

## Interference report – The Base shopping complex

### Primary details

Investigation date	12/01/2022
Radio Spectrum Investigator	Mervyn Frericks
Client	The Base shopping complex
Location	Te Rapa shopping complex, Hamilton
Service impacted	433.92 MHz GURL – vehicle remote fobs
Case number	31375


### Test equipment

Equipment Make	Model	Serial Number	Calibration due date
Rohde & Schwarz	PR100 portable receiver	100104	09/07/2022
Rohde & Schwarz	HE400UWB	ID:4104.6900.02-102172-Lw module	N/A

### Result

The source of interference was suspected to be caused by a faulty programmable logic controller that caused a relay to latch on the TX and continuously TX on 433.92 MHz. The relay was removed and the interference ceased.

### Signed

Name	Signature
Mervyn Frericks	

### Background

The Base shopping complex's Facilities Manager contacted RSM to help investigate the cause of interference into its customer's vehicles with their remote fobs since a power outage was restored on Saturday.

## Findings

After discussing the likely cause to be their legacy wireless car-park monitoring system the location of the source was quickly located. Transmitting on 433.92 MHz the source was from the rooftop of the main complex where a control box was located.

The Facilities Manager called in an electrician to isolate the power to the control box. The electrician discovered the programmable logic controller (PLC) may have caused the TX relay to latch on after the power was restored.

## Conclusions

The source of interference was identified to be the shopping complex's legacy wireless car-park monitoring system that was not fully decommissioned. Once the power was isolated the interference ceased.

After visual examination, the transmitter module (25 mW) and together with the antenna system was estimated to be within the maximum allowed radiated power limit (-16 dBW eirp) as prescribed in the General User Radio Licence (GURL) for Short Range Devices.

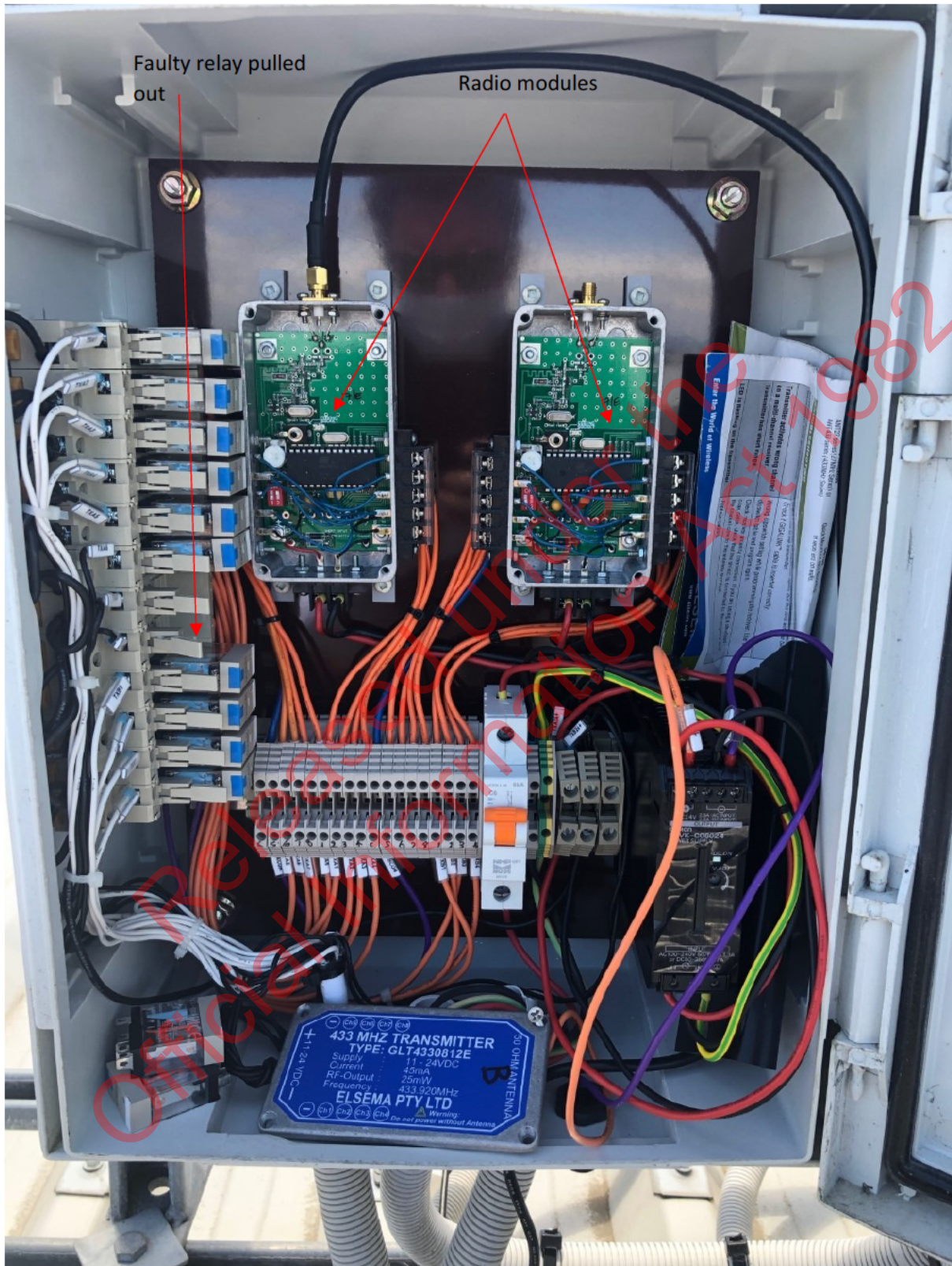
The transmit frequency 433.92 MHz was also observed to be within the GURL band limits. An audit of the transmitter module to determine compliance to a radio standard and the transmitter system to determine the exact level of radiated power may be considered.

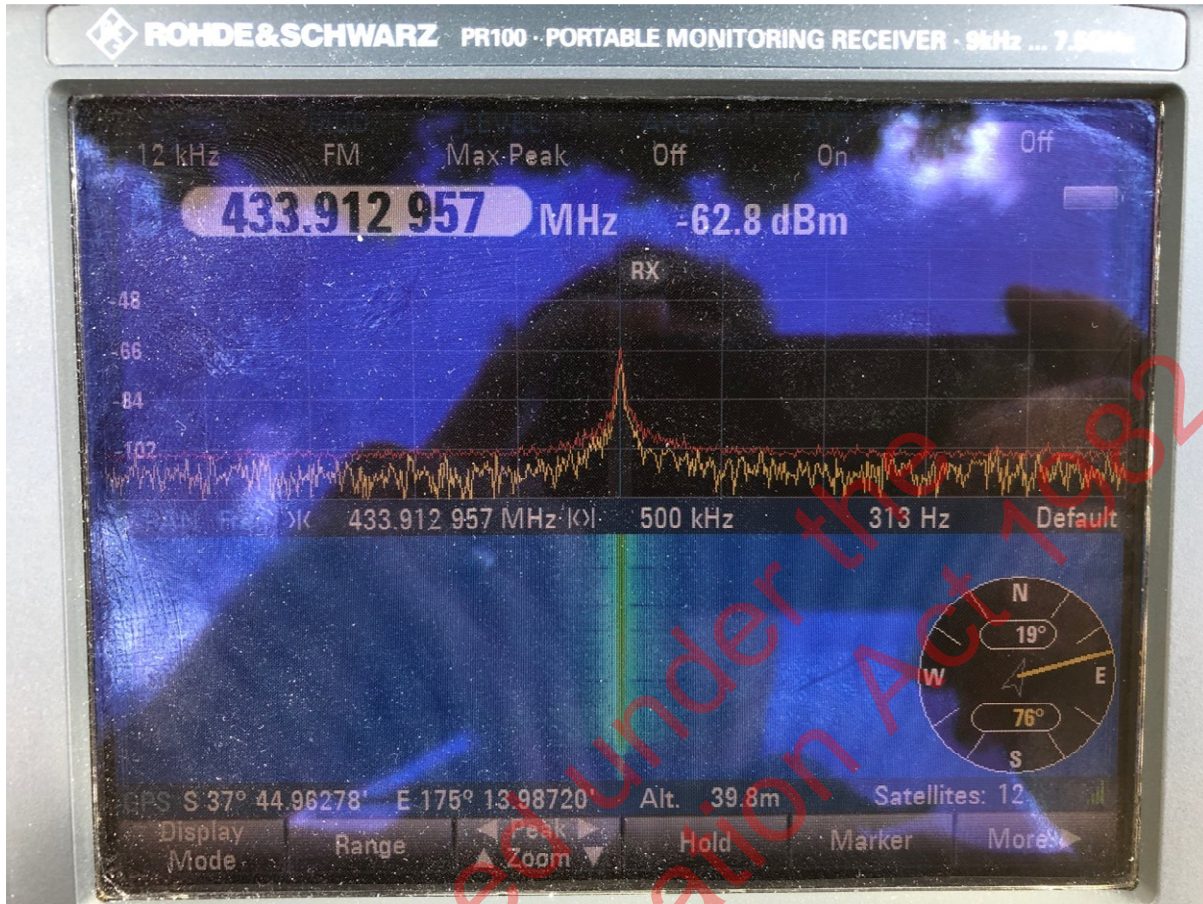
Released under the  
Official Information Act 1982

Appendix









Spectrum trace identified from the antenna location.

Released Under the Official Information Act 1982