
Manual pan/tilt control with 16 speed steps.
Zoom with Manual Focus override.
Operating the Zoom will re-enable auto focus after manual adjustment
64 preset positions.
3 tours can be started, tour 81 and 82 using 1 PATROL and 2 PATROL and tour 80 with AUTOPAN.
The tours are defined from the dome menu.

Advanced Function	**TX1500 Procedure**
Display dome menu	**1 #**
MENU AP – ENTER	**IRIS OPEN**
MENU AI – ESCAPE	**IRIS CLOSE**
AUX 1	**WASH**
AUX 2	**WIPE**
AUX 3	**LIGHTS**
Start TOUR 81	**1 PATROL**
Start TOUR 82	**2 PATROL**
Start TOUR 80	**AUTOPAN**

It is very important that once you have exited the dome menu you send a 1 PRESET to inform the Starcard that you are out of the dome menu.

The output baud rate can be selected between 4800 and 9600 baud. SW5/8 ON = 4800 baud, SW5/8 OFF = 9600 baud. Generally 9600 baud will be used on late systems and 4800 baud on early systems.

Support for earlier V1305DC DC telemetry receivers.
SW5/7 ON and SW5/8 ON

These receivers use 4800 baud so SW5/8 must be ON.

SW5/7 must also be ON to enable control of this receiver type. When in this mode, the WASH function drives Aux 4 which is the only momentary output.

VIDECON VCP451 CAMERA from BBV telemetry only

Connect the twisted pair as follows:
Camera RS485+ to Converter TRA
Camera RS485- to Converter TRB

SW5

The following functionality is provided:
ZOOM, FOCUS
Menu Access

Advanced Dome features

Dome Function	**TX1000 Keystroke**	**TX1500 Keystroke**
DISPLAY MENU Use the joystick to navigate the menu or zoom for up/down and focus for left/right	hold **#** and tap **WASH**	**1 #**

Note:
Use the MENU switch on the camera to set the following before connecting to the converter.
CAMERA ID – This must match the camera input of the matrix
PROTOCOL – P/D to allow control (PELCO D, 2400,N,8,1)

The camera uses the zoom and focus functions whilst navigating the menu to make it easier to use the joystick. Pan generates zoom and tilt generates focus even when not displaying the dome menu. This is NOT a fault!

For more information please refer to the camera handbook.

VIDECON VHSD 860 DOME from BBV telemetry only

SW5

Connect the twisted pair as follows:
Dome D+ to Converter TRA
Dome D- to Converter TRB

The following functionality is provided:
Variable speed Pan/Tilt
Zoom/Focus/Iris
64 preset positions
Menu Access
Privacy Menu Access
Pattern Tour 1 define and playback, Auto Patrol playback, Frame Scan playback

Advanced Dome features

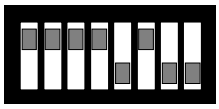
Dome Function	**TX1000 Keystroke**	**TX1500 Keystroke**
DISPLAY MENU	hold **#** and tap **WASH**	**1 #**
DISPLAY PRIVACY MENU	hold **#** and tap **WASH**	**2 #**
DEFINE PATTERN 1 START	hold **#** and tap **AUTOPAN**	**3 #**
DEFINE PATTERN 1 STOP	hold **#** and tap **LIGHTS**	**4 #**
PATTERN 1 PLAYBACK	**AUTOPAN**	**AUTOPAN**
AUTO PATROL PLAYBACK	hold **PATROL** and tap **1**	**1 PATROL**
FRAME SCAN PLAYBACK	hold **PATROL** and tap **2**	**2 PATROL**
IR FILTER ON/OFF	Not possible	**ON (MONO) 89 PRESET** **OFF (COLOUR) 88 PRESET**

Note:
Please ensure the three dome switches are set as follows:
Dome back plate 4 way switch – ALL OFF to select PELCO P
Dome 2 way switch – BOTH ON to select 9600 BAUD
Dome 8 way switch – set the address to match the camera input of the matrix

For more information please refer to the dome handbook.

VIDEOTEC ULISSE (PELCO D : 9600,N,8,) from BBV telemetry only

SW5



Connect the twisted pair as follows:
Ulisse 485/A to Converter TRA
Ulisse 485/B to Converter TRB

Ulisse Switch settings
BAUD RATE – 4 ON, 3 OFF, 2 ON, 1 OFF
PROTOCOL – 1 ON, 4 ON, ALL OTHERS OFF
ADDRESS – 9 ON, 1-8 SETS THE ADDRESS AS ULISSE MANUAL

The following functionality is provided:
Variable speed Pan/Tilt
Zoom/Focus/Iris
64 preset positions.
Start Patrol
Start AUTOPAN
Menu access and navigation

Additional Dome features

Dome Function	**TX1000 Keystroke**	**TX1500 Keystroke**
DISPLAY MENU	hold **#** and tap **WASH** and navigate using the ZOOM **IN** = ENTER, **OUT** = BACK	**1 #** and navigate using the joystick and ZOOM **IN** = ENTER, **OUT** = BACK
AUTO WASH/WIPE	**WASH** SW5/8 = OFF (factory default)	**WASH** SW5/8 = OFF (factory default)
RELAY O1/C1	**WASH** SW5/8 = ON	**WASH** SW5/8 = ON
WIPE	**WIPE**	**WIPE**
LIGHTS O2/C2	**LIGHTS**	**LIGHTS**
START PATROL	HOLD **1** TAP **PATROL**	**1 PATROL**
AUTOPAN	**AUTOPAN**	**AUTOPAN**

Note:
WASH function can either control Ulisse relay output O1/C1 or to start the head auto wash/wipe feature.

SW5/8 is used to switch between these modes. The factory setting is with SW5/8 OFF = WASH starts the auto wash/wipe function.
Head moves to Preset 1, the WASH is activated for a time set in the head menu and then the Wiper operates for another time configured in the head menu before returning the head to the original position.

If this feature is not required the O1/C1 relay can be controlled instead by switching SW5/8 ON.

For more information please refer to the Ulisse handbook.

Vista PowerDome from BBV

SW5

Connect dome DATA IN A/+ to Starcard Converter TRA and dome DATA IN B/- to Starcard Converter TRB.

Set the dome address using the DIL switch to match the number of the camera input of the TX1500. Ensure that any dome at the end of a daisy chained RS485 run are have the RS485 terminated and the intermediate domes have the RS485 de-terminated.

The following functionality is provided.
Manual pan/tilt control with 16 speed steps.
Zoom with Manual Focus override.
Operating the Zoom will re-enable auto focus after manual adjustment
64 preset positions.
3 tours can be started, TOUR 1 and 2 using 1 PATROL and 2 PATROL and LEARN TOUR 1 with AUTOPAN.
The tours are defined from the dome menu which is accessed using 1 # as below.

Advanced Function	**TX1500 Procedure**
Display dome menu	**1 #**
Menu – ENTER	**2 #**
Menu – ESCAPE	**3 #**
Start TOUR 1	**1 PATROL**
Start TOUR 2	**2 PATROL**
Learn 1 playback	**AUTOPAN**

Extend your BBV Warranty from 12 months to 3 years

As of the 1st September 2008 BBV have offered our customers the opportunity to extend the standard 12 month warranty to 3 years.

You must register for the extended warranty within 12 months of the date of manufacture.

How to register for the 3 year warranty

Registering for the new, longer 3 year warranty term is quick and easy.

Either:

Complete the warranty application card that comes in the box with your BBV product, and return it FREEPOST to BBV:

BBV 3 Year Warranty

If this card is returned with the serial number of the product and the Installation company details BBV will extend the warranty period from 12 Months to 36 Months.

☐ Number of Units, ☐ Start Serial No. ☐ Final Serial No.

Contact Name._____

Company Name._____

Phone Number._____

Site Name._____

Address 1._____

Address 2._____

Address 3._____

Post Code._____

e-mail address._____

Do you read. PSI MAGAZINE SC

Please could you send me information especially on:

- ☐ Rx100s
- ☐ Rx45x & Rx55x
- ☐ FBM Video Matrices
- ☐ Tx1500 Video Matrices
- ☐ Starcard & Starcard Converters
- ☐ BBV Quad
- ☐ Pick A Point

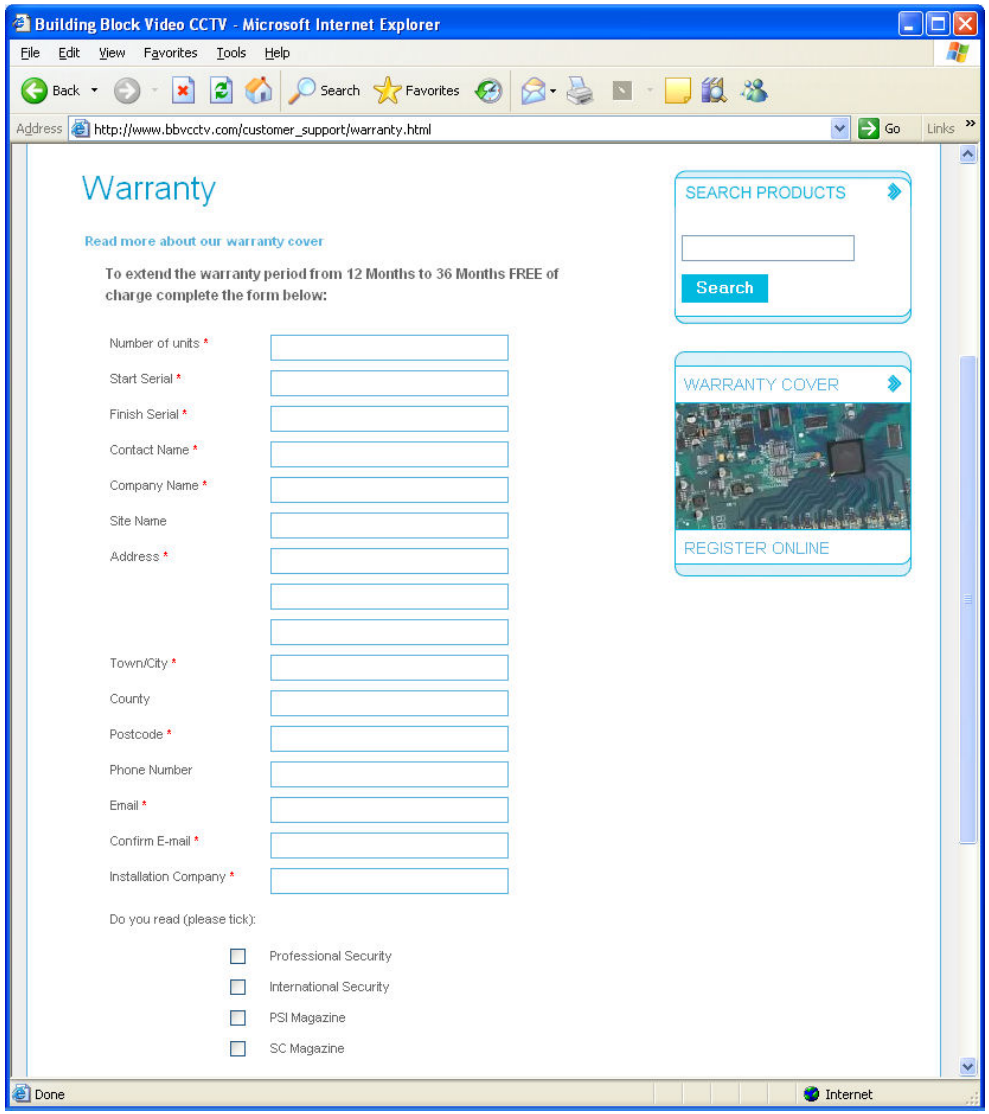
☐ I do not require any other further product information,

Please refer to WWW.BBVCCTV.COM for terms, conditions & exclusions

VAT Reg. No. 621758439 Registered in England No. 2852921 Registered office: 17 Apex Park Diplocks Way Hailsham East Sussex UK BN27 3JU

Or alternatively:

Register online at: www.bbvcctv.com
Simply enter your details on the 'Warranty Cover' page.



Building Block Video Ltd

Tel: + 44 (0) 1323 842727
Fax: + 44 (0) 1323 842728
Support: + 44 (0) 1323 444600
www.bbvcctv.com