

SICK Pty Ltd • Australia
May, 2025

Subject: Response to ACMA Consultation on Remaking the Low Interference Potential Devices Class Licence

Dear ACMA Consultation Team,

I am writing to provide feedback on the proposed changes to the Low Interference Potential Devices (LIPD) Class License, specifically concerning the ISM band and its impact on UHF RFID technology. With 25 years of experience in RFID Spectrum Management and working with regulators around the world, I bring a wealth of knowledge and expertise to this submission.

Importance of UHF RFID Technology: UHF RFID technology is integral to various sectors, including logistics, retail, healthcare, and manufacturing. It enables efficient and accurate tracking of assets and inventory, which is essential for modern supply chain operations. Ensuring that the regulatory framework supports the continued growth and innovation in UHF RFID applications is vital for these industries.

Proposed Changes and Their Implications: The proposed changes to the LIPD Class License, particularly those affecting the ISM band and Ultra High Frequency (UHF), are acceptable, including the changes proposed in Section 26: Table-5 and Section -2, and the removal of the reference to ISO/IEC 18000-6C.

However, it is important for ACMA to consider the following points:

- **Frequency Allocation:** Over the past 20 years, UHF RFID devices operating at 4W EIRP in the 920-926 MHz band have not caused any reported interference issues. This long history of trouble-free operation supports the case for allocating more bandwidth to 4W UHF RFID within the ISM band. The technology has advanced significantly, and current channel management techniques, such as Frequency Hopping Spread Spectrum (FHSS), perform well within the FCC's ISM band range of 902-928 MHz. However, the narrow ACMA 6 MHz bandwidth currently available for UHF RFID limits its use in dense deployments. To fully realize the potential of UHF RFID, an ideal channel bandwidth of around 10 MHz is recommended.

I propose ACMA considers harmonising the bandwidth from 918-928 MHz, for both 1W EIRP and Higher Power Devices.

- **Power Limits:** Increasing power limits for UHF RFID devices operating in the ISM band requires further review. The industry requests more power to solve challenging RFID applications involving metals and liquids. Maintaining optimal power levels for specific applications is crucial for the reliable performance of UHF RFID systems. The European Union (ETSI) regulation allows for 4W ERP (equivalent to 38.15 dBm EIRP), while Australia is still under 4W EIRP (equivalent to 33.75 dBm ERP). There is a need to align the power levels to new standards.
 - **Current ACMA Power Limitations at 4W EIRP:** $36 \text{ dBm EIRP} - 2.15 = 33.75 \text{ dBm ERP}$.
 - **ETSI Upper Band Power Limits (4W ERP):** $36 \text{ dBm ERP} + 2.15 = 38.15 \text{ dBm EIRP}$.

I propose changing the ACMA radiation power limits to 6.56W EIRP, aligning with the ETSI regulation. This is addition to harmonising the bandwidth.

Emerging RFID Use Cases: Recent advancements in RFID technology have introduced new use cases that require more power and bandwidth, such as:

- **Sensor Tags:** These tags integrate sensors to monitor environmental conditions like temperature, humidity, and motion. They require higher power levels to transmit sensor data reliably and efficiently.
- **Real-Time Location Systems (RTLS):** RTLS applications use RFID technology to provide continuous, real-time tracking of assets and personnel within defined spaces. These systems often require increased bandwidth and power to ensure accurate and timely location updates.

My pervious work with ACMA: Praveen Kannan has been actively involved in advocating for the increase of the power limit for UHF RFID devices to 4 watts. His efforts included conducting extensive testing and submitting scientific data to ACMA to demonstrate the benefits and minimal interference risks associated with higher power levels. This advocacy led to the successful approval of the 4-watt power limit in 2008, aligning Australia's regulations with international standards. This milestone has significantly enhanced the robustness and performance of UHF RFID systems in Australia. Praveen's experience includes collaboration with key stakeholders such as Vodafone and Kordia Wireless, ensuring comprehensive industry support and alignment.

Praveen Kannan has been a strong supporter of initiatives to enhance RFID technology. His endorsement of higher power limits and broader bandwidth for RFID applications has been instrumental in aligning Australian standards with global best practices. His collaboration ensures that the regulatory framework remains robust and conducive to technological advancements.

Recommendations: To address the concerns mentioned above, I recommend the following actions:

- **Stakeholder Engagement:** Foster continuous dialogue with industry experts, manufacturers, and users of UHF RFID technology to ensure the regulatory framework meets the market's needs and expectations. I am willing to lead this facilitation on behalf of the broader industry.

Conclusion: The review of the LIPD Class License for the ISM band is a critical step in ensuring the continued success and growth of UHF RFID technology. By carefully considering the implications of the proposed changes and engaging with stakeholders, ACMA can create a regulatory environment that fosters innovation while maintaining the integrity of existing systems.

Thank you for the opportunity to provide feedback on this important matter. We look forward to the positive outcomes of this consultation process.

Sincerely,



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