Since EUT has co-located antennas:

MPE Limit Calculation: EUT's operating frequencies @ 824.2 – 849.2 MHz; highest conducted power = ERP – Max Antenna Gain = 23.93 – 11.5 = *12.43dBm* (peak) therefore, **Limit for Uncontrolled exposure = Freq/1500 = 824.2/1500= 0.549 mW/cm^2 or 5.49 W/m^2**

EUT maximum antenna gain = *8.5 dBi + 10log(# of antennas) = 8.5 + 3.0 =11.5dBi*

Equation from page 18 of OET 65, Edition 97-01

$S1 = PG / 4\pi R^2$ or $R = \sqrt{PG / 4\pi S}$

where, S1 = Power Density (Limit = 0.549 mW/cm^2)
P = Power Input to antenna (17.498mW)
G = Antenna Gain (14.125 numeric)
R = Minimum Distance between User and Antenna (20 cm)

$S1 = (17.498*14.125)/(4*3.14*20^2) = 247.172/5024 = 0.049$ mW/cm^2
$S1 < 0.549$ mW/cm^2 ,

MPE Limit Calculation: EUT's operating frequencies @ 1850-1910 MHz; highest conducted power = EIRP – Antenna Gain = 26.107 – 8.4 = 17.71*dBm* (peak) therefore, **Limit for Uncontrolled exposure: 1 mW/cm^2 or 10 W/m^2**

EUT maximum antenna gain = *5.4 dBi + 10log(# of antennas) = 5.4 + 3.0 = 8.4dBi*

Equation from page 18 of OET 65, Edition 97-01

$S2 = PG / 4\pi R^2$ or $R = \sqrt{PG / 4\pi S}$

where, S2 = Power Density (Limit = 1 mW/cm^2)
P = Power Input to antenna (59.020mW)
G = Antenna Gain (6.918 numeric)
R = Minimum Distance between User and Antenna (20 cm)

$S2 = (59.020*6.918)/(4*3.14*20^2) = 408.319/5024 = 0.082$ mW/cm^2
$S2 < 1$ mW/cm^2 ,

MPE Limit Calculation: EUT's operating frequencies @ 2400-2483.5 MHz; highest conducted power = *28.86dBm* (peak) therefore, **Limit for Uncontrolled exposure: 1 mW/cm^2 or 10 W/m^2**

EUT maximum antenna gain = *4.3dBi + 10log(# of antennas) = 4.3 + 3.0 = 7.3dBi*

Equation from page 18 of OET 65, Edition 97-01

$S3 = PG / 4\pi R^2$ or $R = \sqrt{PG / 4\pi S}$

where, S3 = Power Density (Limit = 1 mW/cm^2)
P = Power Input to antenna (770.96mW)
G = Antenna Gain (5.383 numeric)
R = Minimum Distance between User and Antenna (20 cm)

S3 = (770.96*5.383)/(4*3.14*20^2) = 4150.08/5024 = 0.826 mW/cm^2
S3 < 1 mW/cm^2

MPE Limit Calculation: EUT's operating frequencies @ 5725-5850 MHz; highest conducted power = *28.915dBm* (peak) therefore, **Limit for Uncontrolled exposure: 1 mW/cm^2 or 10 W/m^2**

EUT maximum antenna gain = *4 dBi + 10log(# of antennas) = 4.0 + 3.0 = 7.0dBi.*

Equation from page 18 of OET 65, Edition 97-01

$S4 = PG / 4\pi R^2$ or $R = \sqrt{PG / 4\pi S}$

where, S4 = Power Density (Limit = 1 mW/cm^2)
P = Power Input to antenna (780.78mW)
G = Antenna Gain (5.024 numeric)
R = Minimum Distance between User and Antenna (20 cm)

S4 = (780.78*5.024)/(4*3.14*20^2) = 3922.64/5024 = 0.781 mW/cm^2
S4 < 1 mW/cm^2

For Co-located Antennas:

S1 + S2 + S3 + S4 < 1mW/cm2

Since,
0.049 mW/cm2 + 0.082 mW/cm2 + 0.826 mW/cm2 + 0.781 mW/cm2 > 1 mW/cm2

The Minimum Distance between User and Antennas is

R = (√P1G1 / (4*3.14*0.549)) + (√(P2G2 + P3G3 + P4G4) / (4*3.14*1))
= (√247.17/3.79) + ((408.32 + 4130.48 + 3903.91)/ 12.56)
= 27.15 cm