Jongo A2 RF Exposure:-

The Jongo A2 is intended as a mobile device. A warning statement is included in the user manual advising users to maintain a minimum distance of 20cm.

Evaluation is therefore for exposure potential against the MPE limits given in Appendix A of OET Bulletin 65, Supplement C: 1500-100,000MHz; 1mW/cm^2

Compliance requirements are based upon General population / Uncontrolled exposure.

Equation (3) of OET Bulletin 65:

$$S = \frac{PG}{4\pi R^2}$$

where: S = power density (in appropriate units, e.g. mW/cm^2)
P = power input to the antenna (in appropriate units, e.g. mW)
G = power gain of the antenna in the direction of interest relative to an isotropic radiator
R = distance to the centre of radiation of the antenna (appropriate units, e.g. cm)

Substituting known values for the Jongo A2:

WiFi RF worst case Peak power, P = 55mW (+17.4dBm).
WiFi antenna gain (measured), G = +1.7 dB.
n.b. although the specified gain for the chip antenna is 0dBi, this is the best gain (Mid channel gain) measured in practice.
Distance, R = 20cm (for mobile use).

S = 0.016 < 1mW/cm^2

The Jongo A2 will be internally fitted with a pre-approved FCC Bluetooth USB dongle, which would therefore be co-located. Maximum power of all Bluetooth devices is 100mW eirp. The maximum MPE is therefore as follows.

Equation (3) of OET Bulletin 65:

$$S = \frac{PG}{4\pi R^2}$$

where: S = power density (in appropriate units, e.g. mW/cm^2)
P = power input to the antenna (in appropriate units, e.g. mW)
G = power gain of the antenna in the direction of interest relative to an isotropic radiator
R = distance to the centre of radiation of the antenna (appropriate units, e.g. cm)

Bluetooth worst case power, P = 100mW
Bluetooth antenna gain (maximum with above power is unity), G = 1.
Distance, R = 20cm (for mobile use).

S = 0.020 < 1mW/cm^2

For co-location we can compare both items to the limit and sum the percentage of limit to check 100% not exceeded :

0.02/1 + 0.016/1 = 3.6% limit < 100%