

## Antenna Spec Smart Light Switch (2AAAS-LS01)

Rev 3, 08/31/2022

The device uses a printed circuit antenna exhibiting a PIFA type structure and characteristics. The antenna is not accessible or changeable by the user. No modifications can be made to the radiating mechanism (antenna or tuning elements) by the user.

The peak antenna gain is estimated to be 3.4 dBi.

### Peak antenna gain estimation :

Peak antenna gain is estimated by extracting the Gain ( $G_T$ ) from the Friis transmission equation.

$$\frac{P_R}{P_T} = \frac{\lambda^2 G_T G_R}{(4\pi R)^2}$$

Assuming polarization match (linearly polarized) and no mismatch loss (tuned) in the direction of peak antenna gain at 3m separation;

Freq = 2440 MHz

Rx antenna and gain : Com-Power AH-118 at 2440 MHz (9.3 dBi)

Tx : 2AAAS-LS01 (DUT)

$P_T$  : 5 dBm (conducted measurement at antenna input)

$P_R$  : -32.14 dBm (measured at reference antenna)

$G_T$  = 3.4 dBi (estimated)