



## Videowave Product Specification Guide

To enable correct specification of RDT's Videowave products there are some fundamental pieces of site information that are required. The questions highlighted in bold below should be asked to ascertain a reasonable idea of the site conditions and requirements. In all cases, equipment specified for quotations should be subject to site survey. Loan equipment is available for site tests so that the installer or end user may satisfy themselves that equipment specified meets their site requirements.

### **How many remote cameras need to be transmitted via wireless links?**

In most cases, the maximum number of wireless links that may be used on a single site is 4. This would use the single channel 1394MHz link, plus 3 of the 2400MHz links (channels available: 2413MHz, 2442MHz, 2471MHz). If it is only required to transmit a single camera, then the 1394MHz version is usually the better option as this offers a higher Rf power output (and therefore greater range) than the 2400MHz versions. If there is more than 1 camera to be transmitted on the site, it is necessary to use the 2400MHz links as the 1394MHz band does not have multiple channels available.

### **What is the required transmission distance for each of the remote cameras?**

The distances between the proposed transmission points may determine whether the 1394MHz or 2400MHz system would be more suitable, and will dictate which antennas will be required. The range charts below give an indication of the distances achievable at each of the frequency bands with the various antennas available. Please note that the distances quoted are line of sight, i.e. there is an unobstructed path between transmitter and receiver antennas.

#### Antenna range chart for 1394MHz Videowave wireless video transmission

1394MHz Antenna		Receiver Antenna				
		ANT0002	ANT0003	ANT2350	ANT0005	ANT2351
Transmitter Antenna	ANT0002	800m	800m	800m	1000m	2000m
	ANT0003	800m	800m	800m	1000m	2000m
	ANT2350	800m	800m	800m	1000m	2000m
	ANT0005	1000m	1000m	1000m	1200m	3000m

#### Antenna range chart for 2400MHz Videowave wireless video transmission

2400MHz Antenna		Receiver Antenna			
		ANT2373	ANT2400	ANT2374	ANT0026
Transmitter Antenna	ANT2373	300m	300m	650m	800m
	ANT2400	300m	300m	650m	800m

**Antenna range chart for RM9600 radio modem (telemetry/data transmission)**

458MHz Antenna		Receiver Antenna	
		ANT0006A	ANT0008
Transmitter Antenna	ANT0006A	800m	2000m
	ANT0008	2000m	5000m

**Is there clear line of sight, or are there any obstructions in the signal path?**

The Videowave 2400MHz wireless links ideally require an unobstructed signal path for correct operation. Videowave 1394MHz can operate with some obstructions (e.g. roof tops, trees), but the more obstructions there are, the less the range of the system will be. The structure and material of the obstruction will also affect range (i.e. a metal clad building will affect the radio signal more than a brick building). In such cases where the signal path is obstructed, it is essential to carry out a site test prior to installation, and it may be necessary to upgrade the antennas to achieve the required transmission distance.

**Are the units to be mounted externally?**

RDT can supply all transmitters and receivers with or without IP67 rated weatherproof enclosures. If the transmitter or receiver is to be mounted internally, then it may be necessary to use a remote antenna located outside the building. This is the same in principal as using an external antenna to improve the reception on a television. The co-ax length between the Tx or Rx and antenna is very critical at high frequencies (maximum recommended co-ax length from transmitter or receiver to antenna is 3m), so it is usually far better for the units to be mounted externally if possible to obtain the clearest signal path. Remotely mounted antennas may still be required either to extend range, or to keep the antenna in clear air away from any structure that may affect performance, particularly metal. See the Videowave user manual for additional information on locating antennas.

**Is telemetry control required?**

RS485 or RS232 telemetry control will require the addition of RDT's RM9600 series radio modems, which are available separately, or in assembled weatherproof enclosures with the Videowave transmitters and receivers. It is not possible to transmit co-axial telemetry directly over the radio link. If the telemetry output from the control equipment is co-axial, then appropriate converters will be required.

**What make of telemetry is the radio equipment to be used with (e.g. Pelco, Dennard, etc.)?**

If you're not sure if the telemetry is compatible for use over radio then please check with RDT. The following telemetry protocols, controllers, and domes have previously been tested successfully for compatibility with radio transmission:

- BBV RS485 starcard & RX45X/RX55X receiver
- BBV 20mA (RS232 converters required for 20mA format)
- Bewater Solaris dome (Molynx protocol)
- Conway Omega keyboard & dome
- DM Sprite / Dennard 2060 dome
- DM Sprite / Ultrak KD6
- Forward Vision MIC1
- Honeywell (VCL) dome
- Honeywell HRHD digital recorder / remote keyboard / slave keyboard
- Mark Mercer controller and D250 dome
- Molynx 6000 series
- Panasonic controller and dome
- Pelco D protocol
- Pelco P protocol
- Sensormatic dome (RS422 simplex only)
- Vicon Surveyor dome

Vicon V1411-DVC keyboard / V1411A matrix (2 x radio data links required)  
Videoswitch Vi series DVR / remote keyboard (VX10 breakout boxes required)  
Vista Columbus DVR / remote keyboard (BAXNET protocol)  
Vista Powerdome  
Vista VDC 1604 / remote keyboard (BAXNET protocol)

Application notes illustrating connection and configuration with the above may be found on the Videowave product information CD, or may be downloaded from the RDT website: <http://www.radiodata.co.uk/Downloads/rdt-downloads.htm> . Please refer to the application details in the data sheet VTXxxxxENCD for additional information on telemetry configurations over radio.

If you have any doubts or require assistance then please do not hesitate to contact RDT technical support, we'll be pleased to help.

### **Example Specification No.1**

The example answers to the questions are highlighted in blue.

**How many remote cameras need to be transmitted via wireless links?**

**1**

**What is the required transmission distance for each of the remote cameras?**

**1500m**

**Is there clear line of sight, or are there any obstructions in the signal path?**

**1 or 2 rooftops obstructing (Note: Site test will be required)**

**Are the units to be mounted externally?**

**Yes**

**Is telemetry control required?**

**No**

**What make of telemetry is the radio equipment to be used with (e.g. Pelco, BBV, etc.)?**

**N/A**

#### **Items Required:**

<b>Qty</b>	<b>Part Code</b>	<b>Description</b>
1	VTX1394SE	Colour video transmitter + PSU in IP67 enclosure
1	VRX1394SE	Colour video receiver + PSU in IP67 enclosure
1	ANT0005	End-fed dipole antenna 1394MHz
1	ANT2351	Patch antenna 12dB 1394MHz

### **Example Specification No.2**

**How many remote cameras need to be transmitted via wireless links?**

**3**

**What is the required transmission distance for each of the remote cameras?**

**1 camera at 650m range and 2 cameras at 700m,**

**Is there clear line of sight, or are there any obstructions in the signal path?**

**Clear line of sight from all camera locations**

**Are the units to be mounted externally?**

**Yes**

Is telemetry control required?

Yes

What make of telemetry is the radio equipment to be used with (e.g. Pelco, BBV, etc.)?

To control 3 x Dennard 2050 domes (RS485)

**Items Required:**

Qty	Part Code	Description
3	VTX24xxENCD	Colour video transmitter + radio modem & PSU in IP67 enclosure
1	VRX24xxENCD	Colour video receiver + radio modem & PSU in IP67 enclosure
2	VRX24xxENC	Colour video receiver + PSU in IP67 enclosure
3	ANT0026	Reflector antenna 14dB 2400MHz

**Example Specification No.3**

How many remote cameras need to be transmitted via wireless links?

1

What is the required transmission distance for each of the remote cameras?

2500m

Is there clear line of sight, or are there any obstructions in the signal path?

Clear line of sight (Note: Site test advised for longer transmission distances)

Are the units to be mounted externally?

Yes

Is telemetry control required?

Yes

What make of telemetry is the radio equipment to be used with (e.g. Pelco, BBV, etc.)?

BBV RS485

**Items Required:**

Qty	Part Code	Description
1	VTX1394SED	Colour video transmitter + radio modem & PSU in IP67 enclosure
1	VRX1394SED	Colour video receiver + radio modem & PSU in IP67 enclosure
1	ANT0005	End-fed dipole antenna 1394MHz
1	ANT2351	Patch antenna 12dB 1394MHz
2	ANT0008-CAB	End-fed dipole antenna 458MHz