

10/05/2025

ACMA

**Subject: Remaking the Low Interference Potential Devices Class Licence – UMD Submission**

Dear ACMA Consultation Team,

I am writing to provide support 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.

Our company is a leading RFID solutions provider in Australia and have developed considerable technology and IP around RFID including design of RFID readers. We have been involved in the Automatic Identification and Data Capture (AIDC) Industry since 1983, and involved in RFID systems and solutions since 2000 (starting with Low Frequency RFID technology for animals)

I have also chaired the AIDC Australia Association and started the RFID Australia Associations (many years ago).

I was also involved the original 4W EIRP Testing during the original ACMA RFID regulatory change to 4W EIRP in the 920-926 MHz band.

I am in full support of the GS1 Australia submission and would like to make the following supporting comments.

The comments are made from our real-world UHF RFID application and solution experience with over 20 years in the UHF RFID space.

- (1) Frequency Allocation – and the potential of increasing the UHF RFID band from 920-926MHz:

The market is already requesting solutions for Real Time Location Systems (RTLS) which requires the ability to continuously monitor inventory in real time, typically in retail store level and distribution centers.

RTLS will require the significant increase in the number of UHF RFID readers /antenna density. An expanded frequency bandwidth will considerably support the ability design workable solutions without interference.

- (2) Power Limits – and the potential to increase UHF RFID power level limits above 4W EIRP

We support the increase of power limit for the UHF RFID device operating in the ISM band from 4W EIRP to 6.56W EIRP.

Increase in power will considerably help in making many UHF RFID projects viable. As this will expand the read range of UHF tags, including smaller size tags, which have a limited read range resulting in limited utility.

We are also very familiar with the *Australian Government Radiation Protection and Nuclear Safety Agency* (ARPANSA) Radiation Protection Series S-1 (Rev. 1), Standard for Limiting Exposure to Radiofrequency Fields - 100 kHz to 300 GHz, which we use to provide a safety statement when requested.

Increasing the power limit from 4W EIRP to 6.56W EIRP will have the following impact:

Scenario	Incident Power Density (limit) (W/m <sup>2</sup> )	Minimum Distance required between antenna and General Public based on 4W EIRP (m)	Minimum Distance required between antenna and General Public based on 6.56W EIRP (m)
Local (eg. Head)	20.6	0.124	0.159
Whole body	4.61	0.263	0.337

These are modest increases, and based on our experience and past projects, these changes would not impact any past RFID deployments. ie. No changes to system geometry would be required to stay within safety limits.

### (3) Passive UHF RFID Sensor Tags

There is a growing range of passive UHF RFID tags with integrated sensors (eg. Temperature), including a growing range of multiple and sophisticated sensors tags (eg. Humidity, strain et) whose performance and project viability will require higher power (based on current tests we have done)

Yours Sincerely



Geoffrey Ramadan  
CEO and Chief Solutions Architect  
Unique Micro Design Pty Ltd  
gramadan@umd.com.au