RF Exposure Considerations for the Axis Communication AB Axis Companion Cube LW (Network Video Camera)

FCC ID: PNB-AXISM1065-LW

The FCC requires that the calculated MPE for mobile equipment to be equal to or less than a given limit dependent on frequency at a distance of 20 cm from a device to the body of a user.

The transmitters in the Axis Network Video Camera cover 2402-2480MHz BT, LE BT + 2412 - 2462MHz WLAN and 5180 -5240MHz WLAN operation.

Simultaneous transmission is not supported by the Axis Network Video Camera.

The following FCC Rule Parts and procedures are applicable:

Part 1.1310 – Radiofrequency radiation exposure limits

Part 2.1091 – Radiofrequency radiation exposure evaluation: mobile devices

KDB447498 D01 v06
Mobile and Portable Devices RF Exposure Procedures and Equipment Authorisation Policies

MPE calculation

$$S = EIRP/(4 \ \pi \ R^2)$$

Where   S = Power density

EIRP = P x G

P = Maximum transmitter power

G = Antenna gain

R = distance to the centre of radiation of the antenna

For WLAN and BT/ BT LE 2.4GHz band:

WLAN and BT/ LE BT do not transmit simultaneously, so worst case power is applied:

Values $S = 1.0$ mW/cm^2 for General population uncontrolled exposure
(FCC Part 1.1310, Table 1(B) Radiofrequency radiation exposure limits)

S = 1.0mW/cm^2

$P_{max} = 19.0$dBm (79.43mW)

$G = 1.3$dBi (x1.35)

$R = 20$cm

Calculation:

$$S = PG/4 \pi R^2$$

$$S = 79.43 \times 1.35/(12.56 \times (20)^2)$$

$$S = 107.23/5026$$

S = 0.0213 mW/cm^2

For WLAN 5.2GHz band:

Values $S = 1.0$ mW/cm^2 for General population uncontrolled exposure
(FCC Part 1.1310, Table 1(B) Radiofrequency radiation exposure limits)

S = 1.0mW/cm^2

$P = 15.0$dBm (31.62mW)

$G = 2.6$dBi (x1.82)

$R = 20$cm

Calculation:

$$S = PG/4 \pi R^2$$

$$S = 31.62 \times 1.82/(12.56 \times (20)^2)$$

$$S = 57.54/5026$$

S = 0.011 mW/cm^2

Conclusion

This confirms compliance to the required FCC Part 1.1310 Radio frequency radiation exposure limit of 1.0mW/cm^2 at 20cm operation and, hence, meets the requirements of FCC rule part 2.1091(c) and KDB447498 D01 v06, section 7.1.