

Régie de l'énergie - Dossier R-3770-2011

Autorisation d'investissement - Projet Lecture à distance (LAD) – Phase 1 d'Hydro-Québec Distribution

CANADA

PROVINCE DE QUÉBEC
DISTRICT DE MONTRÉAL

DOSSIER R-3770-2011

RÉGIE DE L'ÉNERGIE

AUTORISATION D'INVESTISSEMENT
PROJET LECTURE À DISTANCE (LAD) –
PHASE 1
D'HYDRO-QUÉBEC DISTRIBUTION

HYDRO-QUÉBEC
En sa qualité de Distributeur

Demanderesse

-et-

STRATÉGIES ÉNERGÉTIQUES (S.É.)

ASSOCIATION QUÉBÉCOISE DE LUTTE
CONTRE LA POLLUTION ATMOSPHÉRIQUE
(AQLPA)

Intervenantes

HUNT

**FICHES TECHNIQUES D'EXPOSITION AUX RADIOFRÉQUENCES ÉMISES PAR
LES COMPTEURS FOCUS AXR-SD DE LANDIS+GYR (HUNTSU 0864)
ET RSRX4E DE LANDIS+GYR (HUNTSU 0825).**

EN LIASSE

Déposées par:
Stratégies Énergétiques (S.É.)
Association québécoise de lutte contre la pollution atmosphérique (AQLPA)

Le 15 mars 2012

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Exhibit P: RF Exposure
TEB-HUNTSU825

General Information

Applicant: Hunt Technologies, LLC
FCC ID: TEB-HUNTSU825
Device Category: Mobile
Environment: General Population/Uncontrolled Exposure

Technical Information 900 MHz

Antenna Type: ½ Wave Dipole at 915 MHz
Antenna Gain: 2.15 dBi (Theoretical maximum)
Transmitter Conducted Power: 25.99 dBm
Maximum System EIRP: 28.14 dBm
Operating Configuration: Fixed mounted
Exposure Conditions: Greater than 20 centimeters

Technical Information 2400 MHz ZigBee

Antenna Type: PCB Inverted F ¼-Wave Monopole
Antenna Gain: 5.15 dBi (Theoretical maximum)
Transmitter Conducted Power: 20.03 dBm
Maximum System EIRP: 25.18 dBm
Operating Configuration: Fixed mounted
Exposure Conditions: Greater than 20 centimeters

MPE Calculation

The Power Density (mW/cm²) is calculated as follows:

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

Where:

S = power density (in appropriate units, e.g. mW/cm²)

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 center of radiation of the antenna (appropriate units, e.g., cm)

MPE CALCULATIONS FOR MOBILE EQUIPMENT							
Transmit Frequency (MHz)	Conducted Power (dBm)	Conducted Power (mW)	Antenna Gain (dBi)	Antenna Gain (Linear)	Distance (cm)	Power Density (mW/cm ²)	Power Density Limit (mW/cm ²)
915	25.99	397.19	2.15	1.641	20	0.130	0.60
2405	20.03	100.69	5.15	3.273	20	0.0656	1.00

Installation Guidelines

Exhibit D - Product Ship Sheet contains the following text advising how to install the equipment to maintain compliance with the FCC RF exposure requirements:

Endpoint Location

To comply with FCC's RF exposure limits for general population/uncontrolled exposure, the antenna(e) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be collocated or operating in conjunction with any other antenna or transmitter.

Conclusion

This device complies with the MPE requirements by providing adequate separation between the device, any radiating structure, and the general population.

Exhibit Q: RF Exposure
TEB-HUNTSU864

General Information

Applicant: Hunt Technologies, LLC
FCC ID: TEB-HUNTSU864
Device Category: Mobile
Environment: General Population/Uncontrolled Exposure

Technical Information 900 MHz

Antenna Type: PCB Inverted F ¼-Wave Monopole
Antenna Gain: 5.15 dBi (Theoretical maximum)
Transmitter Conducted Power: 27.48 dBm
Maximum System EIRP: 32.63 dBm
Operating Configuration: Fixed mounted
Exposure Conditions: Greater than 20 centimeters

Technical Information 2400 MHz ZigBee

Antenna Type: PCB Inverted F ¼-Wave Monopole
Antenna Gain: 5.15 dBi (Theoretical maximum)
Transmitter Conducted Power: 21.20 dBm
Maximum System EIRP: 26.35 dBm
Operating Configuration: Fixed mounted
Exposure Conditions: Greater than 20 centimeters

MPE Calculation

The Power Density (mW/cm²) is calculated as follows:

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

Where:

S = power density (in appropriate units, e.g. mW/cm²)

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 center of radiation of the antenna (appropriate units, e.g., cm)

MPE CALCULATIONS FOR MOBILE EQUIPMENT							
Transmit Frequency (MHz)	Conducted Power (dBm)	Conducted Power (mW)	Antenna Gain (dBi)	Antenna Gain (Linear)	Distance (cm)	Power Density (mW/cm ²)	Power Density Limit (mW/cm ²)
902.1	27.48	559.76	5.15	3.273	20	0.364	0.60
2405	21.20	131.83	5.15	3.273	20	0.0858	1.00

Installation Guidelines

“Exhibit D - Product Ship Sheet.pdf” contains the following text advising how to install the equipment to maintain compliance with the FCC RF exposure requirements:

Endpoint Location

To comply with FCC’s RF exposure limits for general population/uncontrolled exposure, the antenna(e) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be collocated or operating in conjunction with any other antenna or transmitter.

Conclusion

This device complies with the MPE requirements by providing adequate separation between the device, any radiating structure, and the general population.