



CTI PLUS

RS422/485 to Multi Coax Telemetry Interface Single Channel



Installation Guide



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PRE-INSTALLATION CHECKS AND SAFETY PROCEDURES

Unpacking - Inspect the packaging for signs of damage. If damage has occurred, advise the carrier and/or the suppliers immediately. Unpack the unit carefully and check that all the items are present and correct (see checklist on box). If any item is missing contact the supplier.

Retain Packaging - The shipping carton is the safest container in which to transport the unit. Retain undamaged packaging for possible future use.

IMPORTANT SAFETY PRECAUTIONS

Read & Retain Instructions - All relevant safety, installation and operating instructions should be read & retained before attempting to install, connect or operate the unit.

Water and Moisture - Do not expose the internal electronics of this unit to water or dampness.

Power Sources - This unit should be operated only from the supplied power supply.

Servicing - Servicing of the unit should only be undertaken by qualified service personnel.

Damage Requiring Service - Servicing by qualified personnel should be carried out under the following conditions:

- (a) When the power-supply cord or plug is damaged;
- (b) If liquid has been spilled, or objects have fallen into, the unit;
- (c) If the internal electronics of the unit have been exposed to rain or water;
- (d) If the unit does not operate normally by following the operating instructions.
- (e) If the unit has been dropped or the enclosure is damaged;

Replacement Parts - If replacement parts are required, ensure that only replacement parts recommended by the product manufacturer are used.

Safety Check - Upon completion of any service or repairs to the unit, safety checks should be performed to ensure that the unit is in proper operating condition.

Pre-installation Checks - It is recommended that the unit be bench-tested prior to installation on the site.

Adhere to Safety Standards - All normal safety precautions as laid down by British Standards and the Health and Safety at Work Act should be observed.

WARNING

TO PREVENT DANGER OF FIRE OR SHOCK, DO NOT EXPOSE THE INTERNAL COMPONENTS OF THIS EQUIPMENT TO RAIN OR MOISTURE.

INTRODUCTION

GENERAL

The CTI PLUS is a highly versatile RS422/485 serial telemetry to Up-the-Coax protocol converter. It is simple to setup via an OLED screen menu.

Up-the-Coax telemetry allows upgrading of static cameras to PTZ without the need for additional cabling.

The RS422/485 input is selected via the OLED display.

The CTI PLUS will accept the following input protocols:

<i>BBV RS422</i>	<i>Pelco P</i>	<i>Dennard</i>	<i>Molynx</i>
<i>Ultrak</i>	<i>Pelco D</i>	<i>360 Vision</i>	<i>MeyerTech</i>
<i>Mark Mercer</i>	<i>Vicon</i>	<i>VCL</i>	<i>Philips</i>
<i>Sensormatic</i>	<i>Vista</i>		

Supported output protocols:

BBV Coax
Pelco Coaxitron
Baxall Alternate
Vista Coax
VCL Coax

1 x BNC output provides Coax Telemetry, connecting to a single camera/receiver.
1 x BNC output provides Video Loop Through.

Each unit is supplied with a 12Vdc Power Supply, Manual & Adhesive Fixings.

**BBV ALWAYS RECOMMENDS THAT ALL SYSTEMS
ARE BENCH TESTED BEFORE INSTALLATION**

PRE-INSTALLATION CHECKS AND SAFETY PROCEDURES

Unpacking - Inspect the packaging for signs of damage. If damage has occurred, advise the carrier and/or the suppliers immediately. Unpack the receiver carefully and check that all the items are present and correct (see checklist on box). If any item is missing contact the supplier.

Part number	Description	12Vdc PSU	1 x 5 Way Green IMO (5.08 mm pitch)	Manual	2 x Sticky Pads
CTI PLUS	RS422/485 to Multi Coax Telemetry Interface single channel	X	X	X	X

Retain Packaging - The shipping carton is the safest container in which to transport the unit. Retain undamaged packaging for possible future use.

IMPORTANT SAFETY PRECAUTIONS

Read & Retain Instructions - All relevant safety, installation and operating instructions should be read & retained before attempting to install, connect or operate the unit.

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Power Sources - This unit should be operated only from the supplied power supply.

Servicing - Servicing of the unit should only be undertaken by qualified service personnel.

Damage Requiring Service - Servicing by qualified personnel should be carried out under the following conditions:

- (a) When the power-supply cord or plug is damaged;
- (b) If liquid has been spilled, or objects have fallen into, the unit;
- (c) If the internal electronics of the unit have been exposed to rain or water;
- (d) If the unit does not operate normally by following the operating instructions.
- (e) If the unit has been dropped or the enclosure is damaged;

Replacement Parts - If replacement parts are required, ensure that only replacement parts recommended by the product manufacturer are used.

Safety Check - Upon completion of any service or repairs to the unit, safety checks should be performed to ensure that the unit is in proper operating condition.

Coax Grounding - If an outside cable system is connected to the unit, be sure the cable system is grounded.

Pre-installation Checks - It is recommended that the unit be bench-tested prior to installation on the site.

Adhere to Safety Standards - All normal safety precautions as laid down by British Standards and the Health and Safety at Work Act should be observed.

WARNING

TO PREVENT DANGER OF FIRE OR SHOCK, DO NOT EXPOSE THE INTERNAL COMPONENTS OF THIS EQUIPMENT TO RAIN OR MOISTURE.

Technical Specification

Power Requirements 12Vdc 75mA

Inputs 2 Wire RS485 or 2 Wire RS422 Simplex via 5 pin Green Screw Terminal Connector
Maximum Cable Distance CAT 5 = 1200mtrs

Outputs 1 x **Coax Telemetry** via BNC Connectors
Minimum Cable distance = 5mtrs
Maximum Cable Distance RG59 = 250mtrs
CT125 = 500mtrs

Facilities Supports 255 addresses (protocol dependant)
OLED Display for easy menu configuration
OLED Displays: Sync level, Data Received, Telemetry out & Address
TEST BUTTONS send commands to the camera or receiver.

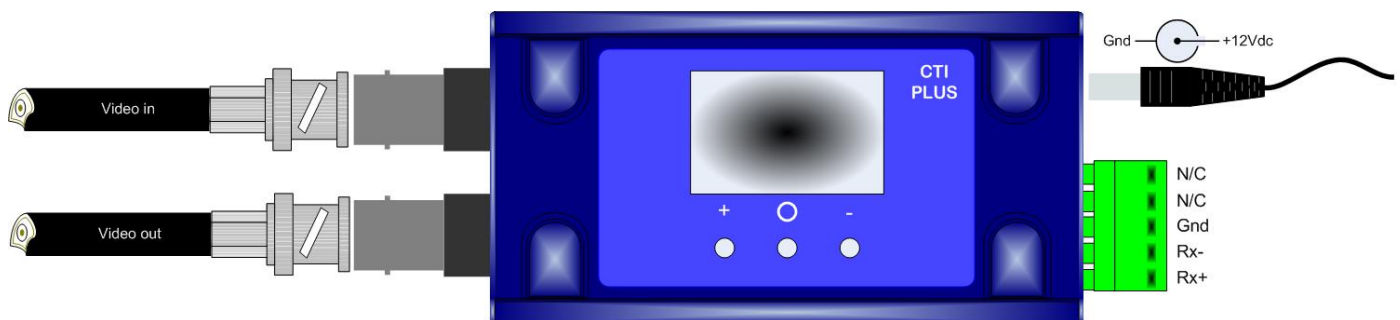
Boxed Dimensions. Length 92mm
Width 42mm
Height 32mm

Weight 64 grams

CTI PLUS Manual Version History

Version 1 May 2015 1. CTI PLUS Released

CTI PLUS Connection Diagram



Menu Configuration

Press the Central button marked **O** to enter the menu.
Use the **+/-** buttons to navigate up and down the menu items.
Press the **O** button to cycle through possible settings.

Baud rates and address range are limited depending on protocols.
Eg. BBV 422 is limited to 9600 baud and only supports 128 addresses

When setting the unit address, the **O** button can be held to increment faster.

If several CTI PLUS are daisy chained, all but the last one on the data line will be unterminated. Default is Termination **ON** for a single CTI PLUS.

When configuration is complete use **+/-** to navigate to **EXIT** and **O** to select.

Testing

The OLED will display sync level when idle. CCTV standard for SYNC level is 300mV.

When not in the MENU the **+/-** buttons can be used to send a pan left/pan right.

Holding down the - key for 5 seconds will enter DEBUG mode.

In DEBUG mode telemetry received by the CTI Plus is displayed on the OLED screen.

Function Command Table

BBV support a number of commands that are referred to as # commands these are used to enter the menu of the camera or receiver. In addition All the coax protocols support 2 preset patrols & an Autopan command, all of the fore-mentioned commands can be called from preset commands these are all listed on the following pages.

BBV Coax		BBV422		Pelco P	Pelco D	VCL485	Vicon	Molynx	Phillips	Sensormatic
1#	Goto 95 Save 95 Goto 61	1 #	G95 S95 G61	G95 S95 G61	G95 S95 G61	G95 S95 G61	G95 S95 G61	G95 S95 G61	G95 S95 G61	G41
2#	Goto 62	2 #	G62	G62	G62	G62	G62	G62	G62	G42
3#	Goto 63	3 #	G63	G63	G63	G63	G63	G63	G63	G43
4#	Goto 64	4 #	G64	G64	G64	G64	G64	G64	G64	G44
PAT 1	Goto 66	1 Pat	G66	G66	G66	G66	G66	G66	G66	G46
PAT 2	Goto 67	2 Pat	G67	G67	G67	G67	G67	G67	G67	G47
AUTOPAN	Goto 68	Auto	G68	G68	G68	G68	G68	G68	G68	G48
Selftest	Goto 69	Goto 69		Goto 69	Goto 69	Goto 69	Goto 69	Goto 69	Goto 69	Goto 49
Wash On	Goto 81	Wash on	G81	G81	G81	G81	G81	G81	G81	G51
Wash Off	Goto 82	Wash off	G82	G82	G82	G82	G82	G82	G82	G52
Wipe On	Goto 83	Wipe on	G83	G83	G83	G83	G83	G83	G83	G53
Wipe Off	Goto 84	Wipe off	G84	G84	G84	G84	G84	G84	G84	G54
Lights On	Goto 85	Lights on	G85	G85	G85	G85	G85	G85	G85	G55
Lights Off	Goto 86	Lights off	G86	G86	G86	G86	G86	G86	G86	G56
Zoom In		Zoom In		Zoom In	Zoom In	Zoom In	Zoom In	Zoom In	Zoom In	Zoom In
Zoom Out		Zoom Out		Zoom Out	Zoom Out	Zoom Out	Zoom Out	Zoom Out	Zoom Out	Zoom Out
Focus Near		Focus Near		Focus Near	Focus Near	Focus Near	Focus Near	Focus Near	Focus Near	Focus Near
Focus Far		Focus Far		Focus Far	Focus Far	Focus Far	Focus Far	Focus Far	Focus Far	Focus Far
Iris Open		Iris Open		Iris Open	Iris Open	Iris Open	Iris Open	Iris Open	Iris Open	Iris Open
Iris Close		Iris Close		Iris Close	Iris Close	Iris Close	Iris Close	Iris Close	Iris Close	Iris Close
2400				2400	2400					
4800				4800	4800		4800			4800
9600		9600		9600	9600	9600	9600	9600	9600	

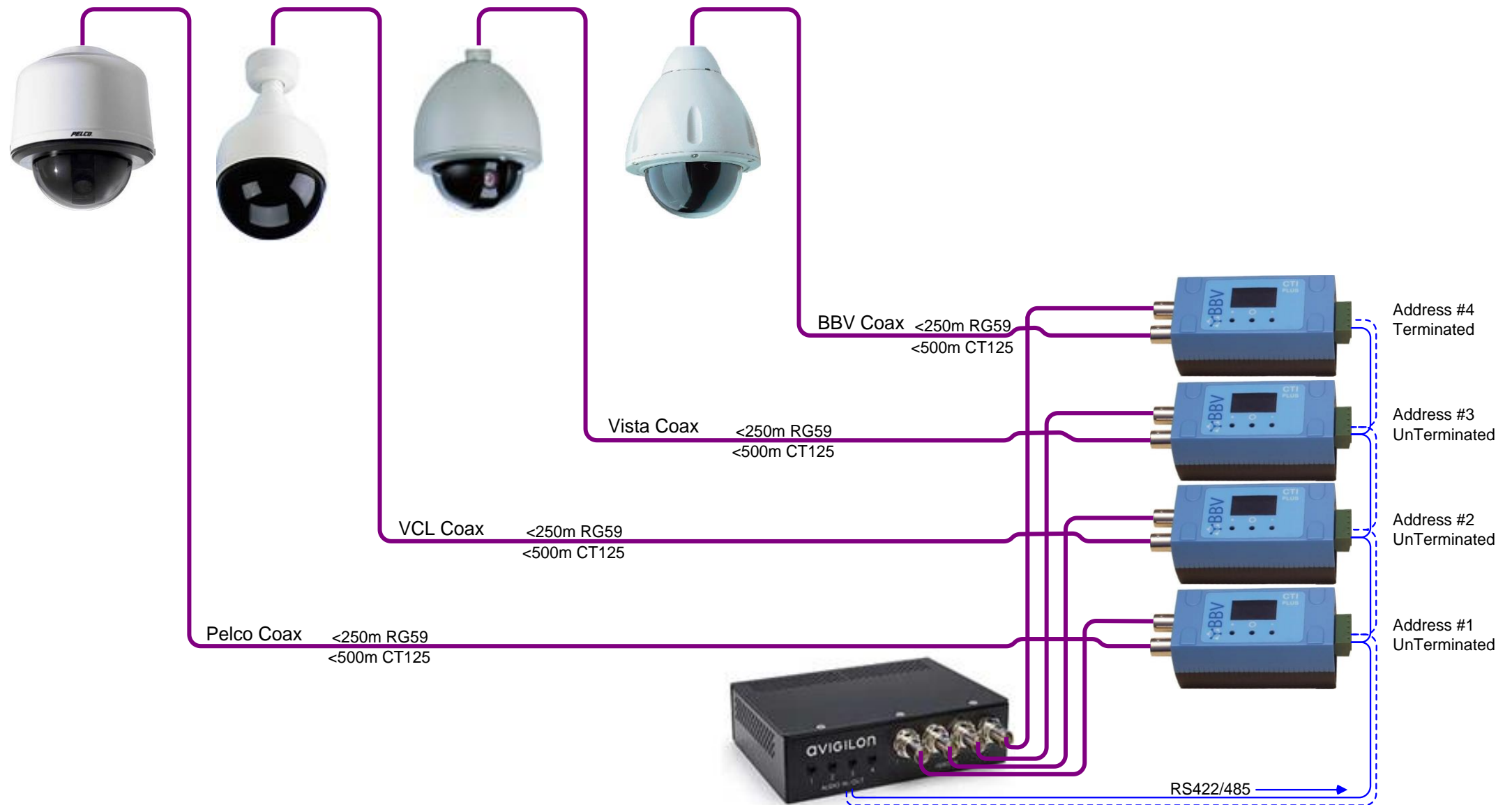
BBV Coax		Baxall	Mercer	360 Vision	Mayer	Dennard		Ultrak	Vista
1#	Goto 95	G41	G95	G95	G95	G95		G95	G41
	Save 95		S95	S95	S95	S95		S95	
	Goto 61		G61	G61	G61	G61		G61	
2#	Goto 62	G42	G62	G62	G62	G62		G62	G42
3#	Goto 63	G43	G63	G63	G63	G63		G63	G43
4#	Goto 64	G44	G64	G64	G64	G64		G64	G44
PAT 1	Goto 66	G46	G66	G66	G66	G66		G66	G46
PAT 2	Goto 67	G47	G67	G67	G67	G67		G67	G47
AUTOPAN	Goto 68	G48	G68	G68	G68	G68		G68	G48
Selftest	Goto 69	Goto 49	Goto 69	Goto 69	Goto 69	Goto 69		Goto 69	Goto 49
Wash On	Goto 81	G51	G81	G81	G81	G81		G81	G51
Wash Off	Goto 82	G52	G82	G82	G82	G82		G82	G52
Wipe On	Goto 83	G53	G83	G83	G83	G83		G83	G53
Wipe Off	Goto 84	G54	G84	G84	G84	G84		G84	G54
Lights On	Goto 85	G55	G85	G85	G85	G85		G85	G55
Lights Off	Goto 86	G56	G86	G86	G86	G86		G86	G56
Zoom In		Zoom In	Zoom In	Zoom In	Zoom In	Zoom In		Zoom In	Zoom In
Zoom Out		Zoom Out	Zoom Out	Zoom Out	Zoom Out	Zoom Out		Zoom Out	Zoom Out
Focus Near		Focus Near	Focus Near	Focus Near	Focus Near	Focus Near		Focus Near	Focus Near
Focus Far		Focus Far	Focus Far	Focus Far	Focus Far	Focus Far		Focus Far	Focus Far
Iris Open		Iris Open	Iris Open	Iris Open	Iris Open	Iris Open	G87	Iris Open	Iris Open
Iris Close		Iris Close	Iris Close	Iris Close	Iris Close	Iris Close	G88	Iris Close	Iris Close
2400									
4800					4800				
9600		9600	9600	9600	9600	9600		9600	9600

Pelco Coax		BBV422		Pelco P	Pelco D	VCL485	Vicon	Molynx	Phillips	Sensormatic
Menu	Goto 95	1 #	G95	G95	G95	G95	G95	G95	G95	G41
	Save 95		S95	S95	S95	S95	S95	S95	S95	
	Goto 61		G61	G61	G61	G61	G61	G61	G61	
PAT Rec St	Goto 62	2 #	G62	G62	G62	G62	G62	G62	G62	G42
PAT Rec Ed	Goto 63	3 #	G63	G63	G63	G63	G63	G63	G63	G43
Dome Reset	Goto 64	4 #	G64	G64	G64	G64	G64	G64	G64	G44
PAT 1	Goto 66	1 Pat	G66	G66	G66	G66	G66	G66	G66	G46
PAT 2	Goto 67	2 Pat	G67	G67	G67	G67	G67	G67	G67	G47
AUTOPAN	Goto 68	Auto	G68	G68	G68	G68	G68	G68	G68	G48
Wash On	Goto 81	Wash on	G81	G81	G81	G81	G81	G81	G81	G51
Wash Off	Goto 82	Wash off	G82	G82	G82	G82	G82	G82	G82	G52
Wipe On	Goto 83	Wipe on	G83	G83	G83	G83	G83	G83	G83	G53
Wipe Off	Goto 84	Wipe off	G84	G84	G84	G84	G84	G84	G84	G54
Lights On	Goto 85	Lights on	G85	G85	G85	G85	G85	G85	G85	G55
Lights Off	Goto 86	Lights off	G86	G86	G86	G86	G86	G86	G86	G56
Zoom In		Zoom In		Zoom In	Zoom In	Zoom In	Zoom In	Zoom In	Zoom In	Zoom In
Zoom Out		Zoom Out		Zoom Out	Zoom Out	Zoom Out	Zoom Out	Zoom Out	Zoom Out	Zoom Out
Focus Near		Focus Near		Focus Near	Focus Near	Focus Near	Focus Near	Focus Near	Focus Near	Focus Near
Focus Far		Focus Far		Focus Far	Focus Far	Focus Far	Focus Far	Focus Far	Focus Far	Focus Far
Iris Open		Iris Open		Iris Open	Iris Open	Iris Open	Iris Open	Iris Open	Iris Open	Iris Open
Iris Close		Iris Close		Iris Close	Iris Close	Iris Close	Iris Close	Iris Close	Iris Close	Iris Close
2400				2400	2400					
4800				4800	4800		4800			4800
9600		9600		9600	9600	9600	9600	9600	9600	

Pelco Coax		Baxall	Mercer	360 Vision	Mayer	Dennard		Ultrak	Vista
Menu	Goto 95	G41	G95	G95	G95	G95		G95	G41
	Save 95		S95	S95	S95	S95		S95	
	Goto 61		G61	G61	G61	G61		G61	
PAT Rec St	Goto 62	G42	G62	G62	G62	G62		G62	G42
PAT Rec Ed	Goto 63	G43	G63	G63	G63	G63		G63	G43
Dome Reset	Goto 64	G44	G64	G64	G64	G64		G64	G44
PAT 1	Goto 66	G46	G66	G66	G66	G66		G66	G46
PAT 2	Goto 67	G47	G67	G67	G67	G67		G67	G47
AUTOPAN	Goto 68	G48	G68	G68	G68	G68		G68	G48
Wash On	Goto 81	G51	G81	G81	G81	G81		G81	G51
Wash Off	Goto 82	G52	G82	G82	G82	G82		G82	G52
Wipe On	Goto 83	G53	G83	G83	G83	G83		G83	G53
Wipe Off	Goto 84	G54	G84	G84	G84	G84		G84	G54
Lights On	Goto 85	G55	G85	G85	G85	G85		G85	G55
Lights Off	Goto 86	G56	G86	G86	G86	G86		G86	G56
Zoom In		Zoom In	Zoom In	Zoom In	Zoom In	Zoom In		Zoom In	Zoom In
Zoom Out		Zoom Out	Zoom Out	Zoom Out	Zoom Out	Zoom Out		Zoom Out	Zoom Out
Focus Near		Focus Near	Focus Near	Focus Near	Focus Near	Focus Near		Focus Near	Focus Near
Focus Far		Focus Far	Focus Far	Focus Far	Focus Far	Focus Far		Focus Far	Focus Far
Iris Open		Iris Open	Iris Open	Iris Open	Iris Open	Iris Open	G87	Iris Open	Iris Open
Iris Close		Iris Close	Iris Close	Iris Close	Iris Close	Iris Close	G88	Iris Close	Iris Close
2400									
4800					4800				
9600		9600	9600	9600	9600	9600		9600	9600

VCL Coax		BBV422		Pelco P	Pelco D	VCL485	Vicon	Molynx	Phillips	Sensormatic
Menu	Goto 95	1 #	G95	G95	G95	G95	G95	G95	G95	G41
	Save 95		S95	S95	S95	S95	S95	S95	S95	
	Goto 61		G61	G61	G61	G61	G61	G61	G61	
PAT Rec St	Goto 62	2 #	G62	G62	G62	G62	G62	G62	G62	G42
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PAT 2	Goto 67	2 Pat	G67	G67	G67	G67	G67	G67	G67	G47
AUTOPAN	Goto 68	Auto	G68	G68	G68	G68	G68	G68	G68	G48
Wash On	Goto 81	Wash on	G81	G81	G81	G81	G81	G81	G81	G51
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Wipe On	Goto 83	Wipe on	G83	G83	G83	G83	G83	G83	G83	G53
Wipe Off	Goto 84	Wipe off	G84	G84	G84	G84	G84	G84	G84	G54
Lights On	Goto 85	Lights on	G85	G85	G85	G85	G85	G85	G85	G55
Lights Off	Goto 86	Lights off	G86	G86	G86	G86	G86	G86	G86	G56
Zoom In		Zoom In		Zoom In	Zoom In	Zoom In	Zoom In	Zoom In	Zoom In	Zoom In
Zoom Out		Zoom Out		Zoom Out	Zoom Out	Zoom Out	Zoom Out	Zoom Out	Zoom Out	Zoom Out
Focus Near		Focus Near		Focus Near	Focus Near	Focus Near	Focus Near	Focus Near	Focus Near	Focus Near
Focus Far		Focus Far		Focus Far	Focus Far	Focus Far	Focus Far	Focus Far	Focus Far	Focus Far
Iris Open		Iris Open		Iris Open	Iris Open	Iris Open	Iris Open	Iris Open	Iris Open	Iris Open
Iris Close		Iris Close		Iris Close	Iris Close	Iris Close	Iris Close	Iris Close	Iris Close	Iris Close
2400				2400	2400					
4800				4800	4800		4800			4800
9600		9600		9600	9600	9600	9600	9600	9600	

VCL Coax		Baxall	Mercer	360 Vision	Mayer	Dennard		Ultrak	Vista
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	Save 95		S95	S95	S95	S95		S95	
	Goto 61		G61	G61	G61	G61		G61	
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PAT Rec Ed	Goto 63	G43	G63	G63	G63	G63		G63	G43
Dome Reset	Goto 64	G44	G64	G64	G64	G64		G64	G44
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AUTOPAN	Goto 68	G48	G68	G68	G68	G68		G68	G48
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Wash Off	Goto 82	G52	G82	G82	G82	G82		G82	G52
Wipe On	Goto 83	G53	G83	G83	G83	G83		G83	G53
Wipe Off	Goto 84	G54	G84	G84	G84	G84		G84	G54
Lights On	Goto 85	G55	G85	G85	G85	G85		G85	G55
Lights Off	Goto 86	G56	G86	G86	G86	G86		G86	G56
Zoom In		Zoom In	Zoom In	Zoom In	Zoom In	Zoom In		Zoom In	Zoom In
Zoom Out		Zoom Out	Zoom Out	Zoom Out	Zoom Out	Zoom Out		Zoom Out	Zoom Out
Focus Near		Focus Near	Focus Near	Focus Near	Focus Near	Focus Near		Focus Near	Focus Near
Focus Far		Focus Far	Focus Far	Focus Far	Focus Far	Focus Far		Focus Far	Focus Far
Iris Open		Iris Open	Iris Open	Iris Open	Iris Open	Iris Open	G87	Iris Open	Iris Open
Iris Close		Iris Close	Iris Close	Iris Close	Iris Close	Iris Close	G88	Iris Close	Iris Close
2400									
4800					4800				
9600		9600	9600	9600	9600	9600		9600	9600






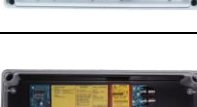




Camera Location












Adding an Rx10X at the camera location enables the control of a large range of non Coax controlled cameras.

The CTI/PLUS should be set to output BBV COAX when used in conjunction with the Rx10X.

BBV design and manufacture a wide range of CCTV products, specialising in protocol conversions.
If you can't see what you require, please call for assistance.
01323 444600

Rx10X		The Rx10X is designed to offer a simple solution for applications where there is a need to control one of a variety of 3rd Party Dome Cameras. The receiver offers considerable opportunities for upgrading existing BBV telemetry systems as it is now possible to add a wide range of integrated domes into the system.
Rx200/WBX		The Rx200 offers control of AC driven pan only or wash / wipe / lights for static cameras. The compact dimension of this PCB allows it to be fitted within a camera housing or dome as an alternative to the more usual weather-proof enclosure.
Rx300/WBX		The Rx300 offers control of AC driven pan, tilt and zoom cameras, whether mounted externally or internally. This gives you entry level control of AC Pan/Tilt/Focus with 1 auxiliary output. Controlled by BBV up-the-coax and 20mA twisted pair. The compact dimensions of the PCB allow it to be fitted within camera housing as an alternative to the more usual weather-proof enclosure.
Rx400/WBX		The Rx400P Telemetry Receiver is ideal for controlling full function ac pan/tilt/zoom Cameras in an external environment where accessories such as wiper, washer etc. are the norm. The Rx400P offers up to 16 full scene presets. These may be used as a method of visually patrolling large areas of a site. They may be interlinked with detection devices in automated system designs. Presets effectively reduce reliance on the operator.
Rx25X		The Rx25X Multiple Protocol Auxiliary Relay Receiver is designed to offer a simple, cost effective solution to activate an auxiliary output, for example to activate a Washer, Wiper or Lights in a static Camera application via a twisted pair cable. The compact dimensions of the PCB allows fitting within the camera housing.
Rx35X/WBX		The Rx35X is a telemetry receiver with ac pan and tilt outputs. It supports BBV RS422, Pelco P, Pelco D, Molynx D type, Sensormatic RS422, Vista RS485 & VCL RS485 telemetry and it allows entry level control of ac pan/tilt and zoom/focus with a wiper auxiliary output. The compact dimensions of the PCB allow it to be fitted within a camera housing as an alternative to the more usual weather proof enclosure. The unit is suitable for 230V mains operation. As a factory fitted option, the receiver can be supplied to operate from 24Vac or 110Vac. This option must be specified at the time of order.
Rx45X/WBX		The Rx45X MK5 is designed to control fixed speed AC pan & tilts heads from BBV and Baxall up-the-coax telemetry and a range of BBV485/422 telemetry protocols. The receiver offers system designers the option of using traditional P/T/Z heads for applications where it is necessary to specify a range of camera / lens combinations.
Rx55X/WBX		The Rx55X MK5 is designed to control variable speed DC pan & tilts heads from BBV and Baxall up-the-coax, and a range of RS485/422 telemetry protocols. The receiver offers system designers the option of using traditional P/T/Z heads for applications where it is necessary to specify a range of camera / lens combinations.

Tx1000		The Tx1000 MK2 series combines a video switch with the simplicity of installation associated with coax controlled systems. These combinations provide a flexible, cost-effective control solution for both internal and external pan / tilt / zoom and dome applications. Like all BBV products, simplicity of use and aesthetic casework are inherent in the design. The Tx1000 series supports coaxial telemetry and BBV422 telemetry as standard and 20mA twisted pair operation as an option, allowing integration with infrared, microwave and fibre-optic links, IP links an optional factory-fitted alarm card with programmable functions is available for connection to up to 16 external detection devices.
Tx1500		The Tx1500 series combines a state-of-the-art-video matrix with the simplicity of installation associated with coax controlled systems. This combination provides a flexible and cost-effective control solution for internal and external pan / tilt / zooms and dome applications. The Tx1500 series supports BBV up-the-coax and BBV 422 twisted pair Telemetry as standard, allowing integration with IR, microwave and fibre-optic Links IP. Modules can be added allowing control of several different domes or receiver types on one system. 20mA telemetry available via add-on optional Tx/MK2/TPO Additional 16-way alarm cards with programmable functions are available for connection of up to 16 external detection devices per card. Up to 6 alarm cards can be added, either local to the Tx1500, or distributed around the site allowing up to 96 inputs. System features include variable sequence dwell time, advanced alarm options including multiple events per alarm and keypad programmed to limit access to cameras and monitors
FBM		Available from 16 to 512 camera inputs and 16, 32, 48 or 64 monitor outputs. Distributed units allow systems of up to 4,096 cameras to be designed Up to 16 keypads Up to 512 alarm inputs The FBM series combines a state-of-the-art video matrix with the simplicity of installation associated with all BBV products. This combination provides a flexible and cost-effective control solution for both internal and external pan / tilt / zooms and dome applications. The FBM series supports BBV422/485 twisted pair telemetry as standard, allowing integration with IR, microwave and fibre-optic links. Modules can be added, allowing control of several different domes or receiver types on one system. Coaxial output cards are available for up-the-coax control of PTZ and domes. Additional alarm cards with programmable functions are available for connection of up to 16 external detection devices per card. Up to 32 alarm cards can be added either locally to the FBM or distributed around the site, allowing up to 512 inputs. Programmable features include variable sequence dwell time, multiple events and programmable alarm text per alarm upon activation. Keyboards can be programmed to limit access to cameras and monitors.
AD121 Converter		The AD 1-2-1 converter is designed to provide single address protocol conversion. The AD 1-2-1 converter accepts AD422 data from a single source, converts it to one of the range of possible RS485/422 protocols.
BBV121 Converter		The BBV 1-2-1 converter is designed to provide single address protocol conversion. The 1-2-1 converter accepts RS485/422 data from a single source, converts it to one of a wide range of possible RS485/422 protocols.
Star Repeater 16		The Star Repeater 16 provides a simple and cost-effective solution in the installation of RS422/485 telemetry systems. The Star repeater 16 takes RS422/485 data from one source and repeats it across 16 isolated outputs, which can be wired in a star format. This unit is optimized for camera systems that only require unidirectional commands.
Starcard		The Starcard provides a simple and cost-effective solution in the installation of RS485/422 telemetry systems. The Starcard takes RS485/422 data from one source and distributes it across 8 isolated outputs which can be wired in a star format or allow up to 31 cameras to be daisy chained. 8 RS422/485 outputs to allow star wiring of telemetry systems and Tx1500 Key boards and alarm Cards can also be used when star wiring is required for other systems
Starcard Converter		The Starcard Converter is designed to provide simple and cost effective RS485/422 protocol conversion. The Starcard converter accepts RS485/422 Data from one source converts it to one of a wide range of possible RS485/422 protocols and distributes it across eight isolated outputs. The outputs can be wired in a star format or a daisy format to allow up to 31 cameras to be controlled from each output.
ASGARD HD Decoder		The Asgard HD Decoder is a 30fps, 1080p standalone unit, which facilitates the streaming of camera images from one or more media servers, without the need of a PC. This enables display monitors to be mounted remotely around the premises or network. The unit can be additionally controlled by simple CGI commands from control workstations or hand held devices.

