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Basestation B4 B1 RF Radiation Exposure Levels for FCC ID:XYD-BS4AB

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1 Summary

The equipment is a fixed device, and operates using a 900MHz transmitter, together with two certified cellular modules (FCC ID: RI7LE910CXWWX).

The minimum distance between the 900MHz and cellular antennas are >20cm apart, so no colocation considerations are necessary.

The cellular transmitter installation and the antennas used (Panasonic PWB-BC3G-RSMAP) conform with the requirements of the FCC ID: RI7LE910CXWWX certification grant notes.

The following FCC Rule Parts and procedures are applicable:

Part 1.1310 – Radiofrequency radiation exposure limits

2 MPE Calculation Formula

The MPE calculation used to calculate the safe operating distance for the user is:

S = EIRP/4 π R2

Where:

- S = Power density
- EIRP = Effective Isotropic Radiated Power (EIRP = P x G)
- P = Conducted Transmitter Power
- G = Antenna Gain (relative to an isotropic radiator)
- R = distance to the centre of radiation of the antenna (safe operating distance)

3 Values

Transmitter frequency range = 902.2 – 927.7875 MHz

P = 27.8dBm. max. conducted

G = 8.0 dBi

EIRP = P x G = 35.8dBm = 3.8W

From FCC Part 1.1310 (e)(1) Table 1:

S_{req} = f/1500 = 902/1500 = **0.6 mW/cm^2**

4 Calculation

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

ie: $R = \sqrt{} EIRP/(4 \pi \times S)$

$= \sqrt{} 3800 / (12.56 \times 0.6)$

$= \sqrt{} 504.2$ cm

R = 22.5cm

5 Conclusion

The minimum safe operating distance of the 900MHz antenna from the user is 22.5cm.