

# Vu**IQ**

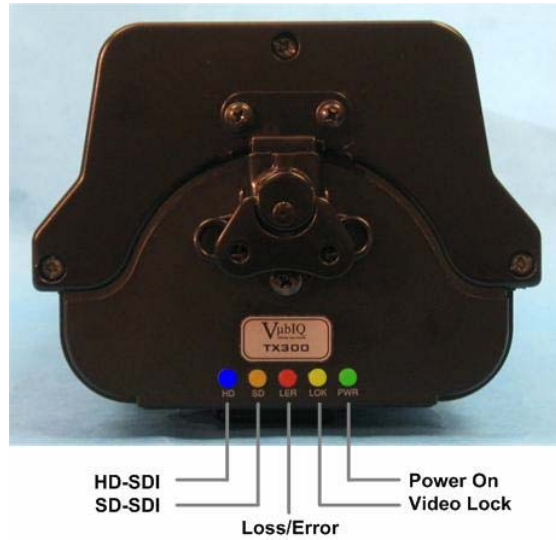


## User Guide

### VuLink VL300

## Introduction

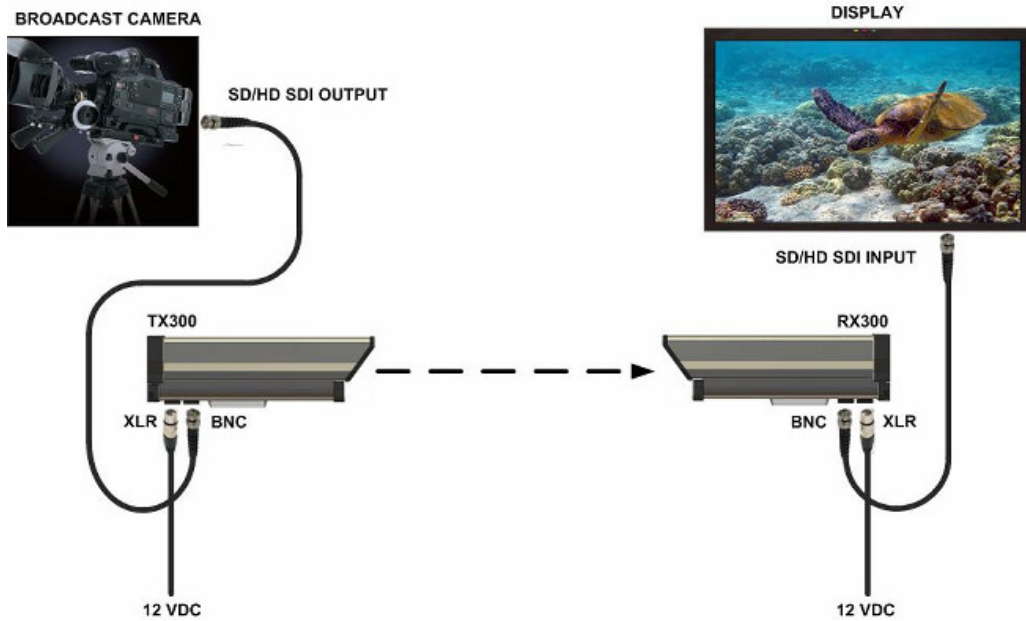
The VuLink VL300 is a point-to-point wireless link that transports SD/HD SDI and DVB ASI digital video signals from the transmitter unit (TX300) to the receiver unit (RX300). Both the TX300 and the RX300 have the same functional LED indicators located on the rear panel (Figure 1). SDI video input to the TX300 and video output from the RX300 are connected via a standard BNC connector on the bottom of the enclosures; 12VDC power is connected via a standard 4-pin XLR connector adjacent to the BNC connector (Figure 2). Pin 1 is negative (-) and pin 4 is positive (+) 12VDC for the 4-pin XLR connector.



**Figure 1. Rear Panel LED Indicators**



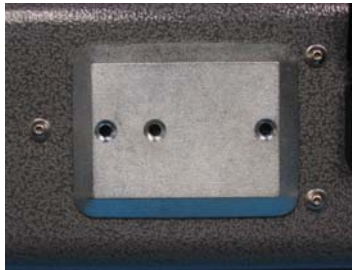
**Figure 2. Video and Power Connectors on Bottom of Enclosure**









**Figure 3. Typical Link Setup**









## Setup

1. The most efficient method for setting up the TX300 and RX300 is to have one person at each end of the link. Mount the TX300 and RX300 units so that the front of each unit is pointed towards the other with no obstructions between them (line of sight). Figure 3 shows a typical link setup.
2. The TX300 and RX300 have multiple ¼-20 threaded holes in the bottom mounting plate for mounting to either a wall/pole mount or a tripod. Figure 4 shows the mounting plate hole locations.



**Figure 4. Bottom Mounting Plate**

3. Connect a 12VDC source or the provided AC power supply to each unit (12VDC is supplied via the 4-pin XLR connector). With no video connected to the transmitter, the green **PWR**  indicator and red **LER**  indicator will be illuminated.
4. Connect a video cable with SD-SDI, HD-SDI or DVB-ASI from a video source to the TX300 BNC connector (be sure the BNC cable connector is securely seated into the recessed TX300 connector). The TX300 red **LER**  indicator will go out, and either the orange **SD**  or blue **HD**  indicator will illuminate depending on the input video source format. The yellow **LOK**  indicator will also illuminate.

5. Connect a video cable from the RX300 receiver BNC connector to an SDI video display and/or waveform monitor (be sure the BNC cable connector is securely seated into the recessed RX300 connector). In the event that a professional SDI display is not available, an SDI to HDMI converter (such as the AJA Hi5) can be used to display the HD video on an HDMI compatible type TV.
6. Adjust the pointing angle by visually sighting at each end of the link until the RX300 blue **HD**  or orange **SD**  (depending upon video format) is illuminated. The yellow **LOK**  indicator will also illuminate. While adjusting the pointing angle, minimize the flash rate of the RX300 receiver red **LER**  indicator. The red **LER**  indicator shows SMPTE CRC (cyclic redundancy check) errors in the video data stream. With minor readjustment of the pointing angle, the **LER**  indicator flash rate should be minimized or be completely off.
7. The RX300 performs automatic gain control (AGC) to minimize errors. *AGC requires no action by the user.* AGC activity is indicated by blinking of the green **PWR**  indicator on the RX300. A solid green **PWR**  indicator indicates that an error-free setting has been found.

NOTE: In the event that the link range or environment prevents an error-free condition, a high quality video signal can still be achieved even with some CRC errors occurring over the link since most result from random chroma/luma pixel errors. In specific applications where extended range or operating in a difficult environment is required the acceptability of the video quality may be more important than achieving a zero CRC error rate. Usage in this mode may require disabling of the AGC to prevent repeated searching for an error-free setting.<sup>1</sup>

8. Once the correct pointing angles are found, the units will transport video reliably.

## TX Attenuation Adjustment

There may be some physical environments (such as highly reflective surfaces, or over very short ranges) where it becomes necessary to adjust the transmit attenuation setting. The VuLink TX300 transmitter has an internal attenuation setting switch (16-position, pc-board mounted) on their baseband printed circuit board. In order to access the attenuation switch, the hinged enclosure top cover must be unlatched at the rear. Figure 5 shows the latch at the rear of the enclosure.



a (Rear Latch Closed)

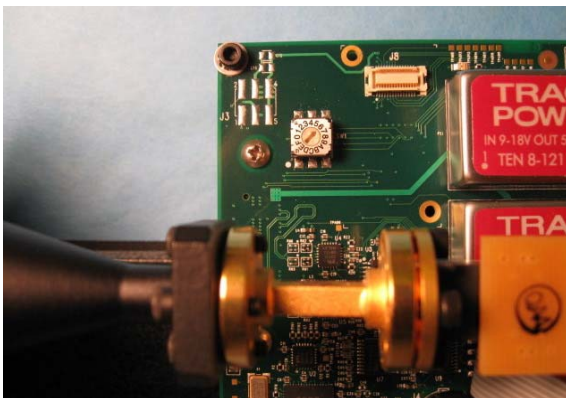


b (Rear Latch Open)

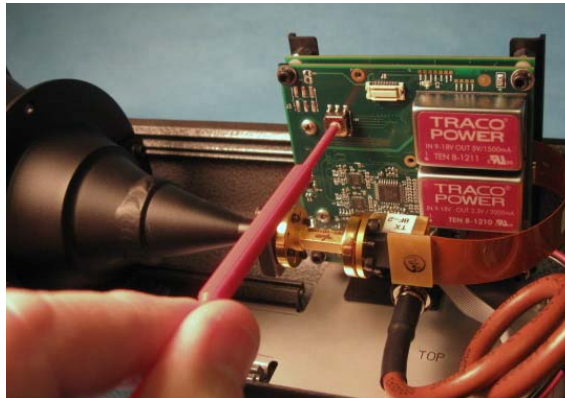
Figure 5a & b

<sup>1</sup> See Appendix A for disabling AGC in the RX300

Rotate the latch handle  $\frac{1}{4}$  turn counterclockwise and tilt the latch arm back slightly to release the latch from the keeper on the cover (Figure 5). The entire top cover can then be lifted and rotated up from the rear (the cover hinge is at the front of the unit). Figure 6a shows the location of the attenuation adjustment switch.



**a (Attenuation Switch on PC Board)**



**b (Setting the Switch)**

**Figure 6a & b**

The nominal attenuation setting for the TX300 is 5 to 7.

For very short ranges (5 to 10 meters), the attenuation setting should be set to **E**.

The switch can be adjusted using the supplied adjustment tool (Figure 6b). For shorter distances, the switch can be increased in value to obtain a low error rate on the receiver's **LER** indicator. The switch is a hexadecimal type labeled 0 through F with higher settings indicating more attenuation (i.e. less gain).

## Technical Support

Vubiq is a global leader in millimeter wave and digital video technology offering products in the broadcast, telecommunications, medical, security and government markets. If you have any other technical questions or inquires not addressed in this User Guide, please contact Vubiq via phone or email.

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# Specifications

## Video Signaling

- SMPTE 259M (270 Mb/s)
- SMPTE 292M (1.485 Gb/s, 1.4835 Gb/s)
- DVB-ASI (270 Mb/s)

## General

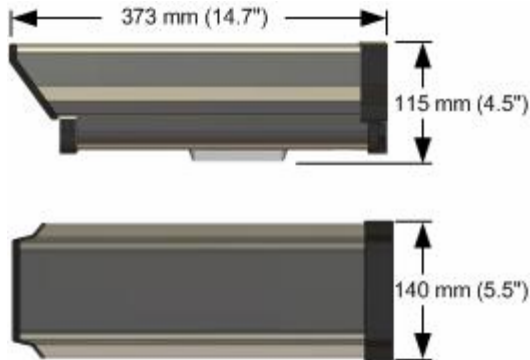
- Power Requirements 11-16 VDC, 1 A; 4-pin XLR male
- Carrier Frequency 60.5 GHz
- Channel Bandwidth 1.5 GHz
- Antenna Beamwidth 3.5 degrees
- Polarization Vertical (Horizontal polarization also available)
- Size 373 x 147 x 115 mm (14.7 x 5.8 x 4.5")
- Weight 1.8 kg (4 pounds) each unit
- Temperature -20 to 65 C (-4 to 150 F)
- Mount ¼-20 thread for tripod or wall mount

## Transmitter (TX300)

- Video input SDI 75 ohm BNC
- RF Output Power 10 mW

## Receiver (RX300)

- Video Output SDI 75 ohm BNC
- Noise Figure 6 dB



NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Any changes or modifications to this device not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC RF exposure guidelines require that this device be installed in such that a minimum separation distance of 25 cm between the device and any persons is maintained when used in a general population / uncontrolled environment. Separation distances less than 25 cm may result an RF exposure level that exceeds the FCC guidelines

## Appendix A

### RX300 AGC Disable

In some operating environments, it may be desirable to disable the automatic gain control (AGC) in the RX300. The AGC can be disabled by setting the 4-bit DIP switch (switch #3) on the RF pc board to the "ON" position. Figure A1 shows the switch set with AGC disabled (switch #3 is set towards the left in the photo).

DIP Switch #3  
Set to AGC Disable

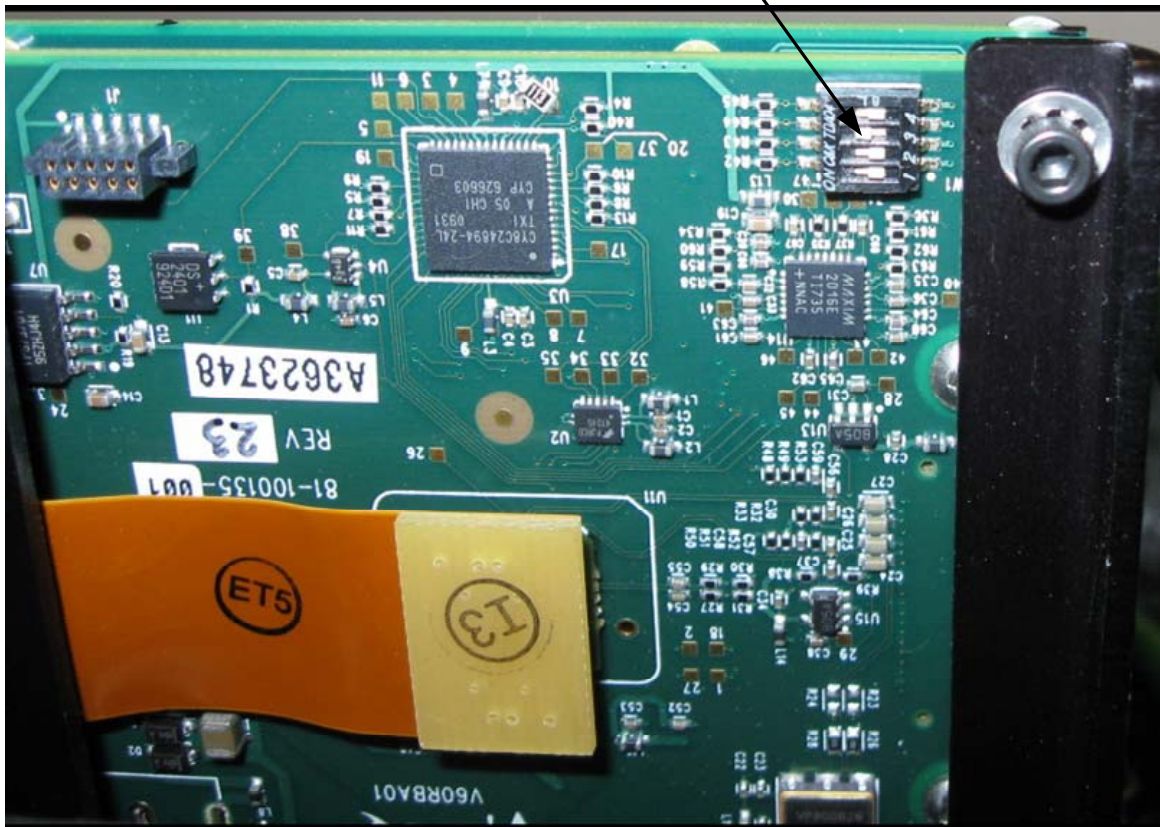


Figure A1