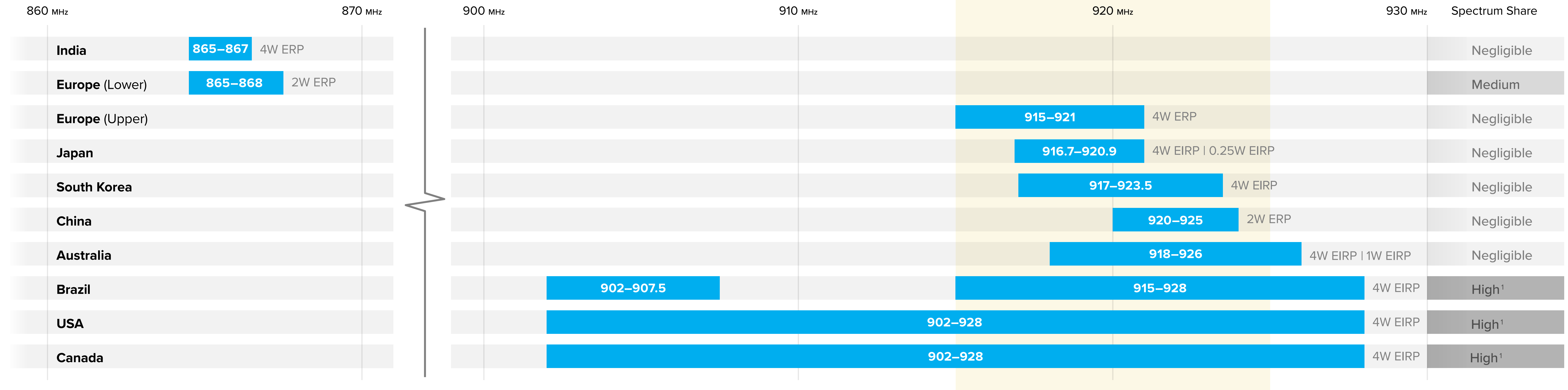


RAIN RFID (UHF RFID) — Global Radio Spectrum Allocations

ISO/IEC 18000-63 (GS1 Gen 2) | 860–930 MHz | Same protocol, different frequencies & power limits by region



1. High, with applications with same power as RFID and applications with around 10x higher power

Access Methods

India	AFA
Europe	AFA
<i>Lower: 100 ms break or channel change after 4 s. Lower + Upper: Operation only when necessary to perform the intended operation, i.e. when RFID tags are expected to be present.</i>	
Japan	NCS licensed, CS registered, CS free of license and registration
South Korea	FHSS, LbT, or 2% duty cycle
China	FHSS
Australia	FHSS
Brazil	FHSS
USA	FHSS
Canada	FHSS

Glossary

FHSS: Frequency Hopping Spread Spectrum — reader hops rapidly between channels. e.g. used by FCC (US).
AFA: Adaptive Frequency Agile
CS: Carrier Sense (or LbT — Listen before Talk)
NCS: Non-Carrier Sense
LbT: Listen Before Talk — reader checks the channel is clear before transmitting.
EIRP: Equivalent Isotropic Radiated Power — power referenced to an ideal isotropic antenna.
ERP: Effective Radiated Power
ISO/IEC 18000-63 (GS1 Gen2): RAIN air interface protocol used by all RAIN RFID globally — same standard in every region shown above.

Power Conversion Reference

$$\text{EIRP/W} = \text{ERP/W} \times 1.64 \quad | \quad \text{EIRP/dBm} = \text{ERP/dBm} + 2.15$$

As stated	Actual EIRP	EIRP/dBm
FCC: 4 W EIRP	4.0 W EIRP	36 dBm
EU lower: 2 W ERP	3.28 W EIRP	35 dBm
EU upper: 4 W ERP	6.56 W EIRP	38 dBm

RAIN Alliance Resources

For the most current global radio spectrum information, visit the RAIN Alliance Radio Regulations Advisory Council (RRAC): www.therainalliance.org/radio-regulations-advisory-council

The RRAC publishes Country-by-country frequency allocation updates, EU upper band (915 MHz) adoption status by country, Regulatory standards and technical guidance documents, and US FCC petition updates.