

FCC Part 90

3-Watt Video/Audio

Transmitter

**FCC ID: P7F-FCCPART90-3W**

**Model: LEA-3-WATT**

Users Manual

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## Users Manual

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### Introduction

Congratulations on choosing Gamut Electronics LLC for providing your FCC Part 90 video transmitter needs. The Model LEA-3-WATT transmitter is a high performance video transmitter designed specifically for Law Enforcement Agencies.

### Application

The Model LEA-3-WATT video transmitter is specifically designed for the broadcast of standard NTSC signals to be received and processed by a broadcast video receiver, providing a wireless link for closed circuit television systems. The output power of the transmitter is almost 3 Watts. This transmitter has been designated for mobile applications.

This transmitter is type accepted for licensed use under FCC rules Part 90 for use in the 2450 to 2483.5 MHz frequency band. This transmitter has a fixed transmit frequency of 2470 MHz. Intended users include state and local agencies of law enforcement, fire departments or other public safety organizations or agencies.

This equipment is EMI/RFI sealed and is intended to be dust, water and weather resistant under normal environmental and operating conditions. Any attempt to open the unit or to expose the internal components, by other than a manufactures authorized technician, will violate the integrity of the sealing system and will invalidate the warranty.

### Cautions

A suitable 50-Ohm antenna or load should be connected to the RF output of the transmitter before applying DC input power.

Do not apply more than 14 VDC on the input power.

### Installation

Ideally, the transmitter should be located such that the space between the transmit and receive antennas is unobstructed. Physical, man-made and environmental structures or topographical features between the antenna will absorb or reflect transmitted signals; reducing or limiting the transmit range. Metal or metalized material in the antenna wave pattern will cause signals to be reflected. Other structural and physical obstructions, i.e., concrete, glass, trees, etc. will cause the transmitted signals to be attenuated by absorption to some degree.

Even though the transmitter is sealed and is water resistant it is not intended to be installed outdoors. This transmitter has been designated for mobile applications.

Do not place the transmitter antenna in close proximity to another transmitting antenna.

### Operation

The transmitter is provided with a 0 dBi dipole antenna connected to the external antenna connector. For other antenna options please contact Gamut Electronics LLC.

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Apply DC power to the transmitter using a battery or power supply. The transmitter has been designed to operate from +12 VDC  $\pm$  15%. When operated at +12 VDC, input current is about 1.5 Amp. Power sources should be stable, regulated and be capable of supplying slightly more than the required current. When connecting to a battery, the red alligator clip is positive (+) and the black alligator clip is negative (-).

The NTSC 1 V p-p video output of the camera is connected to the BNC (female) video input of the transmitter via standard 75-Ohm coaxial cable such as RG-59. Long lengths (>50 feet) of coaxial may begin to pick up interference so try to keep this length to a minimum.

The Audio input is designed to receive mic level type signal levels. These levels are very low at approximately 150 millivolts or less. Please contact the factory for setting the audio input to line level.

## FCC Information

This equipment has been tested and found to comply with the requirements for a FCC Part 90 transmitter in the 2450 – 2483.5 MHz band. If you do not already possess an FCC license that covers this same frequency band and RF power as this transmitter, you must apply on-line with the FCC at <http://www.fcc.gov> to receive approval to operate the transmitter. You will need to file for a Special Temporary Authority (STA) application in order to operate the transmitter within a few days. In order to operate the transmitter permanently you will need to file an FCC Form 601 on-line. For assistance in filing with the FCC please contact Gamut Electronics.

|                     |                              |
|---------------------|------------------------------|
| FCC ID:             | P7F-FCCPART90-3W             |
| GRANTEE CODE:       | P7F                          |
| MODEL:              | LEA-3-WATT                   |
| EMISSION DESG:      | 15M8F3W                      |
| RADIO SERVICE CODE: | PW (Public Safety)           |
| FRQUENCY:           | 2470 MHz                     |
| RF POWER:           | Just under 3 WATTS (34.7dBm) |

## RF Exposure Information

This transmitter complies with the controlled/uncontrolled exposure limits pursuant to FCC rule parts 1.1307, 1.1308, 1.1309, 1.1310, 1.1311 and 2.1091.

Pursuant to 47 CFR Part 2.1091(b), this device is not subject to routine environmental evaluation for RF exposure prior to equipment authorization or use. The RF power level is less than 3.0 Watts and operates at a frequency above 1.5 GHz.

Pursuant to 47 CFR Part 2.1091(b), this device satisfies the MPE Categorical Exclusion Requirements.

An analysis of the proposed radiation levels per criteria set forth in OST bulletin 65 have not revealed any hazards to humans.

## Service & Maintenance

The transmitter contains no user adjustments inside the unit, so the cover should never be removed. Any unit requiring service or repair must be returned to the manufacturer or the manufacturers authorized representative.

## Warranty

Gamut Electronics LLC warrants its devices and equipment for a period of one (1) year from date of purchase to be free from defects in workmanship or materials. This warranty is limited to replacing, repairing or issuing credit, at its option, any device which is returned during the warranty period.

## Contact

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<http://www.gamut-electronics.com>

## Specifications

### Radio Section

|                     |  |
|---------------------|--|
| RF Output power     | 2.5 Watts min., 2.95 Watts max.            |
| Frequency           | 2470 MHz                                   |
| Frequency stability | $\pm 0.005\%$                              |
| Output Impedance    | 50-Ohm                                     |
| VSWR                | 1.5:1min.                                  |
| Radiated bandwidth  | 15.8 MHz @ -25 dBc                         |
| Spurious radiation: | Less than -13 dBm @ $\geq 250\%$ bandwidth |

### Input Power

|                  |                                       |
|------------------|---------------------------------------|
| Input Voltage    | +12 VDC $\pm 15\%$ (10.8 to 13.8 VDC) |
| Input Current    | Less than 2.0 amps                    |
| Input Protection | Reverse polarity protected            |

### Video Section

|                    |                                      |
|--------------------|--------------------------------------|
| Input Level        | 1 V p-p per NTSC format              |
| Input Impedance    | 75 ohm unbalanced                    |
| Modulation Type    | Wideband FM                          |
| Sense              | Positive voltage increases frequency |
| Frequency Response | 6 Hz to 4 MHz                        |
| Sensitivity        | 2.0 MHz/V p-p                        |
| Pre-emphasis       | per EIA-250                          |

### Audio Section

|                    |   |
|--------------------|---|
| Sub-carrier        | 5.5 MHz                                   |
| Frequency response | 100 Hz to 5 KHz                           |
| Input level        | 150 millivolts for $\pm 12$ kHz deviation |
| Modulation         | Narrowband FM                             |
| Pre-emphasis       | 75 us Time Constant                       |

### Environmental

|             |               |
|-------------|---------------|
| Temperature | -30° to +50°C |
|-------------|---------------|

### Mechanical

|            |                           |
|------------|---------------------------|
| Dimensions | 7.87" L, 3.94" W, 2.36" H |
| Weight     | 24 oz.                    |

## Users Manual

Material  
Finish

Aluminum AL SI 12  
Tan powdercoat

### Connectors

RF  
Power (housing)  
Power (mate)  
Video  
Audio

SMA Female  
4-Pin Radio Shack (PN 274-002A)  
4-Pin Radio Shack (PN 274-001A)  
BNC Female  
RCA Female