



REGULATORY COMPLIANCE REPORT

TITLE: MPE Report for 100WP-phase3.3
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REV	CCO	DESCRIPTION OF CHANGE	DATE	APPROVALS	
001		INITIAL RELEASE		Engineering	
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REVISION HISTORY

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Test Data Summary

FCC 15.247 / IC RSS-210
 Frequency Hopping Transmitter 100WB, 903 - 926.8 MHz
 FCC ID:EWQ100WB
 IC:864D-100WB
 Device Models (for IC): 100WB
 OATS Registration Number: FCC 90716, IC 864D-1

Rule	Description	Spec Limit	Max. Reading	Pass/Fail
Parts 1.1310 & 2.1091(mobile) or 2.1093 (portable)/RSS-102 Sec 4.2	Limits for Maximum Permissible Exposure (MPE)	Maximum 0.61 mW / cm ² @ 20cm 6.1 W / M ² (@ 0.2M)	0.319 mW / cm ² @ 20 cm 3.19 W/M ² @ 0.2 M	Pass

1.1310 & 2.1091(mobile) or 2.1093(portable) / RSS-102 Sec 4.2-Canada Safety Code 6; Table 5

Maximum Permissible Exposure (MPE)

Radiofrequency radiation exposure limits. - The criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radiofrequency (RF) radiation as specified in §1.1307(b), except in the case of portable devices which shall be evaluated according to the provisions of §2.1093 of this chapter.

1.1307 (b) In addition to the actions listed in paragraph (a) of this section, Commission actions granting construction permits, licenses to transmit or renewals thereof, equipment authorizations or modifications in existing facilities, require the preparation of an Environmental Assessment (EA) if the particular facility, operation or transmitter would cause human exposure to levels of radiofrequency radiation in excess of the limits in §§1.1310 and 2.1093 of this chapter.

	unit 200087 Field strength (dBuV/m)	EIRP (dbm)	unit 200087 conducted power (dbm)	conducted power (watts)	antenna gain (dbi)	antenna gain numeric
FM	125.89	31.89	25.06	.321	6.9	5.0
AM	125.81	31.81	24.79	.316	7.0	5.0

Determine the maximum power density for the general / uncontrolled population minimum separation distance of 20 cm. ($f_{MHz} / 1500 \text{ mW/cm}^2 = f_{MHz} / 150 \text{ W/M}^2$)

The power density is calculated as: $P_d = \frac{P_t \times G}{4 \times \pi \times r^2}$

P_d = power density in mW/cm^2 P_t = transmit power in milliwatts
 G = numeric antenna gain r = distance between body and transmitter in centimeters.
 FCC Limits: 915MHz / 1500 = 0.61mW / cm² @ 20cm
 IC Limits: 915MHz / 150 = 6.1 W / M² (@ 0.2M)

FM Mode

Max antenna gain = 6.9 dBi = 5.0 numeric
 Max TX power = 25.06 dBm = 321 milliwatts

results: $P_D = (321 \times 5.0) / (4 \times \pi \times 20\text{cm}^2) = 0.319 \text{ mW} / \text{cm}^2 @ 20 \text{ cm}$
 $\text{W/m}^2 = 10 \text{ times mW/cm}^2 = 3.19 \text{ W/M}^2 @ 0.2 \text{ M}$

AM Mode

Max antenna gain = 7.0 dBi = 5.0 numeric
 Max TX power = 24.79 dBm = 316 milliwatts

results: $P_D = (316 \times 5.0) / (4 \times \pi \times 20\text{cm}^2) = .314 \text{ mW} / \text{cm}^2 @ 20 \text{ cm}$
 $\text{W/m}^2 = 10 \text{ times mW/cm}^2 = 3.14 \text{ W/M}^2 @ 0.2 \text{ M}$

These results are not in excess of the limits set forth in the rules, therefore an EA is not required.