Airtel ATN LTD	Model: MTP - Multi Test Platform		Test Number:	190709				
MPE Calculator	MPE uses EIRP for calculation. EIRP is based on TX power added to the antenna gain in dBi.							
	dBi = dB gain compared to an isotropic radiator.							
	S = power density in mW/cm^2							
	Transmitter maximum Output power operating at 100% (Watts)		0.000060		Antenna Gain (dBi)	1		
Output Power for % duty Cycle operation (Watts)		100	0.000060	dBd + 2.17 = dBi	dBi to dBd	2.2		
Tx Frequency (MHz)	131.4	Calcualtion power (Watts)	0.000060		Antenna Gain (dBd)	-1.17		
Cable Loss (dB)	0.0	(dBm)	-12.19		Antenna minus cable (dBi)	1.00		
	Calculated ERP (mw)	0.046			EIRP = Po(dBM) + Gain (dB)			
	Calculated EIRP (mw)	0.076			Radiated (EIRP) dBm	-11.190		
					ERP = EIRP - 2.17 dB			
					Radiated (ERP) dBm	-13.360		

Power density (S)

EIRP
------- = mW/cm^2
4 p r^2

	Occupational Limit	FCC radio frequency radiation exposure limits per 1.1310		
1	mW/cm^2	Frequency (MHz)	Occupational Limit (mW/cm^2)	Public Limit (mW/cm^2)
10	W/m^2	30-300	1	0.2
	General Public Limit	300-1,500	f/300	f/1500
0.2	mW/cm^2	1,500-10,000	5	1
2	W/m^2			

	Occupational Limit			
$0.6455f^{0.5}$	W/m^2	IC radio frequency radiation exposure limits per RSS-102		
9.20971	W/m^2	Frequency (MHz)	Occupational Limit (W/m^2)	Public Limit (W/m^2)
	General Public Limit	100-6,000	$0.6455f^{0.5}$	
1.291	W/m^2	6,000-15,000	50	
1.29100	W/m^2	48-300		1.291
		300-6,000		$0.02619f^{0.6834}$
		6,000-15,000	50	10

f = Transmit Frequecny (MHz)		f (MHz) =	131.4 MHz
P_T = Power Input to Antenna (mW)		P_T (mW) =	0.060 mW
Duty cycle (percentage of operation)		% =	100 %
P_A = Adjusted Power due to Duty cycle or Cable Loss (mW)		P_A (mW) =	0.060 mW
G_N = Numeric Gain of the Antenna		GN (numeric) =	2.17 numeric
S_{20} = Power Density of device at 20cm (W/m^2)	$S_{20}=(P_AG_N)/(4\pi R_{20})^2$	S_{20} (W/m^2) =	0.00 W/m2
S_L = Power Density Limit (W/m^2)		S_L (W/m^2) =	1.291 W/m2
R_C = Minimum distance to the Radiating Element for Compliance (cm)	$R_C=\sqrt{(P_AG_N/4\pi S_L)}$	R_C (cm) =	0.3 cm
S_C = Power Density of the device at the Compliance Distance R_C (W/m^2)	$S_C=(P_AG_N)/(4\pi R_C)^2$	S_C (W/m^2) =	1.29 W/m2
R_{20} = 20cm		R20 =	20 cm
	For Complaince with Canada General Population Limits, User Manual must indicate a minimum seperation distance of		0.3 cm

Summary: Standalone MPE Calculations and Summary

Band (MHZ)	Tx Duty Cycle (%)	Tx Frequeny (MHz)	Power Total (mW)	Antenna Gain (dBi)	S_L (W/m^2)	S_{20} (W/m^2)	R_C (cm)	S_C (W/m^2)
118-137	100	131.4	0	1	1.291	0.00	0.3	1.29