



A subsidiary of ASSA Industries, LLC

# VBLASTER-2400 OWNER'S MANUAL

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## **SAFETY NOTICES**

- 1. THIS DEVICE IS FOR LICENSED USE ONLY**
- 2. THIS IS NOT AN INTRINSICALLY SAFE DEVICE. DO NOT TAKE INTO AREA WHERE INTRINSIC SAFETY IS REQUIRED. BODILY HARM MAY RESULT IF WARNING IS IGNORED.**
- 3. DO NOT OPERATE TRANSMITTER WITHOUT ANTENNA CONNECTED TO ANTENNA PORT. FAILURE TO DO SO WILL RESULT IN DAMAGE TO THE UNIT AND VOID THE WARRANTY.**
- 4. THE TRANSMITTER IS FCC APPROVED UNDER FCC ID: OPH-VBLAST2400. ANY CHANGES OR MISUSE OF THE PRODUCT MAY VOID THE USER'S AUTHORITY TO OPERATE THIS PRODUCT.**
- 5. THIS PRODUCT MUST BE PROFESSIONALLY INSTALLED. THE RADIO AND ITS ANTENNA IS REQUIRED TO BE MOUNTED AT LEAST 20 CM AWAY FROM THE HEAD/BODY OF THE USER AND 2CM AWAY FROM THE HANDS OF THE USER.**
- 6. *ONLY QUALIFIED TECHNICAL PERSONELL SHOULD PERFORM THE INSTALLATION OF THE TRANSMITTER MODULE . ANY CHANGES TO THE DESIGN AND/OR LOCATION OF THE MODULE AND ANTENNA WILL VOID THE FCC LICENSE.***
- 7. *ANTENNA INSTALLATION INSTRUCTIONS AND LOCATIONS ARE FOR THE PURPOSE OF SATISFYING FCC RF EXPOSURE COMPLIANCE REQUIREMENTS, AND ARE NOT OPTIONAL.***

## **PARTS LIST**

The VBLASTER-2400 Analog Video Transmission system comes complete with the following items:

1. VBLASTER-2400 transmitter with integrated antenna
2. VBLASTER-2400 portable receiver
3. High-gain antenna for receiver
4. Wall outlet power cord for receiver
5. Cigarette lighter adaptor for receiver
6. Cables

The video output of the receiver can be displayed on any NTSC compatible monitor or television receiver. In addition, the receiver output can be displayed on a personal computer (PC) or laptop through the purchase of a converter available through K&A Wireless, LLC.

### **Additional accessories available through K&A Wireless:**

1. Dipole antenna for receiver
2. 12-dB panel antenna for receiver
3. 5-dB vehicle-mounted antenna with magnetic base for receiver
4. 7-dB vehicle mounted antenna for receiver
5. 9-dB vehicle-mounted antenna for receiver
6. 11-dB vehicle mounted antenna for receiver
7. NTSC to PC converter to display receiver image on PC or laptop
8. NTSC compatible 5" monitors

## **PRODUCT DESCRIPTION**

The VBLASTER-2400 is a two-channel analog FM, video transmission system operating in the 2.4 GHz ISM band. The VBLASTER-2400 provides a cost effective solution to long-range transmission available for law enforcement or government applications. The ISM band is an unlicensed band allocated by the FCC, however, the transmitter is designated for PART 90 use and requires a license to be obtained by the end user. In addition to the enhanced performance, the VBLASTER-2400 provides a rudimentary security feature, which decreases the ability of unwanted parties from receiving and re-broadcasting the transmitted signal. This feature is built into the transmitter and receiver. Keep in mind that with the addition of the security feature, the receiver will not work with off-the-shelf transmitter systems.

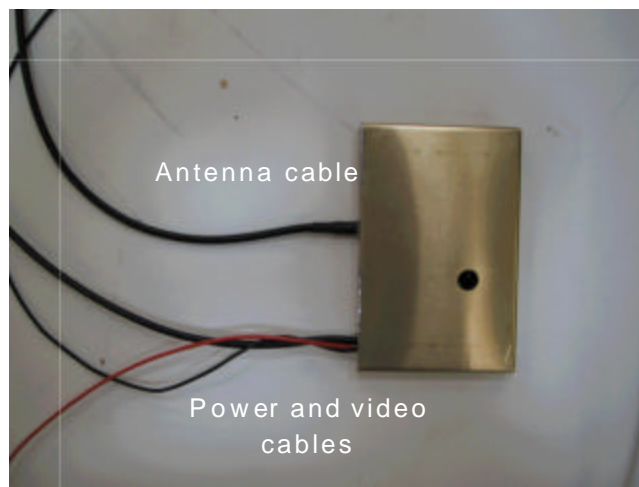
### **Transmitter**

The VBLASTER-2400 transmitter is shown in Figure 1. The transmitter is for integration inside a camera only. It has a 75 ohm coaxial cable for video and two wires for power with an integrated antenna. *The system must be installed to operate at a minimum of 20 cm away for the user's body and 2cm away from the hands.*

The transmitter is supplied with an integrated disk antenna to comply with FCC regulations and is not interchangeable. Any attempt to operate the system without an antenna or an antenna that is not manufacturer approved will result in damage to the system and will nullify any warranty.

### **TRANSMITTER OPERATION**

To turn the transmitter on, be sure that NTSC video is applied to the transmitter. Apply power to the power port and turn the camera on and insure that the camera is operational.



**Figure 1. VBLASTER-2400 transmitter in brass enclosure.**

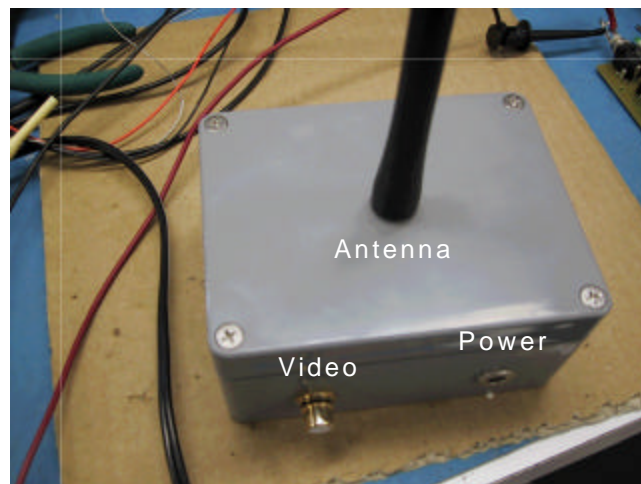
## Receiver

The VBLASTER-2400 receiver shown in Figure 2 is two-channel ready and is designed for portability. In order for the receiver to be fully operational, three connections must be made. The first is the video output port. This port is used to display the image on a monitor or television set. Any monitor that can accept NTSC (standard) video will display the image generated by the receiver. An adapter kit is available to display the image on a laptop or personal computer through K&A Wireless, LLC.

The second connection to be made on the receiver is the antenna port. This port is used to connect the antenna to the receiver. The connector that is mounted to the receiver is a standard SMA-type, BNC-type or TNC-type connector. This port, as shown in Figure 2, can also be used to connect various antennas to the receiver to increase performance of the system. A high-gain antenna is provided with the receiver units. To optimize performance, K&A Wireless has a number of additional optional high-gain antennas that are available for purchase. High-gain antennas are used to increase the sensitivity of the receiver by focusing the energy onto the receiver. In order to achieve the optimum performance, the antenna must be facing the transmitter.

The third port is the power port. The manufacturer of the VBLASTER-2400 supplies a cigarette lighter adapter and a wall adapter for use with the power port on the receiver unit. Manufacturer supplied wall transformers and cigarette lighter adapters have been tested to comply with the receiver. Any attempt to use power supplies that are not manufacturer approved will result in nullification of the warranty.

The receiver also includes a channel selector switch. Each receiver can accommodate up to two transmitters operating on two different channels. By scrolling through the channels, the images transmitted by the individual transmitters can be displayed.



**Figure 2. The portable receiver.**

## RECEIVER OPERATION

To turn the receiver on, first connect the video port to an NTSC compatible monitor. Second, connect the antenna port to an antenna. Finally, connect the power cable supplied to the receiver and connect to wall or an automobile cigarette lighter for on-site use. When the power is applied to the receiver, the power light should be illuminated. Switch the channel selector switch, shown in Figure 3, to alternate channels. With the transmitter turned on, alternate the switch until the image appears on the screen. **For optimum performance, the high-gain antenna supplied with the system should be pointed in the direction of the transmitter and raised as high off the ground as possible.**

To turn the receiver off, remove the power connection.

## **TURN-ON PROCEDURES**

### **Receiver**

1. Connect antenna to receiver antenna port
2. Connect video-output port to video-input on a monitor
3. Turn monitor on
4. Connect cigarette lighter adapter to cigarette lighter socket OR connect power port to wall adapter
5. Receiver is operational

Once the procedures are complete and the camera is on. If the transmitter is functioning, there will be a live picture on the screen. If a gray screen appears, insure that the video connection to the transmitter and to the receiver is correct and that the receiver is on. If snow/static appears on the screen, check for proper channel selection by alternating the switch. If the snow/static screen is still present, this is an indication that the transmitter or receiver may not be functioning properly. Please see troubleshooting chart on Page 11 of this manual. If the system still is not operating, please contact K&A Wireless for technical support.



## **SPECIFICATIONS**

### **Specifications for the VBLASTER-2400**

#### **General**

Operating Frequency Range	2450-2483MHz
Channel Selection Method	Toggle Switch
Video Format	NTSC, standard polarity
Modulation	Analog FM

#### **Transmitter**

Transmitter Antenna Connector	Integrated
Output Power	700mW (max.)
Input Voltage	6-15V
Typical Power Consumption (including power supply) ( $P_{out}=700mW$ )	525mA @ 6V

#### **Receiver**

Receiver Antenna Connector	50 ohm BNC or SMA
Input Voltage	8-20 Volts (12V typical)
Video Output	RCA
Power Connector	5x2.5mm power plug
Video Format	NTSC
Maximum number of channels	Two-channel ready

**Installation procedure for CUSTOMER'S NAME AND MODEL OF CAMERA**

The following diagram and description is the installation procedure of the integrated transmitter in the (CUSTOMER NAME AND MODEL OF CAMERA). The instructions on this page must be strictly adhered to. **Any unapproved changes to the manufacturing procedure will nullify any warranty and the ability of the end user of obtaining a license.** Any manufacturing changes must be approved in writing.

**INSERT PICTURE OF INTEGRATED TRANSMITTER AND CAMERA HERE**

**PHOTOS OF THE INSIDE OF THE CAMERA ARE CONFIDENTIAL AND ARE NOT PRESENTED HERE**

## TROUBLESHOOTING

