		aranet PRO Plus base		: : ID:				
APE Calculator F	RF Exposure uses EIRP for c	alculation. EIRP is based of	on TX power added to the antenna ga	in in dBi.				
	dBi = dB gain compared to an							
	S = power density in mW/cm							
		unsmitter Output power (m ¹ Transmitter Output power (¹						
Output Power for 250	mS in 60 second duty Cycle	1 1 (00 0.0010		Antenna Gain (dBi)) 0		
Output I ower for 250		duty Cycle operation (Wat		Ant	enna Gain (Numeric)			-
Tx Frequency (MHz)	923	Calcualtion power (Wat	its) 0.0010	dBd + 2.17 = dBi	i dBi to dBd	1 2.2		
					Antenna Gain (dBd)			
Cable Loss (dB)	0.0	Adjusted Power (dB			na minus cable (dBi)			
	Calculated EDD (mm)	0.607		Antenna Gain (Numeric) EIRP = Po(dBM) + Gain (dB)				
	Calculated ERP (mw) 0.607 Calculated EIRP (mw) 1.000			Radiated (EIRP) dBm				
				ERP = EIRP - 2.17		1		
	Power density (S) mW/e	EIRP		J	Radiated (ERP) dBm	1		
	I Ower density (3) mw/d	4 p r^2						
		-						
	r (cm) EIRP (mW)							
	Occupational Limit	FCC rad	o frequency radiation exposure limits p	per 1.1310				
3.0766666667	mW/cm ²	Frequency (MHz)	Occupational Limit (mW/cm ²)	Public Limit (mW/cm ²)	1			
31	W/m ²	30-300	1	0.2	1			
31	W/m General Public Limit	300-1,500	f/300	f/1500				
0.615333333	mW/cm ²	1,500-10,000	5	1	1			
6	W/m ²	1,500 10,000		1				
0	vv/f11							
	Occupational Limit			1		1	1	1
$0.6455f^{0.5}$	W/m ²	IC radio	frequency radiation exposure limits per	r RSS-102				
24.4	W/m ²	Frequency (MHz)	Occupational Limit (W/m ²)	Public Limit (W/m ²)	1			
	General Public Limit	100-6,000	$0.6455 f^{0.5}$		1			
$0.02619 f^{0.6834}$	W/m ²	6,000-15,000	50		1			
2.8	W/m ²	48-300		1.291	1			
	••/111	300-6,000		$0.02619f^{0.6834}$.			
		6,000-15,000	50	10	4			
		.,						
f = Transmit Frequecny (MHz)				f (MHz) =	923	8 MHz		
P _T = Power Input to Antenna (m	nW)			$P_T (mW) =$	1.0000	, mW		
Outy cycle (percentage of operation)				% =	100	/ %		
$P_A = Adjusted$ Power due to Du				$P_A(mW) =$) mW		
G _N = Numeric Gain of the Anten	ına			GN (numeric) =) numeric		
$S_{20} =$ Power Density of device a	at 20cm (mW/m ²)		$S_{20} = (P_A G_N) / (4\pi R_{20})^2$	$S_{20} (mW/m^2) =$		0 mW/m ²		
S_{20} = Power Density of device at 20cm (W/m ²)		$S_{20} = (P_A G_N) / (4\pi R_{20})^2$	$S_{20} (W/m^2) =$		W/m ²			
$S_L = Power Density Limit (W/m^2)$	2)			$S_L (W/m^2) =$		³ W/m ²		
$R_C = Minimum distance to the P$	Radiating Element for Compliance	(cm)	$R_{C} = \sqrt{(P_A G_N / 4\pi s_1)}$	$R_{\rm C}$ (cm) =	0.5	5 cm		
$S_C =$ Power Density of the device	ce at the Compliance Distance R_C	(W/m ²)	$S_{C}=(P_{A}G_{N})/(4\pi R_{C})^{2}$	$S_{\rm C} (W/m^2) =$	2.78	W/m^2		
R ₂₀ = 20cm				R20=	20) cm		
	For Complaince with Canada General Population Limits					i cm		
	Or in Meter	s for Companice with Car	ada General Population Limits, a mini	num seperation distance of	0.01	Meters		
Summary: Standalone MPE	Calculations and Summarv							
Band (MHZ)	Tx Duty Cycle (%)	Tx Frequeny (MHz)	Power Total (mW)	Antenna Gain (numeric)	$S_L (W/m^2)$	S ₂₀ (W/m ²)	R _C (cm)	S _C (W/m ²
902-928	100	923	1	1.00	2.783	0.00	0.5	2.78
				<u> </u>	[
Band (MHZ)	Tx Duty Cycle (%)	Tx Frequeny (MHz)	Power Total (mW)	Antenna Gain (dBi)	SL (W/m2)	S20 (W/m2)	RC (cm)	SC (W/m2
2400-2483.5	100	2442	120.00	1.00	5.412	0.24	4.2	5.41
	Simhtencom MDE C. L. L.							
	Simlutaneous MPE Calculatio Transmitter 1	Transmitter 2	-					
Tx Frequeny (MHz)	923	1 ransmitter 2 24	42					
$S_{20} (W/m^2)$	923		24					
520 (W/III)	2.783	5.4						-
			14	1		1	1	
$S_L (W/m^2)$			44					
$\frac{S_L (W/m^2)}{Power Ratio (S_L / S_{20})}$	0.001 ios at 20cm (0.020 + 0.001)	0.0						

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SAF Tehnika ASS/N3M/N: TDSBOAU3 (4, 5, 6, 7)FCCTest: 230227AIC: 8Test to: CFR47 15C, RSS-Gen RSS-247File: ARANETPP RFExp

S/N's: 5376 / 5865 FCC ID: W9Z-ARANETPP IC: 8855A-ARANETPP 247 Date: April 5, 2023 Page 1 of 2

PMN: aranet PRO Plus base				Test Number			
IPE Calculator	RF Exposure uses EIRP for calculation. EIRP is based on T dBi = dB gain compared to an isotropic radiator.			TX power added to the antenna ga	in in dBi.		
	S = power density in mW/cm			120			
Peak Transmitter Output power (mW)			120				
Transmitter maximum Output power operating at 100% (Watts)			0.1200		Antonia Calia (ID)	0	
Percent Duty Cycle operation (%) Output Power for 100% duty Cycle operation (Watts)			100.0	A4	Antenna Gain (dBi)	0	
		· · · · ·		0.1200 0.1200	dBd + 2.17 = dBi	enna Gain (Numeric) dBi to dBd	1.00
x Fiequency (MIRZ)	2442	Calcuation po	wer (watts)	0.1200		Antenna Gain (dBd)	-2.17
Cable Loss (dB)	0.0	Adjusted Po	ower (dBm)	20.79		na minus cable (dBi)	0.00
			ower (abiliy	20.77	7 men	in filmus cubic (ubi)	0.00
	Calculated ERP (mw) 72.808				EIRP = Po	(dBM) + Gain (dB)	
	Calculated EIRP (mw) 120.000				Radiated (EIRP) dBm		20.792
						ERP = EIRP - 2.17	dB
	Power density (S) mW/	EIRP			F	Radiated (ERP) dBm	18.622
	rower density (3) mw/	4 p r^2					
		· P · 2					
	r (cm) EIRP (mW)						
				1° * ·	1.1210		
				frequency radiation exposure limits per 1.1310			
5	5 mW/cm ²	Frequency (MHz)		Occupational Limit (mW/cm ²)	Public Limit (mW/cm ²)		
50	W/m^2	30-300		1	0.2		
	General Public Limit 300-1,500		00	f/300	f/1500		
1	mW/cm ²	1,500-10,000		5	1		
10	W/m^2						
	Occupational Limit						
$0.6455f^{0.5}$	5 W/m ² IC radio free			equency radiation exposure limits per RSS-102			
39.7	2	Frequency (MHz)		Occupational Limit (W/m ²) Public Limit (W/m ²)			
	General Public Limit	100-6,000		0.6455 <i>f</i> ^{0.5}			
$0.02619f^{0.6834}$				50			
· · · · · · · · · · · · · · · · · · ·		6,000-15,000		50	1 201		
5.4	W/m ²	48-300			1.291		
		300-6,000			$0.02619 f^{0.6834}$		
		6,000-15,	,000	50	10		
m 1.m (****	\				60.07 \	2442	
Transmit Frequecny (MHz)				f(MHz) =		MHz	
P _T = Power Input to Antenna (mW)					P_{T} (mW) =	120.0000	
Duty cycle (percentage of operation)					% =	100.0	
$P_A = Adjusted Power due to Duty cycle or Cable Loss (mW)$					$P_A(mW) =$	120.00	
G _N = Numeric Gain of the Antenna				2	GN (numeric) =		numeric
$P_{20} =$ Power Density of device at 20cm (mW/m ²)				$S_{20} = (P_A G_N) / (4\pi R_{20})^2$	$S_{20} (mW/m^2) =$		mW/m ²
V_{20} = Power Density of device at 20cm (W/m ²)			$S_{20} = (P_A G_N) / (4\pi R_{20})^2$	$S_{20} (W/m^2) =$		W/m ²	
S_L = Power Density Limit (W/m ²)					$S_L (W/m^2) =$	5.412	W/m ²
$R_{\rm C}$ = Minimum distance to the Radiating Element for Compliance (cm)				$R_{C} = \sqrt{(P_A G_N / 4\pi S_L)}$	$R_{\rm C}$ (cm) =	4.2	cm
S_{C} = Power Density of the device at the Compliance Distance R_{C} (W/m ²)			$S_{C} = (P_{A}G_{N})/(4\pi R_{C})^{2}$	$S_{\rm C} (W/m^2) =$	5.41	W/m ²	
$_{20} = 20 \text{cm}$					R20=		cm
					120-	20	
	For Complaince with Cana	ada General Popu	lation Limits	, User Manual must indicate a minii	mum seperation distance of	4.2	cm
				a General Population Limits, a mini			Meters

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