



## Tx1500 control protocol V3 JULY 08



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Baud settings: 9600,N,8,1

Data can be sent at full speed with no inter-character pacing.

Function	String	Notes
SELECT MONITOR	@2,M <CR>	M = monitor number (1 – 8 for Tx1500) M = monitor number (1 – 64 for FBM)
SELECT CAMERA	@3,C <CR>	C = camera number (1 – 96 for Tx1500) C = camera number (1 – 4096 for FBM)
PAN RIGHT	@5,2 <CR>	
PAN LEFT	@5,3 <CR>	
TILT UP	@5,4 <CR>	
TILT DOWN	@5,5 <CR>	
ZOOM IN	@5,6 <CR>	
ZOOM OUT	@5,7 <CR>	
FOCUS FAR	@5,8 <CR>	
FOCUS NEAR	@5,9 <CR>	
IRIS CLOSE	@5,10 <CR>	
IRIS OPEN	@5,11 <CR>	
WASH ON	@5,12 <CR>	
WIPER ON	@5,19 <CR>	
LAMPS ON	@5,21 <CR>	
STOP PAN RIGHT	@6,2 <CR>	
STOP PAN LEFT	@6,3 <CR>	
STOP TILT UP	@6,4 <CR>	
STOP TILT DOWN	@6,5 <CR>	
STOP ZOOM IN	@6,6 <CR>	
STOP ZOOM OUT	@6,7 <CR>	
STOP FOCUS FAR	@6,8 <CR>	
STOP FOCUS NEAR	@6,9 <CR>	
STOP IRIS CLOSE	@6,10 <CR>	
STOP IRIS OPEN	@6,11 <CR>	
STOP WASH ON	@6,12 <CR>	
STOP WIPER ON	@6,19 <CR>	
STOP LAMPS ON	@6,21 <CR>	
STOP PAN/TILT/LENS	@6,22	Stops all pan/tilt and lens movement
PAN/TILT SPEED	@7,P,T <CR>	P=Pan & T=Tilt speed in the range 0 - 15 0 = slowest, 15 = fastest
GOTO PRESET	@8,P <CR>	P = preset number (1-99)
PROGRAM PRESET	@9,P <CR>	P = preset number (1-99)
START PATROL 1	@10 <CR>	
START AUTOPAN	@12 <CR>	
START MONITOR SEQUENCE	@25,0 <CR>	Same as hold off
STOP MONITOR SEQUENCE	@25,1 <CR>	Same as hold on

Relay ON (Triangle Key)	@50,X<CR>	X = 0 – 12 0 = Tx1500 relay 1 – 2 = relays 1 & 2 of alarm card 1 3 – 4 = relays 1 & 2 of alarm card 2 5 – 6 = relays 1 & 2 of alarm card 3 7 – 8 = relays 1 & 2 of alarm card 4 9 – 10 = relays 1 & 2 of alarm card 5 11 – 12 = relays 1 & 2 of alarm card 6
Relay OFF	@51,X<CR>	X = As above
HASH command	@52,X<CR>	X = hash number – see Tx1500 for specific hash commands.
Send Single Key Press	@53,0<CR>	'0' Key
	@53,1<CR>	'1' Key
	@53,2<CR>	'2' Key
	@53,3<CR>	'3' Key
	@53,4<CR>	'4' Key
	@53,5<CR>	'5' Key
	@53,6<CR>	'6' Key
	@53,7<CR>	'7' Key
	@53,8<CR>	'8' Key
	@53,9<CR>	'9' Key
	@53,10<CR>	'CAMERA' key
	@53,11<CR>	'MONITOR' key
	@53,12<CR>	'CLEAR' key
	@53,13<CR>	'+' key
	@53,14<CR>	'-' key
	@53,15<CR>	'PRESET' key
	@53,16<CR>	'PATROL' key
	@53,17<CR>	'SEQ' key
	@53,18<CR>	'RELAY/TRIANGLE' key
	@53,19<CR>	'ALARM' key
	@53,21<CR>	'PROGRAM' key
	@53,22<CR>	TX1500 MENU ACCESS
Display current Info	@54<CR>	Output current camera, monitor & lights status

All characters shown are the actual ASCII characters that should be sent. Two or three digit numbers will be sent using either two or three characters.

All commands are terminated with a <CR> = 0x0d or decimal 13

## Examples

Select camera 1 onto monitor 4

```
@2,4 <CR>    Complete HEX byte string    0x40 0x32 0x2c 0x34 0x0d
@3,1 <CR>    0x40 0x31 0x2c 0x31 0x0d
```

Once the monitor is selected, any subsequent camera selects relate to this monitor ie to now select camera 16 send the following:

```
@3,16 <CR>
```

The current camera can then be controlled using the @5 and @6 commands.

@5 commands are used to start a function and @6 commands are used to stop a function. Only a single function can be controlled with each command

To Pan Left, Tilt Up and Zoom in, send the following:

```
@5,3 <CR>
@5,4 <CR>
@5,6 <CR>
```

Pan and Tilt speeds are sent using the @7 command. 16 speed are supported, 0 being the slowest speed up to 15 as the fastest.

If no speed command is sent following a @5 command then a speed of 1 will be assumed. This prevents the head from 'jerking' on movement start.

### Speed Examples

Move Left at increasing speeds

```
@5,3 <CR>    Start Panning Left
@7,1,1 <CR>   Slow Pan Speed
@7,5,1 <CR>   Increased Pan Speed
@7,10,1 <CR>  Even Higher Pan Speed
@7,15,1 <CR> Full Pan Speed
```

To stop movement in a direction send a @6 command.

To stop moving left send

```
@6,3 <CR>
```

Selecting a new camera whilst the current camera is moving will cause the current camera to stop moving before selecting the new camera.

### Responses sent from the TX1500 BBUS Interface

Each response is followed by CR/LF.

On power up the following message is sent: TX1500 BBUS I-F V6

After each successfully received command the interface responds with OK and ERR followed by reason if the command or a parameter is invalid.

After a @54<CR> command or if the current monitor, camera or LED status changes the following message is send. M1,C01 0000000

M = The monitor number, 1-8

C = The camera number, 1-96

The next 7 characters represent the LED status, 1 if the LED is ON, 0 is OFF as shown left to right.

LIGHTS, AUTOPAN, WIPE, ALARM, TRIANGLE, SEQ, PATROL

EG monitor 2 showing camera 45 which is running a patrol with the lights on.

```
M02,C45 1000010
```

## Version History

18 July 08	DL	Added info re Monitors for FBM and Tx1500 Added info re Camera for FBM and Tx1500
23Jan03	PSC	Added stop all command, @6,22 Added responses from BBUS interface
10Dec02	PSC	Pan/Tilt speed changed from percentage to 0 – 15, @7,P,T
16Nov02	PSC	Initial Revision

# Notes

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## Other BBV products.

Product	Description
TX300	Single camera desktop telemetry transmitter with BBV up-the-coax & 20mA telemetry, Pan/Tilt/Lens & Lights
TX400	As TX300 inc Wash, Wipe, Autopan, 8 presets, preset patrol.
TX400DC	As TX400 including joystick for proportional Pan/Tilt control.
TX1000 MK2	8 or 16 camera, 2 monitor telemetry transmitter. Up to 2 keyboards. BBV up-the-coax and RS422 standard with options for alarm inputs and 20mA telemetry.
TX1500	Mid size matrix 16 - 96 camera, 8 monitor. Up to 4 control positions (keyboard & remote control) options for alarms, remote control, BBV up-the-coax and RS485 telemetry.
FBM range	Large size matrix. Configurable up to 4096 cameras and 64 monitor outputs. Up to 8 control positions (keyboard & remote control) options for alarms, remote control RS485 telemetry with various options. Please call to discuss requirements.
RX100	Dome Interface with options to drive a large library of dome cameras. BBV up-the-coax and 20mA telemetry.
RX200	AC receiver for Pan only heads or static cameras, Wash/Wipe/Lights. BBV up-the-coax and 20mA telemetry.
RX300	AC receiver for Pan/Tilt/Zoom/Focus/Iris Override and 1 Auxiliary output. BBV up-the-coax and 20mA telemetry.
RX400P	AC full function receiver. PTZFI 4 Auxiliary outputs, 16 presets. BBV up-the-coax and 20mA telemetry.
RX400DC	24Vdc high/variable speed receiver. 16 presets, 8 local alarm inputs, 3 Auxiliary outputs. BBV up-the-coax and 20mA telemetry.
RX45X (AC) RX55X (DC)  Multi RS485 protocol and BBV up-the-coax telemetry receivers	Multiple RS485/422 and BBV up-the-coax controllable AC and DC receivers. These receivers are controlled from an expanding range of serial protocols as listed below. 110/230Vac supply. PTZFI, 64 presets, preset patrol, 8 local alarm inputs, 12V 500mA supply output. OSD for remote diagnostics. 3 Aux. outputs RX55X or 4 Aux. outputs RX45X. Optional Privacy board. BBV RS485, COAX & 20mA, BAXALL COAX, DENNARD RS485, MOLYNX PELCO P/D RS485, VCL/HONEYWELL RS485, PHILIPS/BOSCH RS485 (OPTIONAL BI-PHASE INPUT), SENSORMATIC/AD RS422 VICON RS422 CIRRUS AUDIO MONITORING
STARCARD STARCARD/CONVERTER	8 * RS485 output, 2 wire simplex RS422, 4 wire full-duplex RS422, 2 wire half-duplex RS485. Optional STARCARD/CONVERTER offering protocol conversion to drive an increasing range of 3 <sup>rd</sup> party protocols.
ACCESSORIES	CTI/16 16 camera, RS422 to up-the-coax converter TxLD (bidirectional RS422-RS232 converter) 98005 (bidirectional 20mA-RS232 converter) AD RS422 (American Dynamics) protocol converters