

# Tx-Check

## RF Relative Field Strength Meter

### Specification:

Frequency Range	: 0.1 – 2.5GHz
Operating voltage	: 9 volts DC
Attenuation	: x1 – x10 – x100
Sensing	: Built in antenna
Indication	: 10 segment LED bar graph
Size (L x W x H)	: 135 x 70 x 25 millimetres
Weight	: 150g (with battery)
Casing	: ABS plastic

### Description

The Tx-Check instrument can be used to detect the presence of radio frequency (RF) energy in the range 0.1 to 2.5GHz.

Relative Field Strength Meters (RFSM) measure the intensity of a RF signal relative to the RF source distance, power and signal orientation. In other words the closer the RFSM is to the signal source the higher it indicates. The signal strength is indicated by a ten division LED bar graph. The indication is not a calibrated value. RFSM's are also known as "RF Sniffers".

The Tx-Check has a signal attenuator that can be activated via the three position toggle switch located on the top. In the event that the measured RF signal is strong and moves the display completely and beyond the top bar, then the attenuator can be used to reduce the input RF signal and thus the display to be readable within the range of the ten LED bars.

In the event that the battery in the Tx-Check falls below a valid operating voltage, the Tx-Check will cease measuring and the weak battery condition is indicated by the top (10<sup>th</sup>) LED on the bar graph flashing on and off.

Any device emitting radio frequency energy within the Tx-Check's prescribed frequency range can be detected and displayed, including two-way radios, microwave ovens, wi-fi routers etc.

## Example of Tx-Check measuring a low power RC Transmitter



Depicted here is the Tx-Check measuring the output of a suspected faulty transmitter. When the transmitter was new and known to be working well, when placed in this position and proximity to the Tx-Check RFSM the indication on the bar graph display was 4 bars. As seen here 3 bars are lit indicating that the transmitter is outputting less RF power now than when known good. The RF power module in the transmitter was replaced and power restored to its known good state.

To create a reference for your RC transmitter, perform a measurement when the transmitter is known to be good. Then whenever you want you can check that the RF output level of the transmitter is still at the known good level.

### Example:

A measurement should be carried out away from any other possible RF influence or interference. Often one overlooks things like Wi-Fi modems and routers, cordless telephones and so on. Find a spot away from all possibilities. Obviously a flying field is not a good choice!

Place the TX-Check next to the transmitter. Measure the distance from the outer edge of the Tx-Check to the nearest edge of the transmitter. Note the orientation of the transmitter antenna. Some transmitters have a fixed antenna position.

Turn the Tx-Check on. Turn the transmitter on. Note the number of bars lit, if three bars are lit and the fourth is flickering, call that 4 and a half (4.5). Note it down for future reference checks.

NOTE: This test is a relative RF power output test and does not test other aspects of the transmitted signal, such as packets, data etc.

