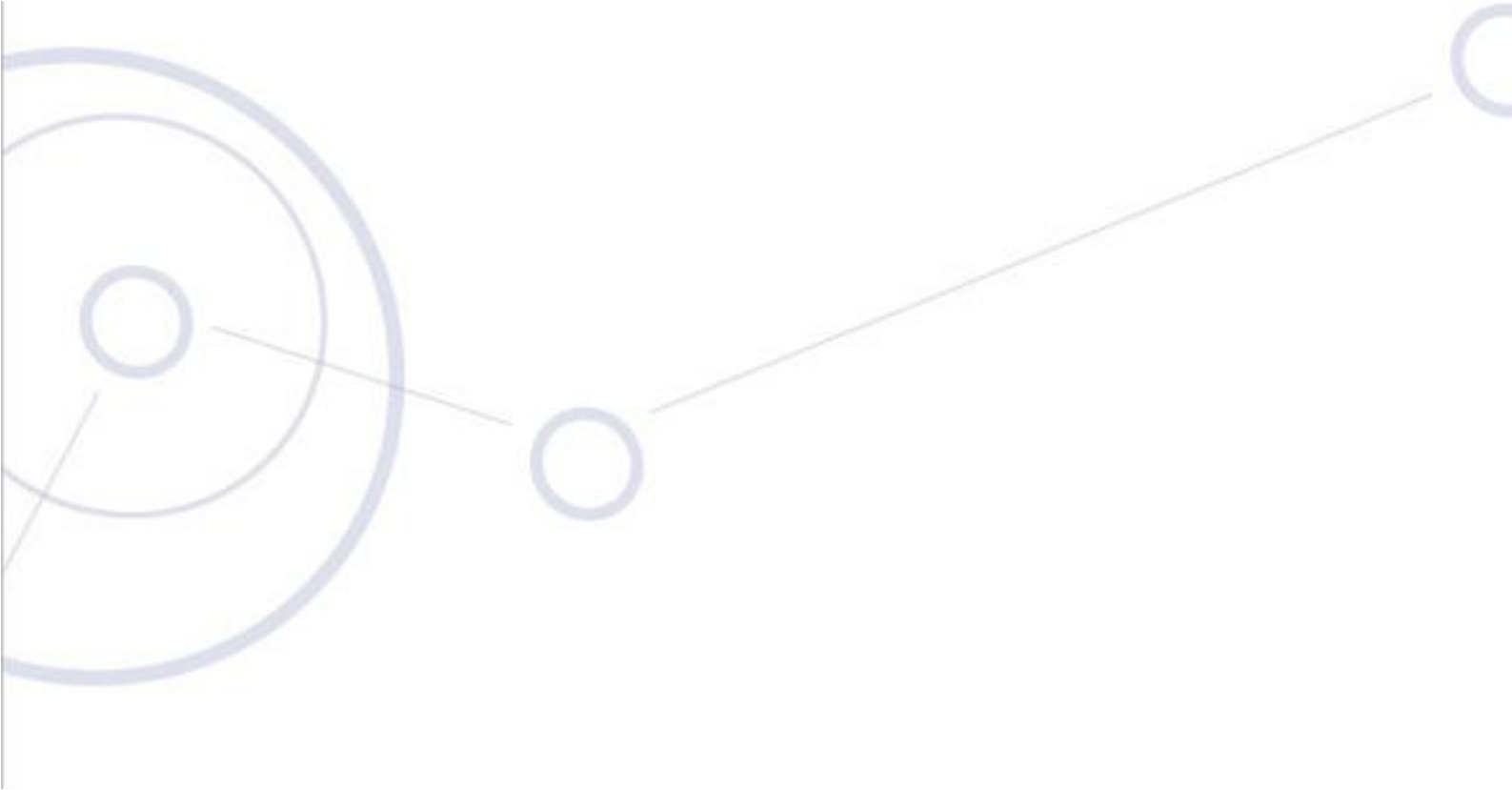




RADWIN 2000 E

5 GHz High Performance PtP Outdoor Unit

REFERENCE GUIDE



Regulatory Compliance

FCC/ISED - Compliance

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules and ISED RSS standards. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications to this equipment not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.



Caution

Outdoor units and antennas should be installed ONLY by experienced installation professionals who are familiar with local building and safety codes and, wherever applicable, are licensed by the appropriate government regulatory authorities. Failure to do so may void the product warranty and may expose the end user or the service provider to legal and financial liabilities. Resellers or distributors of this equipment are not liable for injury, damage or violation of regulations associated with the installation of outdoor units or antennas. The installer should configure the output power level of antennas according to country regulations and antenna type.



Prudence

Les unités extérieures et les antennes doivent être installés que par des professionnels expérimentés d'installation qui sont familiers avec les normes locales et les codes de sécurité et, si applicable, sont agréées par les autorités gouvernementales de réglementation compétents. Ne pas le faire peut annuler la garantie du produit et peuvent exposer l'utilisateur final ou le fournisseur de services d'obligations juridiques et financiers. Revendeurs ou distributeurs de ces équipements ne sont pas responsables des blessures, des dommages ou violation des règlements liés à l'installation des unités extérieures ou des antennes. L'installateur doit configurer le niveau de puissance de sortie des antennes conformément aux réglementations nationales et le type d'antenne.

**Warning**

This equipment should be installed and operated with a minimum safe distance between the radiator and your body as indicated in the Antenna Details Table.

**Avertissement**

Cet équipement doit être installé et utilisé avec une distance de sécurité minimale entre le radiateur et votre corps, comme indiqué dans le Tableau des Détails de L'antenne.

**Warning**

The device is granted to operate under FCC Rules in the 4.94-4.99 GHz, 5.15-5.25 GHz, 5.725-5.85 GHz and 5.925-6.425 GHz bands.

**Avertissemen**

L'appareil est autorisé à fonctionner selon les normes ISDE dans les bandes 4,94-4,99 GHz, 5,925-6,245 GHz et 5,725-5,85 GHz.

**Warning**

This equipment is prohibited from operation in the 5.925-6.425 GHz band if installed on oil platforms, cars, trains, boat and aircraft. Control of or communications with unmanned aircraft systems is prohibited, including drones.

**Avertissemen**

Les dispositifs fonctionnant dans la bande 5,925-6,425 MHz:

- Ne doivent pas être utilisés pour commander des systèmes d'aéronef sans pilote ni pour communiquer avec de tels systèmes;
 - Ne doivent pas être utilisés sur les plateformes de forage pétrolier;
 - Ne doivent pas être utilisés dans les aéronefs;
 - Ne doivent pas être utilisés dans les automobiles;
 - Ne doivent pas être utilisés dans les trains;
 - Ne doivent pas être utilisés sur les navires maritimes
-

This device complies with Part 15 of the FCC rules and with ISED license-exempt RSS standard(s). Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference.
- (2) This device must accept any interference received, including interference that may cause undesired operation.

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

- (1) This device may not cause interference.
- (2) This device must accept any interference, including interference that may cause undesired operation of the device.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

- (1) L'appareil ne doit pas produire de brouillage;
- (2) L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

This Class B digital apparatus complies with Canadian ICES-003.

Overview

RADWIN 2000 E is a high performance Point-to-Point outdoor unit that operates in the 5 GHz band that can deliver peak capacity of up to 1.2 Gbps.

RADWIN 2000 E CON EC00, RADWIN 2000 EC00 is the connectorized form factor.

RADWIN 2000 E INT EI00, RADWIN 2000 EI00 is the integrated antenna form factor.

The connectorized form factor can be connected to a wide range of directional antennas as detailed in the application files. The integrated form factor incorporates an integrated antenna.

The RADWIN 2000 E includes a field proven air interface that ensures best-in-class link connectivity in harsh spectrum for backhaul and access as well as wireless CCTV and additional applications that require robust connectivity.

For this purpose, the RADWIN 2000 E is designed to deliver impressive packet switching power to guarantee full capacity, regardless of traffic packet size.

Enabling minimum TCO, the RADWIN 2000 E is extremely reliable and durable, complying with IP67 / NEMA Type 4 enclosure rating. The unit features a built-in GPS for TDD synchronization and is powered by PoE

When operating in the 5.925 – 6.425 GHz band the RADWIN 2000 E can be software configured either as Standard Power AP or Fixed Client Device and is subject to Automated Frequency Coordination (AFC) system.

Basic Features:

- Modulation OFDM - BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM, 4096QAM
- Operating frequency range and Channel Bandwidths:
 - 4940 – 4990 MHz at 20, 40 MHz CBW (40 MHz CBW is prohibited under ISED RSS-111)
 - 5150 – 5250 MHz at 20, 40, 80 MHz CBW (only under FCC Rules)
 - 5725 – 5850 MHz at 20, 40, 80 MHz CBW
 - 5925 – 6425 MHz at 20, 40, 80, 160 MHz BW

Supporting geolocation based configuration capability

Condition of Use

The RADWIN 2000 E is a proprietary radio devices that can only be deployed and maintained by RADWIN professional installers or its authorized subcontractors

FCC Rules and ISED Regulation Restrictions

The device firmware is factory programmed to operate under the FCC rules and ISED regulation restrictions. The firmware is locked and inaccessible by any third party. The device incorporates geo-location capability and will only operate within the boundaries of the regional restrictions.

Antenna

The connectorized form factor can be connected to a wide range of directional antennas as detailed in the certified antennas table

The integrated form factor incorporates an integrated antenna.

Certified Antenna

Following are the antennas certified for use with the RADWIN 2000 E:

Antenna Type	Model Number	Antenna Max Gain (dBi)	Antenna Max Gain (dBi) @4.9GHz	Antenna Max Gain (dBi) @6GHz	Dir BW (deg)	Safe Distance (cm)
Integrated	MR0284310	24	22	--	9	135
Integrated	AX6400	24	22	24	--	135
External Flat	RW-9613-4960	23	22	--	10	135
External Flat	RW-9622-5001	28	26	27	5	205
External Dish	RW-9721-5158	28	28	--	5.6	185
External Dish	RW-9732-4958	32	23	--	4	300
External Dish	RW-9732-4965	25	25	25	7	145
External Dish	RW-9628-5872	--	--	28	5	20
External Dish	RW-9632-5872	--	--	32	3	20

Maximum Output Power

5725 – 5850 MHz band - FCC Part 15 Subpart E, ISSED RSS 247

The maximum output power can be set as follows, when operating in the 5.725-5.85 GHz band, under FCC 47 CFR Part 15.407 New Rules and ISSED RSS-247 regulations.

Total output power is limited to 29 dBm.

5150 – 5250 MHz band – FCC Part 15 Subpart E

The maximum output power can be set as follows when transmitting in the 5.15-5.25 GHz band, under FCC 47 CFR Part 15.407 Rule.

Total output power is limited to 28 dBm and the EIRP is 53 dBm

5925 – 6425 MHz band – FCC Part 15 Subpart E, ISSED RSS 248

The maximum output power can be set as follows when transmitting in the 5.925-6.425 GHz band, under FCC 47 CFR Part 15.407 Rule.

Total output power is limited to 12 dBm and the EIRP is 36 dBm

4940 – 4990 MHz band – FCC Part 90 Subpart Y, ISSED RSS 111

The maximum output power is set as follows, under FCC and ISSED regulations.

Total output power is limited to 23 dBm.



Warning

In 4.9 GHz band - the 40 MHz bandwidth is prohibited under ISSED RSS 111.



Avertissemen

Dans la bande de 4,9 GHz, la largeur de bande de 40 MHz est interdite en vertu de la norme ISDE RSS 111.

Radio parameters accessible by end-user

The following parameters can be accessed by user:

1. Output Power (constrained to the limitations)
2. Frequency channel
3. Channel bandwidth