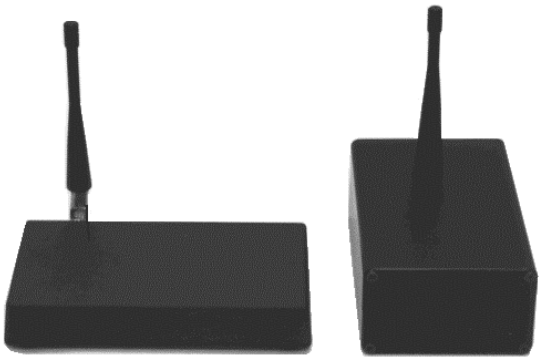
DATASHEET

TVSYS –4: True View™ High Performance Extra Long-Range Wireless Video System



DC Supply for Receiver: 10 - 15 V DC @ 300 mA
DC Supply for Transmitter: 12-15 V DC @ 1.5 A
Receiver Frequency Range: 902 - 928 MHz.
Video Bandwidth: > 5 MHz.
FCC Part 15 certified
Video Output: 1.0 Vpp @ 75 W (NTSC, PAL, SECAM)
Transmission Range: up to 20 miles with optional antenna ANTY915

Wireless video transmission systems have become a convenient and cost effective means to connect video cameras to monitor systems which otherwise would be impossible. Wired systems require permanent installations and large amounts of time to execute. Wireless solutions can be installed in just minutes, and are adaptable as the needs change. In the last few years, the FCC has made several new, unlicensed frequency bands available for wireless applications. Pragmatic has chosen the 900 MHz band for its new products that include wireless video, audio and data transmission systems.

Many applications for video security systems quickly become very complicated because of wiring problems. For example, a wired video security system located in different buildings or across a road would be nearly impossible to implement. Wiring for only a temporary installation is also expensive and inconvenient, but a wireless system is a cost effective and efficient solution to these dilemmas.

Some applications for wireless video security systems include covert monitoring, multiple observation locations from one video source or extending the coverage of an existing wired system. In addition, there are numerous portable applications for wireless video systems. For example, police officers could use a wireless system to document an arrest or provide backup surveillance on location. There is even the option for multiple receivers so all officers involved in a group operation could be kept informed with the latest information. Wireless video systems can also be implemented in residential applications. For years, security gates have had voice capability for access control but lacked proper video because of the distances involved or the multiple control points, but now wireless systems provide a solution.

The application possibilities are endless, from a remotely controlled aircraft or helicopter sending graphical information wirelessly to a command center or personnel on the ground, to a fire truck with a small video camera at the end of its ladder sending critical visual information to multiple locations on the ground in order to monitor the progress of a fire from a bird's eye view. These and many other applications can find

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wireless video transmission vital, economical and easily deployable by using the True View™ wireless video systems from Pragmatic.

The wireless video products from Pragmatic use 900 MHz unlicensed ISM bands. The frequency in-use spans a range from 902 MHz to 928 MHz. Normally it is impossible to transmit radio signals through steel reinforced concrete or structures with metal coverings, yet often the 900 MHz signals in Pragmatic's wireless products find small gaps in the metal structures to penetrate. There is the possibility of degradation or partial loss of signal, but much of this problem is overcome by slightly moving the receiver antenna. Raising the antennas at the transmitter sight, receiver sight or both, may increase the received range. An optional Yagi antenna connected to the receiver can extend the range of operation up to 4 times the norm and help eliminate interference from the received signal. The receiver antenna must be pointed in the general direction of the transmitter to achieve the best maximum range. Typical operational range for low power unlicensed systems such as the TVSYS-1, TVSYS-2 and TVSYS-5 is from 300 to 1200 feet line of sight. The range depends on building structure, metal surfaces, antenna height, receiver antenna, and interference from other radio transmitters using these same frequency bands. Remarkably, cellular phones operating close to the 900 MHz band have been shown to have no effect on Pragmatic systems.

As mentioned previously, a high gain Yagi antenna placed at the receiver will reduce the effects of other signal interference and increase the operational range. The alignment of the Yagi elements may be rotated 90 degrees to match horizontal or vertical transmissions. DC power is supplied to the transmitter and receiver modules. 120 V AC to 9 V DC power packs are recommended, however, both units will operate from 10-16 V DC unregulated power supplies. The low power transmitters in TVSYS-1, TVSYS-2 and TVSYS-5 have an internal antenna and will operate from 7.2 V DC (6 Ni-Cd battery cells). The receiver is supplied with a 1/2 wave dipole or a 1/4 wave antenna and uses 300 mA of current. Batteries can be used as a power source and the coaxial power connector is 2.5 mm type center conductor positive. Video signals are connected via standard RCA connectors with video levels of 1.0 Vpp at 75 Ohms. Low power transmitter and receiver units are not waterproof so exterior use requires a sealed container to provide protection from moisture. The transmitter can only be housed in a plastic so that the internal antenna can radiate a signal, while the receiver antenna can be connected via any coaxial cable or waterproof chassis connection.

It should be remembered that losses in the coaxial cable would reduce the signal reaching the receiver and hence a low noise amplifier (LNA) may be connected optionally at the antenna to improve the system performance. The receiver RCV915 is designed to provide DC power to a LNA at the antenna.

For other applications requiring transmission ranges from 5 to 20 miles, 1-Watt or 4-Watts transmitter is available. It operates with an external antenna and must be licensed with the FCC for private use or use by a government agency. If a 1-Watt or 4-Watt transmitter is being used, the antenna must be connected first before applying power to the module, otherwise the transmitter modules may be destroyed without connecting the antenna as a load. The range of the 1-Watt unit has been tested up to 5 miles line of sight, while the 4-Watt system has been tested to a range up to 20 miles line of sight, with additional options of a Yagi antenna for additional distance. The power requirements for the 1-Watt transmitter are 7.2 V DC to 15 V DC at 500 mA with internal power supply regulation provided. The 4-Watts transmitters operate from stable power sources in the range of 12-14.5 V DC only. Power supply ripple should be less than 250 mVpp. AC-DC power packs are supplied for all systems but battery operation is also available provided power is maintained within prescribed limits. High power 1-4 Watt transmitters are only about 30% efficient and are housed in metal cases with heat sinks. They must be sealed in other equipment with air ventilation. 1-4 Watt transmitters operate warm to the touch but are not hot.

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Coaxial cable type RG58 (50 Ohms) or better is recommended for connection between the antennas and either the transmitters or receivers. It is advised to keep cable length under 10 feet, if possible, in order to avoid signal loss at 900 MHz. It is advised to run power and video cables long distances rather than 900 MHz antenna cables.

Applications:

Remote surveillance
Video conferencing
Mobile video coverage
Aircraft surveillance
Remote video recording
Broadcast video link
Video broadcast on campus
High performance wireless video network
Law enforcement - ATF / CIA / DEA / FBI / INS
Aerial video surveillance from helicopters / airplanes

Features and Benefits:

WVT-4 Transmitter with antenna ANT-1T
RCV915 wireless receiver with antenna ANT-1R
Two AC-DC wall power jacks
Transmission range: up to 20 miles with optional antenna ANTY915
DC supply for transmitter: 12 - 15 V DC @ 1.5 A
DC supply for receiver: 10 - 15 V DC @ 300 mA
Video output: 1.0 Vpp @ 75 W (NTSC, PAL, SECAM)
Receiver frequency range: 902 - 928 MHz.
Works with color or B&W camera signal
Light weight and compact in size
Video Bandwidth > 5 MHz
Optional Features include:
- CLA-12: cigarette lighter adapter for auto
- BATT-1: rechargeable battery pack - 7.2 V DC
- CLCD- 4" Color LCD Video Monitor
- WATX: wireless audio transmitter (factory installed option)
- WARX: wireless audio receiver (factory installed option)

Architect Specifications:

The unit shall consist of a wireless transmitter and a wireless receiver. It shall be capable of transmitting high performance black and white or colored video. It shall have a transmission range of up to 20 miles with optional antenna ANTY915. I shall have a DC supply for transmitter of 12 – 15 V DC at 1.5 A and a DC supply for receiver of 10-15 V DC at 300 mA. The video output shall be 1.0 Vpp at 75 Ohms 1.0 Vpp @ 75 W (NTSC, PAL, SECAM). The receiver frequency range shall be 902-928 MHz. It shall have multiple optional features and be FCC Part 15 certified.

The unit shall be a Pragmatic TVSYS-4 high performance, extra long-range wireless video system.

ONLY for Government Agencies, users with FCC license for high power unit or exports outside USA

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