



## OPERATIONS MANUAL

MiniLink® 5.8 GHz Standard and Modular  
Wireless Video/Audio Systems



**MicroTek Electronics, Inc.**  
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## **IMPORTANT SAFETY INFORMATION**

For your protection, please read and observe all safety instructions before operating these products. Keep this sheet and any additional instructions for future reference.

### **INSTALLATION & USE**

- **OBSERVE WARNINGS:** All warnings in the operating instructions should be carefully followed to avoid unnecessary damage to any of the products and to ensure the validity of its warranty.
- **WATER AND MOISTURE:** Do not use or install this equipment near water. Severe electrical shock, personal injury or damage to the equipment may result. The LNB receive antenna is weatherproof provided the supplied weatherproof F Connectors are used and tightened sufficiently. If one or more of the products, including the LNB, are installed in a harsh environment a NEMA rated enclosure is required.
- **HEAT:** Do not install the equipment near heat sources such as radiators, stoves, heat registers and other appliances that produce heat.
- **POWER SOURCE:** Connect the equipment to a power source only of the type described on the operating instructions or as marked on the equipment.
- **ATTACHMENTS:** Use only MicroTek recommended attachments.
- **WHEN NOT IN USE:** Unplug the power if the equipment is left unattended or unused for long periods of time or during lightning storms
- **REPLACEMENT PARTS:** Use only replacement parts specified by the manufacturer. Unauthorized substitutions may result in fire, electrical shock or other hazards.

### **FCC NOTICE**

This equipment has been tested and found to comply with the limits of a Class B device, pursuant to PART 15C of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult your dealer or an experienced radio/RF technician for help.

Any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

### **INDUSTRY CANADA NOTICE**

The term "IC:" before the certification/registration number only signifies that the Industry Canada technical specifications were met.

Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

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# QUICK START GUIDE

MicroTek Electronics, Inc. recommends that all equipment be bench tested before being installed onsite. This test will ensure all necessary equipment is functioning properly.

## TRANSMITTER SETUP

1. Remove Transmitter from box, select frequency and audio mode. (Factory set to channel 10)
2. Mount the transmitter at the desired transmit location. Position transmitter for desired polarity using rear label arrow as a reference, transmitter and receiver polarity must match one another.
3. Connect power, audio and video inputs to transmitter.

## LNB SETUP

1. Remove LNB from box and mount at the desired receive location in line of site with the transmitter. Position LNB for desired polarity using rear label arrow as a reference, transmitter and LNB polarity must match one another. The LNB is weatherproof and does not require additional housing unless mounted in a harsh environment.
2. Connect cable to the LNB. (Use only RG 6 coaxial cable with the supplied weatherproof "F" connectors to connect Receiver and LNB. Cable length should be a minimum of 10 feet and a maximum of 100 feet.)

**Note:** If an 18" Parabolic Dish Antenna is used with the system (ML58-1, ML58-1M, ML58-1E or ML58-1ME), assemble the dish and mount the LNB in the dish as described in the dish installation instructions. Position the dish with LNB and connect the cable to the LNB as described above. It is recommended that the dish be mounted with at least fifteen feet of clearance from ground level for one-mile range and directed in a downward angle for optimal picture.

## RECEIVER SETUP

1. Remove Receiver from box and position it at the desired receive location. The unit is designed to be placed in the head end room along with the DVR and monitoring devices and will not require an environmental housing if kept inside as in most cases.
2. Connect Quad-shielded RG 6 cable from the LNB to the antenna port F-Connector on the back panel of the receiver.
3. Connect the audio and video outputs to a DVR, monitor or other device.
4. Connect the power using the included 12 VDC 500 mA power supply.

**WARNING: MAKE ALL COAX CONNECTIONS WHILE THE RECEIVER IS POWERED DOWN. CONNECTIONS MADE WHILE THE RECEIVER IS ON COULD CAUSE DAMAGE TO THE UNIT.**

**Trouble Shooting:** If video does not appear on the screen or you are having other operational difficulties, please visit the trouble shooting section on page 15 of the operations manual or contact MicroTek toll free Monday through Friday, 8-5pm PST at (888) 366-4276 for technical assistance.

## **PRE-INSTALLATION REMINDERS**

*The information on the Quick Start Guide is intended for ease of use and application, the following reminders will help to ensure your satisfaction with MicroTek products and service.*

1. Read through this manual before bench testing and installation
2. Perform a bench test incorporating all components of the application
3. Install your MiniLink 5.8 GHz System
4. Toll-free technical assistance is available Monday through Friday (8-5pm PST) at 888-366-4276

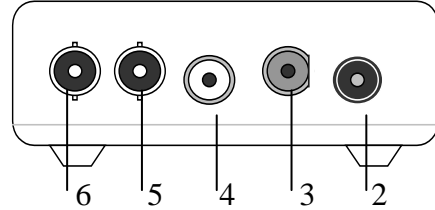
## **MICROTEK ELECTRONICS RETURN POLICY**

The MiniLink 5.8 GHz Standard and Modular Wireless Video/Audio Systems come with a 2-year limited warranty for repair or replacement (see the last page for warranty information). In addition to the 2-year warranty, all products can be returned within the first thirty (30) days for credit. Products may be returned within 30-days of shipment provided the products are in like new condition and in the original packaging. Contact your MicroTek Electronics dealer or distributor to obtain an authorization to return the merchandise for credit.

# DESCRIPTIONS AND SPECIFICATIONS

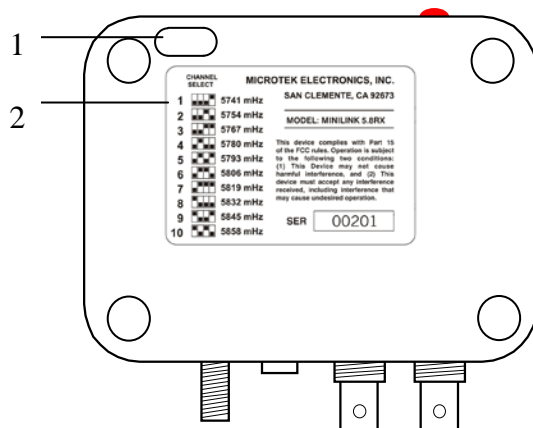
## MINILINK® 5.8 RECEIVER DESCRIPTION

### FRONT AND REAR VIEWS



1. LED INDICATOR  
Indicates power is on when illuminated
2. POWER INPUT  
12VDC 440 mA. Power supply included.
3. RF INPUT  
“F” connector, connection to LNB via RG6 coaxial cable.
4. AUDIO OUTPUT  
Mono audio output to video monitor or DVR, use either right or left channel
5. VIDEO OUT  
Supply filtered, clamped video output to video monitor or VCR.
6. VIDEO OUT  
Supply filtered, clamped video output to video monitor or VCR.

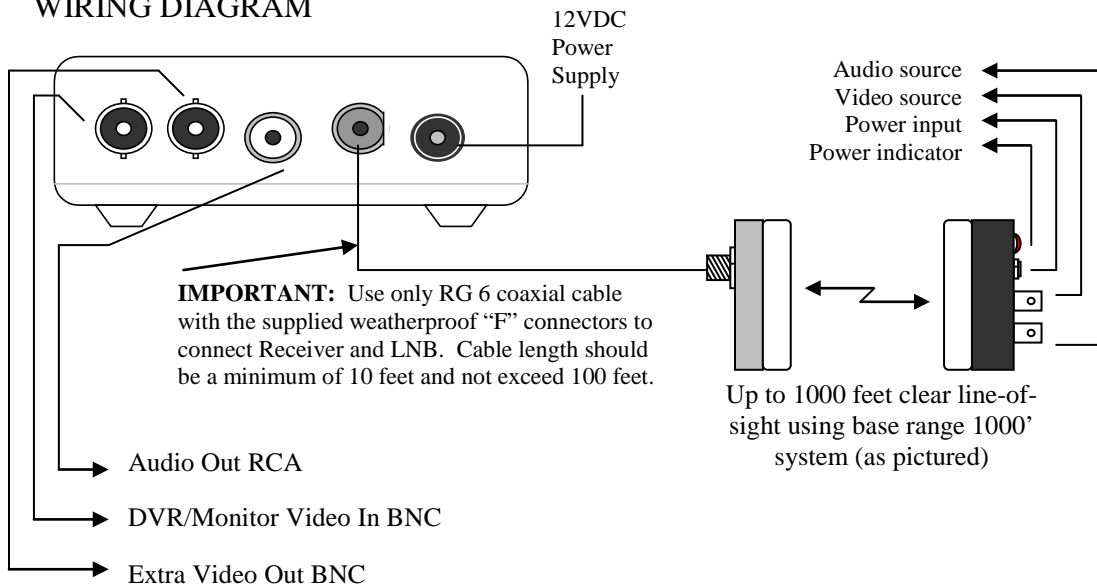
### BOTTOM VIEW



1. CHANNEL SELECT DIPSWITCH  
Dip switch for selection channels 1 – 10. (Receiver and transmitter channels must match). The Receiver is factory set to Channel 10
2. CHANNEL SELECT LABEL  
Shows dip switch settings for channels 1 – 10.

## RECEIVER DESCRIPTION (Continued)

### WIRING DIAGRAM



### E. CABLING SPECIFICATIONS

NOTE: Coaxial cables are not included in a MiniLink wireless system. Supplied for the installation are two weatherproof F-Connectors which are to be crimped onto the RG 6 coaxial cable.

- RG 59 Coaxial Cable: Up to 500 feet (Use between Receiver and DVR/Monitor as well on transmit end: between Camera and Transmitter)
- RG 6 Coaxial Cable: Up to 100 feet to be used between LNB receive antenna typically mounted outdoors and Receiver located in the head end room.
- Given wide open line-of-sight and no 5 GHz interfering sources in a particular environment, a MiniLink wireless system will transmit and receive the video quality that is coming from the camera or over the cables connected to that wireless system. Cables in poor condition or even insufficient crimping could result in undesired operation. All crimps or other connections must be made using industry standard tools. Also verify that all cables being used are free of cuts, gouges, kinks, or bends that can have an effect on your video quality. A hardwire set-up (without the wireless link) on a bench test will help to verify the above suggestions.
- Power cables should be kept at their normal stock length to avoid problems that may arise which could be outside of MicroTek's technical support field of expertise. However, if power cables must be extended for a particular application, MicroTek does not suggest any wire lighter than 18-gauge in order to avoid voltage loss.

# RECEIVER OPERATION

## A. RECEIVER SET UP

### 1. LOCATON











The Receiver is designed to be placed on a flat surface for stability. The Receiver is not weatherproof and should be placed indoors or in an environmental enclosure if used outdoors or in a harsh environment.

### 2. POWER

The Receiver is powered by a 10-14.5 VDC power supply connected to the Power In connector on the rear of the case, incorporating internal reverse voltage protection. The Receiver itself will draw 220 mA of power and the LNB, which gets its power from the Receiver, uses 220 mA.

### 3. CHANNEL SELECT

Channel selection is accomplished by programming of the 4-position dipswitch located at the rear panel. Match the dipswitches to the setting on the label for the desired channel (Any numbers visible on the switch itself are not used. The white squares indicate the switch location).

CHANNEL SELECT		
1		5741 mHz
2		5754 mHz
3		5767 mHz
4		5780 mHz
5		5793 mHz
6		5806 mHz
7		5819 mHz
8		5832 mHz
9		5845 mHz
10		5858 mHz

NOTE: Dipswitch configurations for each channel can vary between the transmitter and receiver. Match the dipswitch positions on each individual unit in use with the drawing layout as pictured on each unit for the desired frequency channel.

### 4. ORDER OF SETUP AND OPERATION

- Select Frequency (Factory set to channel 10)
- Connect Power, Video and Audio outputs to receiver.

**WARNING: TO PREVENT DAMAGE TO THE RECEIVER, CONNECT THE RECEIVER TO THE LNB BEFORE APPLYING POWER TO THE RECEIVER.**

## B. MAINTENANCE

Your MicroTek Electronics MiniLink product is an example of superior design and craftsmanship. The following suggestions will help to ensure maximum operational life:

- Keep the product dry. If it does get wet, wipe it dry immediately. Liquids may contain minerals that corrode electronic circuits.
- Use the system only within the environmental specifications indicated. High temperatures can shorten the life of electronic devices and melt plastic parts. Excessive mechanical shock can damage the case, connectors or internal circuit board.

# RECEIVER SPECIFICATIONS

## MINILINK® 5.8 RECEIVER

### RF SECTION

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Input Frequency Range	971 MHz to 1088 MHz
Frequency Control	Synthesized PLL
Input Impedance	75 Ohms
IF Bandwidth	15 MHz
Static Threshold	6 dB (Typical)
Image Rejection	40 dB (Typical)

### VIDEO SECTION

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Format	NTSC/PAL
DE-Emphasis	CCIR 405-1
Frequency Response (3 dB)	50 Hz to 3.8 MHz
Output Level	1.0 V P-P +/- 5%
Output Impedance	75 Ohms

### AUDIO SECTION

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Sub-carrier Frequency	6.0 MHz
Bandwidth	150 KHz
Frequency Response (3 dB)	50 Hz to 18 KHz
Output Impedance	10 K Ohms (unbalanced)

### MECHANICAL

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Size	4.69" w x 4.38" d x 1.44" h
Weight	16 oz

### POWER

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Power Requirements	10-14.5 VDC @ 440 mA Internally fused, reverse voltage protected (LNB power supplied by Receiver)
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### ENVIRONMENTAL

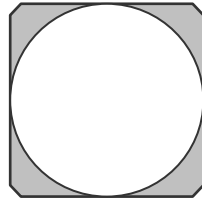
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Humidity	95% non-condensing
Operating Temperature	-20F to +180F case temperature

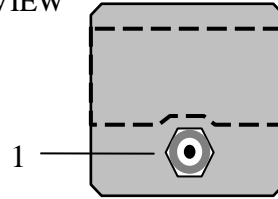
\*For product improvement, design and specifications are subject to change without notice.

## MINILINK® 5.8 LNB DESCRIPTION, OPERATION & SPECIFICATIONS

### A. FRONT VIEW



### B. REAR VIEW



#### 1. RF OUTPUT

Coaxial cable output to the receiver (971 – 1088 MHz). Power supplied to the LNB from receiver through this cable at 9-16 VDC.

**IMPORTANT:** Use only RG 6 coaxial cable with the supplied waterproof “F” connectors to connect Receiver and LNB. Cable lengths should be a minimum of 10 feet and a maximum of 100 feet.

**WARNING: MAKE ALL COAX CONNECTIONS WHILE THE RECEIVER IS POWERED DOWN. CONNECTIONS MADE WHILE THE RECEIVER IS ON COULD CAUSE DAMAGE TO THE UNIT.**

## LNB OPERATION

### A. LOCATION / MOUNTING

Since the LNB is weatherproof, it can be wall or pole mounted using the equipment supplied with environmental systems only. (MiniLink 5.8 model numbers with an “E” at the end are environmental systems.) Contact MicroTek if you do not have wall/pole mounting hardware.

### B. MAINTENANCE

Your MicroTek Electronics product is an example of superior design and craftsmanship. Use the system only within the environmental specifications indicated. High temperatures can shorten the life of electronic devices and melt plastic parts. Excessive mechanical shock can damage the case, connectors or internal circuit board. *Use the supplied weatherproof F-Connectors and crimp onto the Quad-shielded RG 6 coaxial cable to ensure weatherproof mounting.*

## LNB SPECIFICATIONS

### RF SECTION

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LO Frequency	4770 MHz
IF Output	971 to 1088 MHz

### MECHANICAL

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Dimensions	2.75” x 2.75” x 1.5”
Weight	7.7 oz
Connections	Waterproof “F” connectors (2 included with system)
Cable (see note below)	RG 6 Quad-shield Coaxial Cable (10 ft minimum, 100 ft maximum)

### POWER

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Power Requirements	9-16 VDC @ 220 mA (LNB power supplied by Receiver)
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### ENVIRONMENTAL

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Humidity	100% non-condensing
Operating Temperature	-20F to +180F

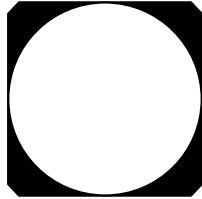
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## MINILINK® 5.8 TRANSMITTER – STANDARD VS. MODULAR

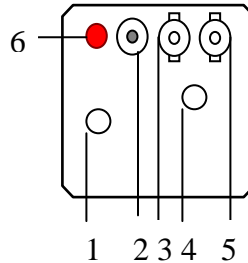
MiniLink 5.8 GHz transmitters are available in two transmit configurations. A directional transmit path is ideal for frequency isolation and fixed point-to-point applications, whereas omni-directional paths may be ideal for situations where orientation of the transmitter is not fixed and transmit locations change frequently.

### DIRECTIONAL TRANSMITTER (STANDARD STYLE)

#### A. FRONT VIEW



#### B. REAR VIEW



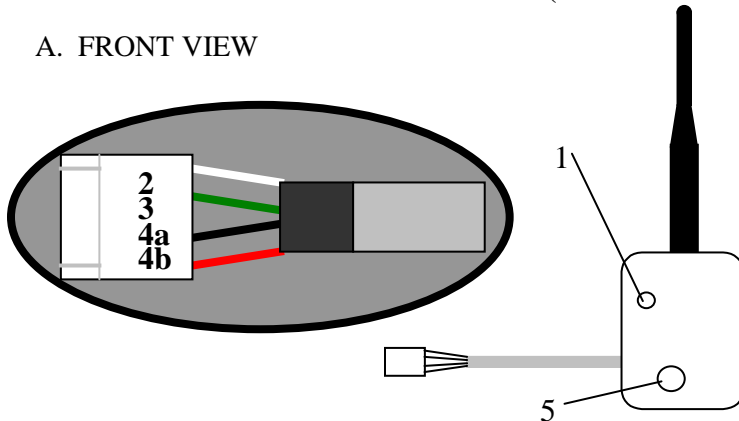
1		5741 mHz
2		5754 mHz
3		5767 mHz
4		5780 mHz
5		5793 mHz
6		5806 mHz
7		5819 mHz
8		5832 mHz
9		5845 mHz
10		5858 mHz

Match the dipswitches to the setting on the label for the desired channel. Any numbers visible on the switch itself are not used. The white squares indicate the switch location.

1. CHANNEL SELECT – 4-pin Dip switch
2. POWER IN – Connect to power supply, connector 2.1 x 5.5 mm.
3. VIDEO IN – Video input from camera source, BNC coaxial connection.
4. AUDIO MODE SELECT – Select audio source, line level or microphone, +5 V electret supply.
5. AUDIO IN – Audio input from audio source, BNC coaxial connection.
6. LED – Indicates if unit has power applied.

### OMNI-DIRECTIONAL TRANSMITTER (MODULAR STYLE)

#### A. FRONT VIEW



1. AUDIO MODE SELECT – Select audio source, line level or microphone, +5 V electret supply
2. VIDEO IN – Video input from camera source, 4 inch 24 AWG white wire.
3. AUDIO IN – Audio input from audio source, 4 inch 24 AWG green wire.
4. POWER IN
  - a. Ground – 4 inch 24 AWG black wire connected to 4-pin plug attached to power supply.
  - b. Power – Red wire connected to 4 pin plug attached to power supply
5. CHANNEL SELECT – 4-position dipswitch.

## **TRANSMITTER OPERATION**

### **A. HOW TO SETUP THE TRANSMITTER**

#### **1. LOCATION / MOUNTING**

Mount the Transmitter against a flat surface for support and stability. It is not weatherproof and should be mounted in an environmental enclosure if used outdoors or in a harsh environment.

#### **2. POWER**

The MiniLink is powered by a 6-14.5 VDC power supply connected to the Power In connector on the rear of the case of the directional transmitter or the 4 pin plug of the omni-directional transmitter. The transmitter incorporates internal reverse voltage protection.

#### **3. CHANNEL SELECT**

Channel selection is accomplished by programming the 4-position dipswitch located at the rear panel of the directional transmitter and on the front of the omni-directional transmitter. Switch and frequency settings are listed on the label below the switch access.

#### **4. AUDIO SELECT**

Audio mode selection is enabled by programming the 2-position dipswitch located at the rear panel of the directional transmitter and on the front of the omni-directional transmitter. Switch settings are listed on the label adjacent to the switch access.

The Audio In connector can be used for either line or microphone input levels. If an electret microphone is used, the second switch position can be selected to supply +5 V to the electret element. The +5V microphone supply should be disabled for dynamic microphone or line input uses.

#### **5. ORDER OF SETUP AND OPERATION**

- Select Frequency and Audio mode. (Factory set to channel 10)
- Connect Power, Video and Audio inputs to transmitter.
- Position transmitter for desired polarity using rear label arrow as a reference, transmitter and receiver polarity must match one another.

### **A. MAINTENANCE**

Your MicroTek Electronics product is an example of superior design and craftsmanship. Use the system only within the environmental specifications indicated. High temperatures can shorten the life of electronic devices and melt plastic parts. Excessive mechanical shock can damage to the case, connectors or internal circuit board and void the 2-year warranty.

## TRANSMITTER SPECIFICATIONS

### MINILINK® 5.8 TRANSMITTER

#### RF SECTION

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Power Output	50 mV/Meter @ 3 Meters
Transmitting Frequency	5741, 5754, 5767, 5780, 5793, 5806, 5819, 5832, 5845, 5858 MHz
FCC ID (Directional Transmitter)	JRR-PS37-4
FCC ID (Omni-directional Transmitter)	JRR-PHL4-13
IC: (Directional Transmitter)	4887A-PS37
IC: (Omni-directional Transmitter)	4887A-PHL4

#### VIDEO SECTION

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Color Format	NTSC
Pre-emphasis	CCIR 405-1, 525 lines
Input Level	1.0 V P-P @ 75 Ohms

#### AUDIO SECTION

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Input Level	Line Level 0.5 V P-P @ 10 K Ohms Microphone Level 50 mV P-P Powered Input +5 V @ 25mA
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#### MECHANICAL - DIRECTIONAL

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Dimensions	2.75" x 2.75" x 1.5"
Weight	9.04 oz
Connections	Power supply, video BNC, Audio BNC

#### MECHANICAL – OMNI DIRECTIONAL

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Dimensions	1.5" x 2.4" x 0.43" (w/out antenna)
Weight	1.8 oz
Connections	Power, video, audio and ground on 4 pin plug. (Video, audio and ground connections are 4 inch 24 AWG leads)

#### POWER

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Power Requirements	6-14.5 VDC @ 100 mA Reverse voltage protected
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#### ENVIRONMENTAL

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Humidity	95% non-condensing
Operating Temperature	-20F to +180F

\*For product improvement, design and specifications are subject to change without notice.

#### SYSTEM RANGES

Transmitter to 4" LNB	1000 feet (Clear line of sight)
Transmitter to 6" x 6" Patch LNB	2500 feet (Clear line of sight)
Transmitter to 18" Parabolic Dish	1 Mile (Clear line of sight)

## TROUBLE SHOOTING

PROBLEM	SUGGESTIONS
No picture or sound, no indicator lights	<ol style="list-style-type: none"> <li>1. NO POWER – make certain that all equipment is plugged into the proper power source.</li> <li>2. Check power supply to make sure it is outputting the required voltage.</li> <li>3. Verify all non-weatherproof units are protected from moisture.</li> </ol>
No Picture or sound but indicator lights are on	<ol style="list-style-type: none"> <li>1. Verify the transmitter is aimed at the LNB properly. You should have clear, wide-open line of sight between the transmitter and LNB.</li> <li>2. Poor cable connections. Check all cable connections and connectors.</li> </ol>
Horizontal bars or lines, “jumpy” picture, video loss in DVR	<ol style="list-style-type: none"> <li>1. Receiver antenna may not be aligned with the transmitter. Readjust antenna to match polarity.</li> <li>2. Video channel is improperly set, go by each units’ label.</li> <li>3. Possible interference on 5.8 GHz. Change channels and use the higher frequencies if possible.</li> <li>4. Check video coming out of the “video out” of the receiver directly into an analog monitor.</li> <li>5. Poor connections. Check all coaxial connections and make sure Quad-shielded RG 6 is used between the receiver and LNB.</li> <li>6. Verify all non-weatherproof units are protected from moisture</li> </ol>
“Snowy”, “grainy” picture or weak signal	<ol style="list-style-type: none"> <li>1. Check line of sight or mounting heights. It is recommended that the antennas be mounted at least 15 feet above ground level.</li> <li>2. Verify that there is a clear wide open path with no obstructions that can block the signal and result in poor video quality.</li> <li>3. Verify that the picture coming out the camera is clear video.</li> <li>4. If using the 1-mile system, re-angle your dish antenna so that is aiming downward to avoid overshooting the transmitter.</li> </ol>

## WARRANTY INFORMATION

MicroTek Electronics extends the following LIMITED WARRANTY to the original owner/purchaser of this product as follows:

- Two years from the date of initial sale for all wireless products.
  - One year from the date of initial sale for all encoder and decoder products.
- 1) If, within the specified warranty period, this product, or any part or portion thereof, shall prove upon examination by MICROTEK, to be defective in material or workmanship, MICROTEK will repair or replace such part or portion at MICROTEK's option. The warranty period on the repaired or replaced part or portion of this product shall be limited to the unexpired term of the original warranty. The buyer shall be responsible for all shipping and transportation of the product to MICROTEK for any performance under this warranty.
  - 2) Conditions and Exceptions:
    - a) Any accident to this product, any misuse or abuse, alternation, use in modified form, or any attempt to repair this product shall void this warranty. These conditions to the warranty include, but are not limited to, incorrect power connections, physical damage due to mechanical shock, exposure to moisture, and circuit modification.
    - b) SHOULD THIS PRODUCT PROVE DEFECTIVE FOLLOWING PURCHASE, THE BUYER, NOT THE MANUFACTURER, DISTRIBUTOR, OR RETAILER, ASSUMES THE ENTIRE COST OF ALL SERVICING OR REPAIR, EXCEPT AS OTHERWISE PROVIDED BY THE TERMS OF THIS WARRANTY.
    - c) FOR BREACH OF ANY WRITTEN OR IMPLIED WARRANTY ON THIS PRODUCT, THE BUYER IS LIMITED TO THE FOLLOWING DAMAGES. (1) THE COST OF LABOR TO REPAIR OR REPLACE DEFECTIVE PARTS OR PORTIONS OF THIS PRODUCT, AND (2) THE COST OF THE REPAIRED OR REPLACE PARTS OR PORTIONS OF THIS PRODUCT.
    - d) NO OTHER EXPRESSED OR IMPLIED WARRANTIES HAVE BEEN MADE OR WILL BE MADE ON BEHALF OF MICROTEK WITH RESPECT TO THE SALE, REPAIR, INSTALLATION, OPERATION, OR REPLACEMENT OF THIS PRODUCT. MICROTEK DISCLAIMS ANY IMPLIED WARRANTY OF MERCHANTABILITY OF THIS PRODUCT OR ITS FITNESS FOR ANY PURPOSE, AND THE BUYER AGREES THAT THIS PRODUCT IS SOLD "AS IS" AND THAT THE ENTIRE RISK OF QUALITY AND PERFORMANCE OF THIS PRODUCT IS WITH THE BUYER, EXCEPT AS OTHERWISE PROVIDED BY THE TERMS OF THIS WARRANTY.
    - e) Some states/jurisdictions do not allow exclusions or limitations of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the above exclusions or limitations may not apply to you.
    - f) If you do not wish to be bound by any of the provisions in this warranty, please return the product(s) immediately.
  - 3) Contact your dealer regarding return authorizations for out of warranty repairs and any further product information.

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