TX905-PRO

900MHz 500mW Wireless A/V Transmitter (USA Model)

The TX905-PRO is a miniature audio-video (A/V) transmitter that operates on the 900MHz RF band. It is intended for amateur radio (ham hobby) use and must not be used in commercial applications. The items included with your purchase are shown in Figure 1.

Figure 1, TX905-PRO

This transmitter differs from other 900MHz models because it includes EMI/RFI filtering technology to help reduce frustrating RF noise problems. The filtering includes a Ferrite type common-mode choke, LC-filter components on a custom circuit board, and a novel low pass filter that is installed on the antenna connector. These filters work together to help minimize conducted and radiated EMI/RFI noise.

Due to its high RF power, using the TX905-PRO requires an amateur/ham radio license; some countries may forbid its use. It is your responsibility to follow the requirements imposed by your government's RF spectrum regulations. Do not purchase this product if you are unsure of the requirements or are unable to comply with them.

DPCAV or its resellers will not be held responsible for ANY problems that may occur due to the use of this RF device. Use at your own risk!

SPECIFICATIONS (USA MODEL):

Frequency:	910MHz (allowed for Amateur Radio use in the USA)
RF Power:	500 milliwatt
RF Port Z:	50 ohms
Modulation:	FM video / FM audio
RF Stability:	±250KHz, phase lock loop (PLL) controlled
Video Type:	Composite NTSC or PAL
Video Level:	1Vpk-pk
Video Z:	75 ohms
Microphone:	Electret type with integrated pre amp and volume control
Voltage:	12VDC (min 9.5VDC, max 12.5VDC)
Current:	200mA typical, 250mA maximum
Ant Jack:	SMA
Ant Filter:	7-section low pass RF filter, removable.
Vid Cable:	3-Pin male Futaba Servo Style, 7-inches long
Aud Cable:	3-Pin JR Servo Style, 7-inches long
Power Jack:	2-Pin JST/BEC Type, 5-inches long
Range:	Varies, typically 500 - 1000 meters in unobstructed open area
Weight:	57 grams (includes microphone, filters, cables, and antenna)
Dimensions:	2.0 x 1.0 x 0.35 inches (50 x 26 x 9 mm), main RF module only

Note: Specifications subject to change without notice.

1 ANTENNA / LOW PASS FILTER INSTALLATION

1.1 The installation begins by screwing the provided TXF-900 Low Pass Antenna Filter onto the transmitter's SMA connector. It should be tight, but avoid using a wrench because too much torque will cause damage. Please see Figure 2.

1.2 Install the provided dipole antenna onto the filter. Please see Figure 2.

Note: Do not operate the TX905-PRO without an antenna and only use antennas that are designed for 900MHz operation. Failure to follow this is harmful to the transmitter's circuitry and may cause permanent failure.

Figure 2, TXF-900

1.3 If the antenna will be subjected to physical stress then we recommend that you provide additional support to the filter and antenna. This will help prevent damage to the RF connectors. Do not use metal or RF conductive materials; Wood and most plastics are safe to use.

2 VIDEO CABLE CONNECTION

2.1 Install the video source (camera, video telemetry OSD, etc.) on the transmitter's yellow colored 3-pin VID-IN connector. See item #1 in Figure 3.

The video connector's pin-out is as follows:

Black:	Common Video/Power Ground
Red:	Camera Power (12VDC compatible cameras only!)
White:	NTSC or PAL Composite Video Signal (input)

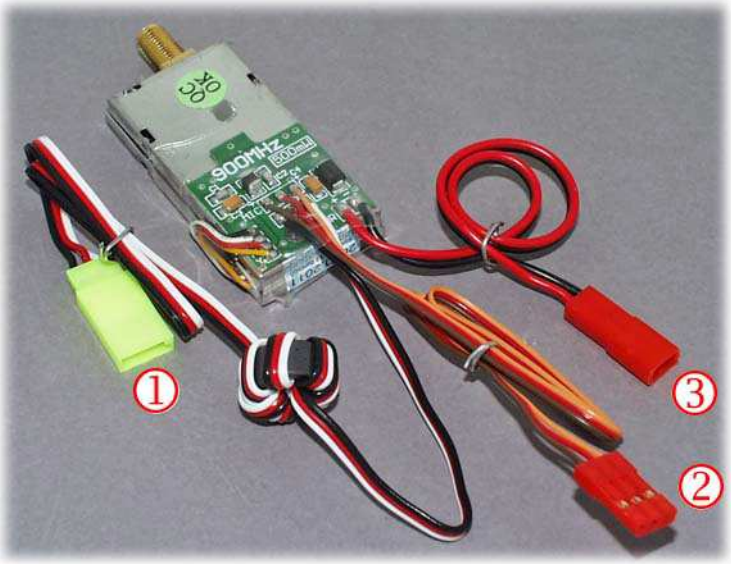

Figure 3, Cables

2.2 The VID-IN connector is a female Futaba style servo receptacle. So, creating custom cables is not a difficult task, but some soldering is required. However, pre-made (ready to use) video cables are available. The following table shows the video cable part numbers and the DPCAV video cameras they will accept.

CAMERA MODEL	VIDEO CABLE, FILTERED	VIDEO CABLE, NON-FILTERED
DPC-171	#CAB3X-3PSF	#CAB3X-3PSU
DPC-420A	#CAB4X-3PSF	#CAB4X-3PSU
DPC-480A	#CAB4X-3PSF	#CAB4X-3PSU

3 AUDIO CABLE CONNECTION

3.1 Install the provided microphone on the transmitter's orange colored 3-pin audio connector. See item #2 in Figure 3.

The audio connector's pin-out is as follows:

Brown: Audio Ground
Red: Mic Power (+12VDC)
Orange: Line-Level Audio Signal (Input)

4 POWER CONNECTION

4.1 The red colored 2-pin DC-IN power connector provides power to the transmitter. It is a standard JST/BEC female receptacle. Please see Item #3 in Figure 3. The voltage that is applied to this connector provides power to the transmitter. It is also RFI filtered and routed to the VID-IN cable (Item #1) for powering a small 12V camera. The camera must consume less than 150mA current.

4.2 The DC-IN connector's pin-out is as follows:

Red: 12VDC (9.5V-12.5V) / DC Positive
Black: Power Ground / DC Negative

Note: NEVER exceed the recommended voltage or serious damage will result and the warranty will be voided.

4.3 Battery power is highly recommended; a 3-cell (11.1V) lithium polymer / LiPO pack works well for portable operation. If AC mains powered, the TX905-PRO requires a voltage regulated 12VDC wall adapter. Do not use unregulated types since they may cause serious damage or poor operation.

4.4 The following table lists popular DPCAV batteries that can be used to operate the transmitter and a typical 12V powered CCD camera.

POPULAR VIDEO TRANSMITTER BATTERIES		
BATTERY TYPE	ADAPTER CABLE	GENERAL NOTES / DURATION
#LB3CR-360	None Required	Lightweight 360mAH LiPO. ~1 Hour duration.
#LB3CR-610	None Required	Popular 610mAH LiPO. ~2 Hours duration
#LB3CT-1000	None Required	High Capacity, 1000mAH LiPO. 3 - 4 Hours duration.
#LB3CT-1800T	#CORD-UJ2	Heavy/High Capacity, 1800mAH LiPO. 5 - 6 Hours duration.

5 MICROPHONE VOLUME CONTROL

Figure 4, Volume

5.1 The provided amplified microphone includes a volume level adjustment. See Figure 4. The factory setting should be satisfactory, but the volume can be adjusted.

5.2 A very small screwdriver is needed to change the volume. If you do not have a small enough tool then try carving a chisel shaped tip on a toothpick and use it instead.

Note: Excess force will damage the volume control. Be very gentle with the screwdriver!

6 FREQUENCY/CHANNEL SELECTION

6.1 The TX905-PRO is factory configured to transmit on 910MHz. The compatible video receiver (not included) must be configured so that its operating frequency is the same. If you are using a DPCAV #RX900-STD or #RX900-DLX A/V Receiver then simply set it to CH-1.

Note: Due to FCC regulations, all TX905-PRO transmitters that are delivered to USA destinations are permanently set to 910MHz (CH-1).

7 SPECIAL APPLICATIONS: VIDEO OSD INSTALLATIONS

7.1 The TX905-PRO can be used with video OSD telemetry systems. We recommend that you follow the instructions provided by the OSD manufacturer.

7.2 The optional #CAB3MM-125F cable (not provided) is needed for EagleTree Systems OSD installations and similar OSD models. This cable accessory converts the TX905-PRO's female VID-IN connector into a male plug, which is required by the eLogger OSD expander module.

The photo below (Figure 5) shows an example of a EagleTree Systems OSD-STD installation. DPCAV part numbers are shown for reference.

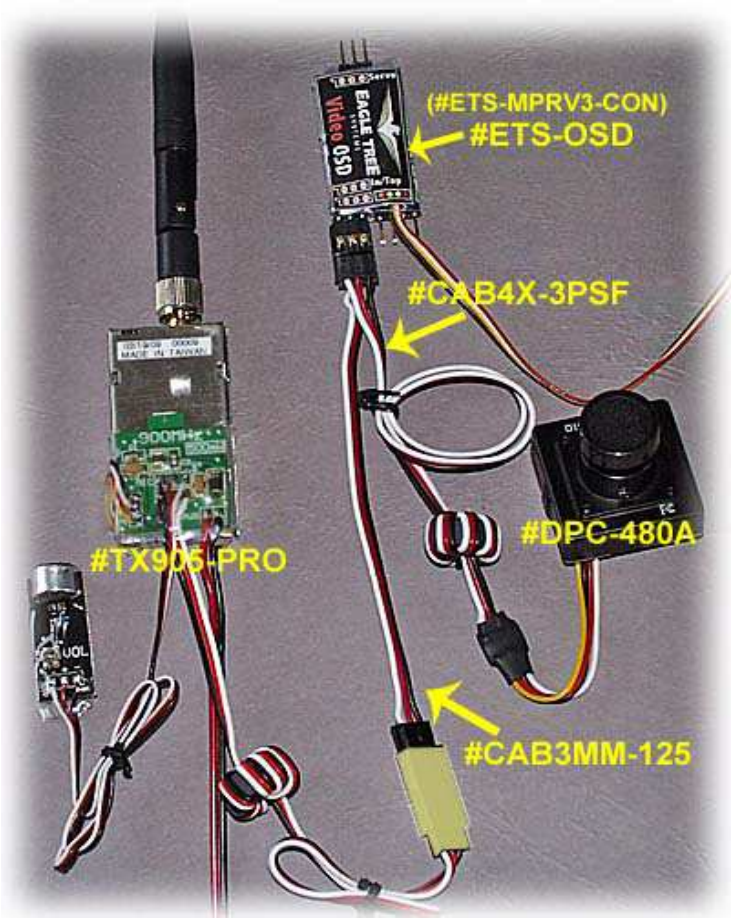

Figure 5, OSD Example

7.3 For EagleTree OSD-PRO installations the optional #CAB3MM-125J cable (not provided) is also needed to connect the microphone to the OSD. This cable is not shown in photo.

8 IMPORTANT INFORMATION

8.1 The transmitter will become hot during use. It must have adequate air flow to prevent over heating. Never block the air holes. If it becomes too hot to touch then immediately remove power and allow it to cool.

8.2 Even though this transmitter includes special EMI/RFI filters, the 900MHz RF signal is very strong and may cause interference to nearby GPS systems, electronic controllers, radio receivers, and other electronic items. If this occurs, move the transmitter antenna further away from the affected items and any related wiring. We recommend a minimum of 12 inches (more may be required).

8.3 The TX905-PRO is calibrated for use with DPCAV's #RX900-STD and #RX900-DLX A/V receivers. Other receiver brands may have compatible frequencies, but their video levels might be different. So, for best performance with other receivers it may be necessary to calibrate their video output signal. Please consult with the receiver manufacturer for calibration instructions.

Notice: Due to the 900MHz transmitter's high RF power, using it in the USA and other countries will require an amateur/ham radio license (some countries may forbid its use). It is YOUR responsibility to ensure that its use meets the requirements of your government's RF spectrum regulations.

Do not purchase this product if you are unsure of the government requirements or are not able to comply with them.

DIGITAL PRODUCTS COMPANY
90 Day Limited Warranty

COVERAGE:
This product is warranted to be free from defects in parts and workmanship for a period of 90 days. Digital Products Company (DPC) will repair or replace (at its option) the product and any of its parts which fail to conform to this warranty. The warranty period begins on the date it was first purchased. This warranty is in lieu of all other expressed warranties. DPC does not assume or authorize any party to assume for it any other obligation or liability. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS. YOU MAY HAVE OTHER RIGHTS, WHICH VARY FROM STATE TO STATE.

MODIFICATIONS:
Any modifications or repair by anyone other than Digital Products Company (DPC) or its authorized agents will void this warranty.

NOT COVERED IN THE WARRANTY (EXCLUSIONS):
1. Malfunctions due to improper installations, non-authorized repairs, tampering, misuse, dropping impact or modification.
2. Possible incompatibility with other A/V equipment.
3. Damage due to acts of God, lightning or accident.
4. Incidental or consequential damages, including damages from delay or loss of use, or equipment damage to other customer owned equipment.
5. Any product whose serial number or anti-tamper label have been altered, defaced or removed.
6. Batteries, cords, wall mounted transformers, cosmetic parts or routine maintenance.
7. Adjustment of customer-operated controls and features as explained in the instruction guide.

WHEN SERVICE IS NEEDED DURING THE WARRANTY PERIOD:
1. Contact DPC using the "contact us" link instructions found at www.dpcav.com. Please provide the model name, serial number, purchase date, and specific details to the problem. If DPC determines that service is required, they will issue a Return Authorization (RA) number and they will request that you return the unit.
2. Pack the unit in its original packing materials (or suitable equivalent) with all accessories. Place this in a larger shipping carton and include sufficient filler to protect the unit from shipping damage. DPC is not responsible for shipping damage due to poorly packaged units.
3. Write the RA number on the outside of the shipping carton. Include inside the carton a note describing the problem, your name and STREET ADDRESS, the RA number, and a photocopy of the sales receipt.
4. Ship the instrument prepaid to **Digital Products Company,** Your unit will be returned to you using DPC's preferred shipping method.

WHEN SERVICE IS NEEDED AFTER THE WARRANTY PERIOD:
1. Try to resolve the problem by contacting DPC's technical support department. Please provide the model name, serial number, and a description of the problem. You must provide your fax number or e-mail address if you are outside the USA.
2. If the technical support agent determines the problem requires service then DPC will issue a RA number and provide payment and return shipping instructions.

DISCLAIMER

Digital Products Company, or their distributors, have no control over the installation and use of their products. As such, no liability may be assumed, nor will any liability be accepted, for any damages resulting from the use of this product. Under no circumstances will the buyer be entitled to consequential or incidental damages. Use at your own risk. By act of installing it, the buyer accepts all resulting liability.

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