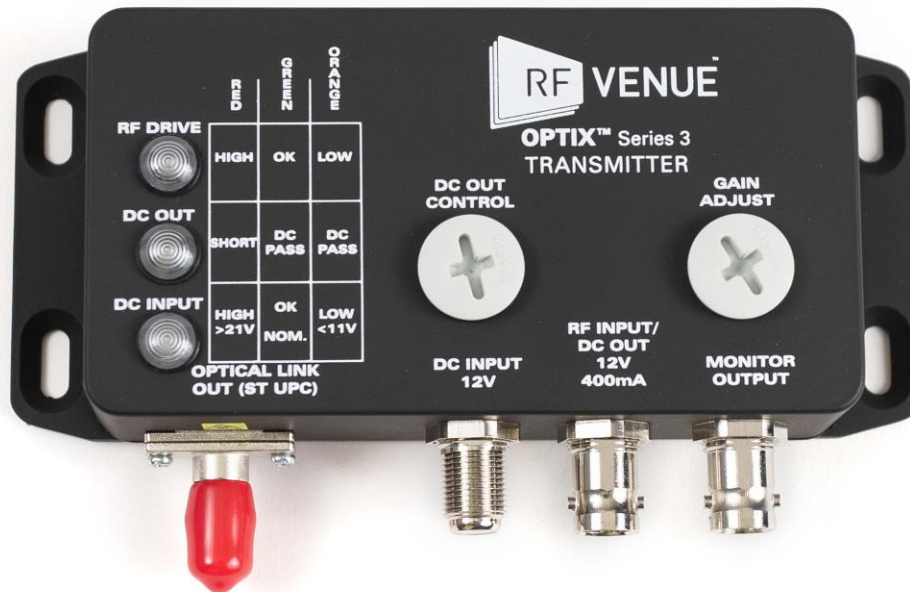


# OPTIX Series 3

Transmitter:



The OPTIX Series 3 Transmitter has three indicator lights, an available monitor output, and two on-board controls for DC power and gain adjustment.

This Monitor Output is a direct loop from the RF Input port for sampling the input signal on a spectrum analyzer or connecting to other equipment. The Monitor Output is not affected by the DC Control or the Gain Adjust.

## Transmitter:

To adjust the settings of the DC Out Control and Gain Adjust, first unscrew the gray removable hole plugs. These plugs are threaded and may be removed and installed with a Philips head screwdriver. When installing, ensure that the plugs are snug to prevent water/dust ingress, but do not over tighten and distort the rubber washer. Adjustments to the user controls are made by turning the 16-position rotary switch to a specific position using a small Philips head screwdriver (Notice the numbered/lettered positions and the arrow in the close-up photos).

**\*\*\*Always reinstall the hole plugs when not adjusting the user controls\*\*\***



The DC Out Control provides DC Voltage to the RF Input/DC Out port. DC Out Control has 5 possible selections:

Position 0: the DC Out LED is off and there is no DC power on the RF Input/DC Output port. **(Preset)**

Position 1: the DC Out LED is green and the RF Input/DC Output port receives 12VDC.

Position 2: the DC Out LED flashes green and the RF Input/DC Output port receives 12VDC with a superimposed 22kHz signal.

Position 3: the DC Out LED is orange and the RF Input/DC Output port receives 11VDC.

Position 4: the DC Out LED flashes orange and the RF Input/DC Output port receives 11VDC with a superimposed 22kHz signal.

Position 2, 3, and 4 are not typically used. At all other positions (5 through 0) there is no DC power at the RF Input port and the DC Out LED is off.

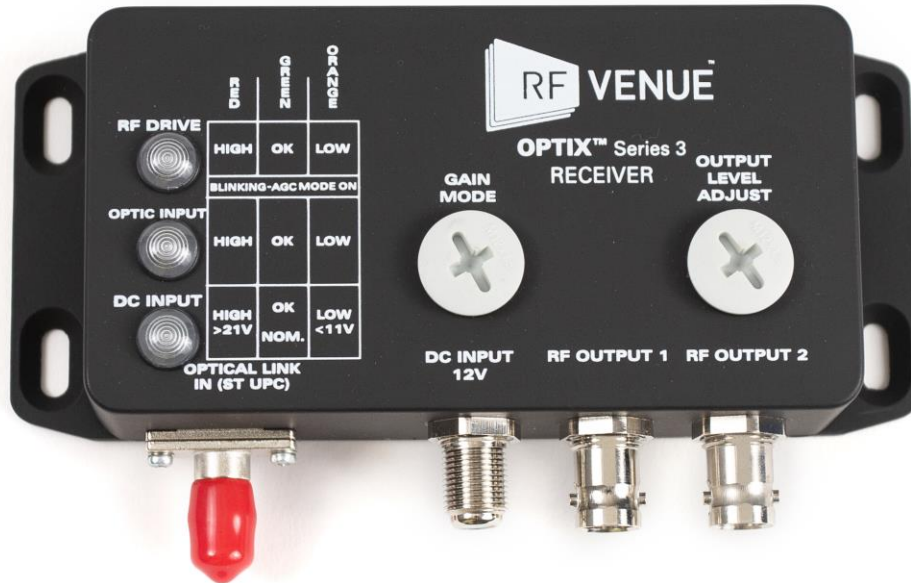
## Transmitter:

The Gain Adjust control has 16 possible settings including an Automatic Gain Control (AGC) mode. The AGC is active at position 0. It adjusts the input signal higher or lower to reach an output of approximately -25 dBm. The factory preset is at position A which represents 0 dB of gain. Position B through F each present approximately 2dB of gain for a maximum of 10 dB, while position 9 through 1 each present approximately 2dB of attenuation for a maximum of 18 dB.

Below are example measurements with an input signal of -21.00 dBm at 550 MHz:

A = -21.00 dBm (**Preset**)  
B = -18.88 dBm  
C = -17.08 dBm  
D = -15.19 dBm  
E = -13.73 dBm  
F = -12.90 dBm (maximum gain)  
0 = -25.24 dBm (AGC)  
1 = -39.50 dBm (maximum attenuation)  
2 = -37.49 dBm  
3 = -35.48 dBm  
4 = -34.19 dBm  
5 = -32.18 dBm  
6 = -30.22 dBm  
7 = -28.08 dBm  
8 = -25.37 dBm  
9 = -23.26 dBm

Receiver:



The OPTIX Series 3 receiver has three indicator lights, two on-board controls for Gain Mode and Output Level Adjust, and two duplicate RF outputs, 1 and 2.

## Receiver:

To adjust the settings of the Gain Mode and Output Level Adjust, first unscrew the gray removable hole plugs. These plugs are threaded and may be removed and installed with a Philips head screwdriver. When installing, ensure that the plugs are snug to prevent water/dust ingress, but do not over tighten and distort the rubber washer. Adjustments to the user controls are made by turning the 16-position rotary switch to a specific position using a small Philips head screwdriver (Notice the numbered/lettered positions and the arrow in the close-up photos).

**\*\*\*Always reinstall the hole plugs when not adjusting the user controls\*\*\***



The Gain Mode has 2 options, automatic and manual.

Position 0: Automatic Gain Mode - the output signal is kept constant (as long as the input signal is within the AGC hold range).

Position 1: Manual Gain Mode – output signal changes relative to input signal changes. **(Preset)**

Do not set Gain mode to anything other than 0 or 1 for risk of misconfiguration.

**\*\*\* Do Not use AGC on the TX and the RX at the same time \*\*\***

## Receiver:



The Output Level Adjust has 16 selectable options. In manual gain mode (Gain Mode position 1) the Output Level Adjust attenuates/amplifies the signal from -10 to +10 dB in 2dB steps. In automatic gain mode (Gain Mode position 0) the Output Level Adjust changes what level the output is held to (also in 2dB steps). The factory preset position is 2.

Two lists of example measurements from a -35.62 dBm input signal at 526 MHz in Manual Gain Mode and Automatic Gain Mode are shown below:

Automatic Gain Mode (Gain Mode Position 0)	
Output Level Adjust Position:	Output:
0	-62.31
1	-60.78
2	-59.45
3	-58.40
4	-56.85
5	-55.54
6	-52.90
7	-50.85
8	-48.87
9	-47.23
A	-45.74
B	-44.23
C	-42.29
D	-40.26
E	-39.21
F	-37.20

Manual Gain Mode (Gain Mode Position 1)	
Output Level Adjust Position:	Output:
0	-42.38
1	-40.35
2	-38.42
3	-36.37
4	-34.34
5	-32.29
6	-30.31
7	-28.28
8	-26.60
9	-26.21
A	-27.76
B	-28.03
C	-27.93
D	-28.19
E	-28.60
F	-29.11

## IMPORTANT SAFETY INSTRUCTIONS

	<p>The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated “Dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.</p>
	<p>The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (Servicing) instructions in the literature accompanying the product.</p>

- Read these instructions
- Keep these instructions.
- Heed all warnings.
- Follow all instructions.
- Do not use this apparatus near water
- Clean only with dry cloth.
- Do not block any ventilation openings. Install in accordance with the manufacturer’s instructions.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles and the point where they exit from the apparatus.
- Only use attachments/accessories specified by the manufacturer
- Unplug this apparatus during lightning storms or when unused for long periods of time.
- Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
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**WARNING**  
 TO REDUCE THE RISK OF FIRE OR ELECTRIC – SHOCK, DO NOT EXPOSE THIS APPARATUS TO RAIN OR MOISTURE

**WARNING**  
 DO NOT EXPOSE THIS EQUIPMENT TO DRIPPING OR SPLASHING AND ENSURE THAT NO OBJECTS FILLED WITH LIQUIDS ARE PLACED ON THE EQUIPMENT

**WARNING**  
 TO COMPLETELY DISCONNECT THIS EQUIPMENT FROM THE AC MAINS, DISCONNECT THE POWER SUPPLY CORD PLUG FROM THE AC RECEPTACLE

**WARNING**  
 THE MAINS PLUG OF THE POWER SUPPLY CORD SHALL REMAIN READILY OPERABLE