

MiniBox IV

IP Video Transmitter

- Model MBOX4-IP with WiFi
 - Model MBOX4-5000-XX with 5W Analog TX and DTMF Control Radio
 - Model MBOX-PD2-XX with 1W Digital TX and DTMF Control Radio
- Options include WiFi, Cellular Modem, VPN Router



COBHAM Avionics & Surveillance



how to contact DTC

For operator and troubleshooting information, customers are encouraged to refer to the details in this manual. For additional clarification or instruction, or to order parts, contact DTC.

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- DTC™
- Palladium™
- ArmorNet™
- SplitPIX™
- MiniPIX™
- DynaView™

Other product names used in this manual are the properties of their respective owners.

manual conventions



NOTE Describes special issues you should be aware of while using a particular function.



WARNING Calls out situations in which equipment could be damaged or a process could be incorrectly implemented, but in which operator safety is not a factor.



TIP Describes application hints.



CAUTION Electric shock hazard. Personal injury may result. Only trained and experienced technicians should proceed.

A

»»» **ANALOG** for users of Model MBOX4-5000-XX with 5W Analog TX

D

»»» **DIGITAL** for users of Model MBOX4-PD2-XX with 1W Digital TX

W

»»» **Wi-Fi** for users of Model with MBOX4-IP with WiFi

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QUICK START

A

WARNING

Avoid permanent damage to the camera!

D

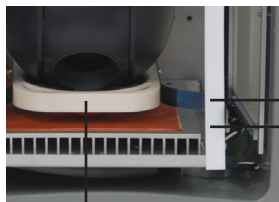
- Disengage the support bracket (down position) *before* turning the system ON.

W

- Engage the support bracket (up position) *before* moving or shipping the system.

To Disengage the support bracket: pull spring tabs out and move bracket down one position.

To Engage the support bracket: pull spring tabs out and move bracket up to highest position.



Support Bracket

Complete the following steps:

- Unpack the components from the shipping container.
- Mount the utility box in a temporary (service bench) location using one of the methods described in the Installation section.
- Disengage the support bracket (see warning).
- If your MiniBox-4 will be using a digital or analog video transmitter connect both transmitting antennas to maximize the coverage pattern or use one antenna to maximize gain in one direction only. To use both antennas, connect the splitter; to use one antenna, use the double-female adapter. (Factory-set to *both* antennas.)
- If your MiniBox-4 will be using a digital or analog video transmitter, set the channel selector in the VIDEO TX section of the control panel to the desired frequency for your Video Transmitter.
- If your MiniBox-4 will be using a DTMF control radio, set the channel selector in the DTMF RX section of the control panel to the same frequency as being used by your radio. The MiniBox-4 lists both DTMF and Transmitter pre-programmed frequencies on the Quick Start Card located on the inside of the door.



NOTE: The MiniBox-4 offers three viewing windows; front and two sides. You may choose to use one or all three. The unit is shipped with a Velcro® curtain covering the front window and inserts that block the side windows. Remove the curtain and/or inserts from the window(s) you plan to use. Always keep unused windows blocked when not in use to prevent light from entering the enclosure.



WARNING: Drop and shock sensitive equipment. Avoid permanent damage to your system. Do not ship this product without proper packaging. This unit must be boxed and protected with packaging materials before shipping.

7. If your MiniBox-4 will be using an analog video transmitter, select the transmitter power output setting with the HI/LOW PWR switch. The power switch will select either 5 Watts or 2 Watts.
8. If your MiniBox-4 will be using an analog video transmitter, select the (optional) encryption setting for your transmitter output with the ON/OFF SCR (scrambled) switch.
9. BEFORE PLUGGING IN OR CONNECTING POWER TO THE SYSTEM, BE SURE THE PUSH BUTTON ON/OFF SWITCH IS IN THE OFF (OUT) POSITION. Using the pre-wired 10-foot power cord provided, plug in to a suitable 110 VAC power source. HARD WIRING MUST BE INSTALLED BY A LICENSED ELECTRICAL CONTRACTOR, IN ACCORDANCE WITH NATIONAL AND LOCAL ELECTRICAL CODES. Connect incoming 110 VAC cable to the white connection strip located in the bottom of the utility box, respecting the color-coded wires (see table). Once the power is properly connected, push the Power button ON. (This is a push ON/push OFF switch.) The red LED glows. The camera executes a robotic self-test.
10. If your MiniBox-4 will be using a DTMF control radio, test the DTMF commands. Monitor the movements, video signal, and image quality with a setup monitor and DTMF controller. Refer to DTMF Control section.
11. If your MiniBox-4 will be using cellular or router IP or WiFi, test the web browser-based control. Refer to the WiFi or corresponding optional router or modem section.



NOTE: Make sure power cables do not block camera view.

QUICK START	
AC Power	
Color	Wire
Green	Ground
White	Neutral
Black	Line



CAUTION: LIVE VOLTAGE AT WIRING BLOCK. HARD WIRING MUST BE INSTALLED BY A LICENSED ELECTRICAL CONTRACTOR, IN ACCORDANCE WITH NATIONAL AND LOCAL ELECTRICAL CODES.



Shipping Case-Custom Foam

INTRODUCTION



MiniBox-4

Introduction

This unique and exceptionally versatile MiniBox™ IV from DTC Communications, a COBHAM Company, is a fourth generation covert video system. A complete product family includes three base packages plus an impressive array of communication options to meet your specific mission and agency requirements.

Each base model supports the optional wireless IP-based video surveillance capability. A modular design permits your choice, at time of order, of an appropriate wireless transmission option as well as the additional privacy of an industry recognized firewall router. The design offers you the flexibility to add (or change out) the wireless modem and router modules, up to one each, which extends the life of your investment!

The MiniBox IV RF base models uniquely provide PTZ control via IP Networks and/or (optional) DTMF radio comm links, all packaged in a single covert utility box. Furthermore, these models provide simultaneous video transmissions via (optional) RF and IP based connections. This comprehensive set of PTZ control and video transmission options will satisfy your local agent on the ground, as well as IP network remote viewing & control. They are backwards compatible with existing DTC equipment using DTMF controllers and analog & digital RF video receivers and thus provide the latest IP network connectivity to your surveillance solution set.

The digital Palladium™ models excel in tough urban RF environments with security (AES 128 encryption), narrow band transmission to handle crowded RF bandwidth, and diversity and forward error correction to meet the challenges of RF reflectance (multipath fading) and NLOS applications.



WARNING: Always verify that you are looking at live video. Network conditions, system resource demands, and other factors can cause the browser window to slow down or freeze. Time lag may vary.

Features

Environmentally conditioned utility box

- Three viewing ports
- Sony SNC-RX550 camera (or equivalent)
- Accommodates 1 WiFi card, 1 modem, & 1 router
- RF video link, analog & digital, models include:
 - DTMF control w/ Handheld radio
 - Directional antennas (2)
 - Analog 5W TX, L, S, S2 Bands
 - Digital PD2 TX, 1W, C (4400-5000), S2/3 (2200-2400), S-band 2400-2500 or L (1700-1850)

Control and integration supported via Milestone software

Accessories

- Universal Programmer CD
- Palladium Programmer CD
- DB9 M-F Cable
- Straight Adapter F-F, RJ45
- SMA F-F Adapter



MiniBox-4 Component Layout

MAIN COMPONENTS

- A)))
- D)))
- W)))



Models and Options

	MBOX4-IP	MBOX4-5000-XX	MBOX4-PD2-XX
Features			
DTMF Decoder	N/A	Included	Included
Analog RF TX	N/A	Included	N/A
Digital RF TX	N/A	N/A	Included
Dual TX Antennas	N/A	Included	Included
DTMF Radio	N/A	Included	Included
IP Server	Included	Included	Included

Options

- 1 3G modem (or 1 customer-supplied DSL or Cable modem)
- 1 Wi-Fi card (included with MBOX4-IP)
- 1 router
- Encryption (analog TX units only)



Control

DTMF tones can be used to pan and tilt the camera (transmitter units only), and to actuate many camera functions. DTC's low current R99WS control receiver has been integrated into the transmitter models for use with a two-way radio, included with the system.

VPN and WiFi units are controlled via an internet web browser user interface. The browser-based controls are described in this manual.

Video

Analog video transmission is accomplished by DTC's 2 Watt/5 Watt VMX series video transmitter. These transmitters feature ten user programmable channels, an efficient switching power supply, and low heat generation.

Digital video transmission is accomplished by DTC's Palladium video transmitter with an output power of 1 Watt. These transmitters feature COFDM and digital encryption for secure signals in non-line-of-sight environments.

IP video is viewed as either JPEG video or MPEG-4, depending on user selection.

Power

The MiniBox-4 operates on 110 VAC power. A power cord and a wiring block (for hard-wiring) has been provided.

Power Considerations

The MiniBox-4 can be powered by any standard 110 VAC, 15 amp branch circuit.

The **AC Power Reset** provides overcurrent protection for the Minibox-4 system.

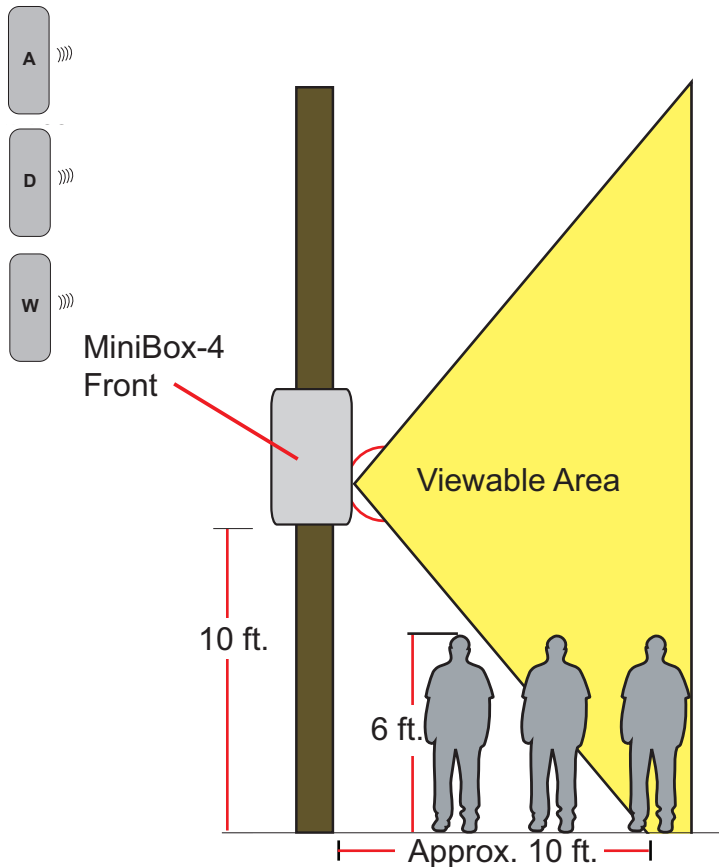
The **AC Breaker Reset** provides overcurrent protection for all accessories plugged-into the outlets provided inside the MiniBox-4.

Five amps is the total current allowed for all accessories plugged-into the four outlets.



BEFORE PLUGGING IN OR CONNECTING POWER TO THE SYSTEM, BE SURE THE PUSH BUTTON ON/OFF SWITCH IS IN THE OFF (OUT) POSITION. HARD WIRING MUST BE INSTALLED BY A LICENSED ELECTRICAL CONTRACTOR, IN ACCORDANCE WITH NATIONAL AND LOCAL ELECTRICAL CODES.

INSTALLATION



Site Survey

Before installing the MiniBox-4, you should conduct a physical survey of the site where the unit is to be installed. The purpose of the survey is to determine the proper height and position of the unit relative to the primary subject to be observed. You should also consider 110 VAC power availability (and cable or DSL availability if applicable).

Determining the optimum position for the MiniBox-4 involves several considerations including the focal length of the lens, the upper and lower limits of travel, and the distance between the mounting site and the object under surveillance.

For rule-of-thumb purposes, you might think of the viewable area this way for a reasonable approximation: At 10 feet high the blind spot on the ground will be approximately 10 feet inward and the viewable width will be approximately 10 feet out. At 20 feet high the blind spot on the ground will be approximately 20 feet inward and the viewable width will be approximately 20 feet out.

Items outside of the Utility Box's viewable limits will not be visible. See the example at left. A subject close to the bottom of the pole would not be visible to the Utility Box. You should set-up and test the Utility Box at an alternate site but under similar conditions in advance of your mission. This is the best way to ensure that you will know what to expect once you have deployed the Utility Box at the actual surveillance site.