

Compliance Considerations

The Aprisa SRi is a professional radio product and as such must be installed by a suitably trained and qualified installer who is aware of the local regulatory requirements existing at the time of installation and is capable of ensuring that the regulations are adhered to.

The maximum Equivalent Isotropic Radiated Power (EIRP) permitted from the Aprisa SRi is regulated and must not exceed the limits provided in the following table. To meet this regulatory requirement, knowledge of the antenna gain, and feeder cable loss must be known before setting the transmitter output power.

Regulatory Requirement	Frequency Range	Maximum EIRP ¹	SRi Equivalent Maximum Average Power (R_{dBm})
USA, FCC Part 15.247	902 MHz to 928 MHz	+36 dBm PEP	+32 dBm
Canada, ISED RSS-247	902 MHz to 928 MHz	+36 dBm PEP	+32 dBm
Australia, ACMA AS/NZS 4268	915 MHz to 928 MHz	+30 dBm	+30 dBm
New Zealand, General User Radio Licence for Short Range Devices	915 MHz to 928 MHz	+30 dBm	+30 dBm
New Zealand, General User Radio Licence for Short Range Devices	920 MHz to 928 MHz	+36 dBm	+36 dBm
Brazil, Act No. 14.448, of December 4, 2017	902 MHz to 907.5 MHz & 915 MHz to 928 MHz	+36 dBm PEP	+30 dBm
Mexico, NOM-208-SCFI-2016	902 MHz to 928 MHz	+36 dBm PEP	+30 dBm
Peru	915 MHz to 928 MHz	+30 dBm	+30 dBm

The Aprisa SRi has a maximum mean output power of +26 dBm into a 50 ohm antenna which equates to a maximum peak power of +30 dBm PEP. To determine the maximum power to be set on the Aprisa SRi, the following installation parameters must be known:

1. Aprisa SRi equivalent average power for maximum permitted EIRP (specified in dBm) R_{dBm}
2. Antenna isotropic gain (specified in dBi) G_{dBi}
3. Feeder coax loss between Aprisa SRi and antenna (specified in dB/m) $L_{dB/m}$
4. Length of feeder coax between Aprisa SRi and antenna (specified in metres) d_m

From these the above information, the power setting of the Aprisa SRi (P_{dBm}) can be calculated to ensure operation within the regulatory requirements using the formula:

$$P_{dBm} = R_{dBm} + (d_m \times L_{dB/m}) - G_{dBi}$$

Antenna gain information can be obtained from the Antenna manufacturer and is either expressed in terms of dBi, referenced to an isotropic radiator, or dBd, referenced to a dipole.

If the gain is expressed in dBd, it can be converted to dBi by adding 2.15 dB to the gain value.

The following is an example of transmitter power calculations:

Antenna Type and Gain	Feeder Coax Length and Loss	Regulatory Limit	Maximum SRi Power Setting
Yagi, 11 dBi	10 m of ½" Helix @ 0.11 dB/m gives 1.1 dB loss	+36 dBm PEP	22 dBm
Panel, 12 dBi	33 m of RG214 @ 0.22 dB/m gives 7.3 dB loss	+30 dBm	25 dBm
Dipole, 3.5 dBi	3 m of RG214 @ 0.22 dB/m gives 0.66 dB loss	+30 dBm	26 dBm
Grid, 18 dBi	15 m of ½" Helix @ 0.11 dB/m gives 1.65 dB loss	+30 dBm	13 dBm

¹ These are correct at the time of printing. The installer must ensure that the installation complies with the regulatory requirements at the time of installation.

Canada

This radio transmitter Aprisa SRi ISED: 6772A-SI902M160 has been approved by Industry Canada to operate with the antenna types listed below with the maximum permissible gain indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

Cet émetteur radio Aprisa SRi ISED: 6772A-SI902M160 a été approuvé par Industrie Canada pour fonctionner avec les types d'antenne énumérés ci-dessous avec le gain maximum autorisé indiqué. Les types d'antennes non inclus dans cette liste, ayant un gain supérieur au gain maximum indiqué pour ce type, sont strictement interdits d'utilisation avec cet appareil.

Mexico

La operación de este equipo está sujeta a las siguientes dos condiciones:

- (1) es posible que este equipo o dispositivo no cause interferencia perjudicial y
- (2) este equipo o dispositivo debe aceptar cualquier interferencia, incluyendo la que pueda causar su operación no deseada.

Este equipo ha sido diseñado para operar con las antenas que enseguida se enlistan y para una ganancia máxima de antena de 6 dBi.

El uso con este equipo de antenas no incluidas en esta lista o que tengan una ganancia mayor que 6 dBi quedan prohibidas. La impedancia requerida de la antena es de 50 ohms.