



# Managing Interference

Compliance & Field Operations Section

communicating | facilitating | regulating

Australian Communications and Media Authority presentation delivered to ARCIA members in Perth on 30 June 2016.

## **Compliance and Field Operations Section**

- Responsible for Interference management
- Responsible for managing ACMA's PCAs (Priority compliance areas)
- Investigate complaints of interference to radiocommunications and domestic services (RCI & DSI)
- Conduct complex investigations into breaches of the Radio Communications Act and Telecommunications Act
- Compliance activities (audits and site inspections / awareness activities)
- Support major events including, Australian Open Tennis, Cricket World Cup, Asian Cup, Formula 1 GP, Moto GP, CHOGM, and the G20.

### **Causes of interference to radio communications**

- Incorrectly installed equipment, wrong frequency / power levels
- Poor installation practices
- Non-harmonised DECT devices, cordless phones, baby monitors
- Lighting systems including LED Down lights,
- Spurious mast head amplifiers,
- Electrical infrastructure, Solar power system inverters,
- Mobile Phone repeaters,
- Unlicensed operation – unintentional or deliberate/malicious,
- Not operating in accordance with licence conditions



These 80 odd non-standard land mobile radios were recently being use by a traffic control company and were programmed with a variety of unlicensed frequencies. The land mobile equipment standard, other than specifying numerous technical parameters, also prohibits front panel programming for land mobile frequencies (AS/NZS 4295:2004).

## Melbourne man guilty of Radiocommunications Act offences



A Melbourne man who deliberately disrupted a taxi company's radiocommunications system using a non-standard radio transmitter, has been fined \$3,500 and ordered to pay costs after pleading guilty to three offences under the *Radiocommunications Act 1992* (the Act).



An RFID tag used to track and monitor bees in Tasmania was found causing harmful interference to mobile phone service in the 900 MHz band. The owner and operator of these insects was educated accordingly and rectified the issued.





However it doesn't take an expensive hobby or commercial drone to cause harmful interference. This \$20 toy drone, purchased over the net from the United States, shut down a mobile phone site in Melbourne. It was found operating on the US ISM Band on 911 MHz.



Illegal Repeater – Blue Mount





There are also those person who wish to set up their own radio networks without following the regulatory process. These unlicensed systems have the potential to cause harmful interference to other licence systems and this setup did in Victoria, an illegal repeater at Blue Mount in Victoria.



Tracking down interference generated by unlicensed operators can also be challenging, in particular when individuals have gone to great lengths to conceal installations. This site on Dunns Hill east of Melbourne was the target of a covert installation of an unlicensed repeater.



The repeater was hidden behind this bearings board.



The repeater comprising of 2 Motorola GM300s and diplexor.



The power supply was also carefully hidden behind the wall and spliced into the mains power. A number of similar installations have also been uncovered.

## Spectrum Management

- Radiocommunications are primarily regulated through the use of licences. There are many different types of licences, however the three main types of licensees used are;
- Class licences
- Spectrum Licences
- Apparatus licences



## Spectrum Management – Class licence

- > Some wireless links between buildings
- > Garage door openers
- > DECT cordless phones
- > Baby Monitors
- > RFID devices
- > Wifi
- > Radio controlled vehicles
- > Security systems
- > Remote Car Keys
- > CB Radios
- > VHF Marine Radios





## Spectrum Management – Apparatus License

- > Aeronautical
- > Aircraft
- > Amateur
- > Broadcasting
- > Earth Station
- > Fixed links
- > Maritime Coast
- > Maritime Ship
- > Outpost
- > Scientific
- > Land Mobile



## **Spectrum Management – Apparatus License – Land Mobile**

- > Land Mobile Systems
- > Paging Systems
- > Ambulatory System (includes Area Wide Licences)
- > PABX Cordless phone
- > CB Repeaters



## Spectrum Management – Third Party Authorisations

- > A third-party authorisation is a private commercial agreement that allows a spectrum or apparatus licensee to authorise another person or organisation to operate a radiocommunications device. Persons authorised to operate radiocommunications devices under such arrangements are known as third-party users
- > If you authorise a third party to operate devices under a spectrum or an apparatus licence, it must be in writing, and you should
- > inform that third party of their obligations under the *Radiocommunications Act 1992* (the Act) and the conditions of the licence
- > take ultimate responsibility for ensuring that all operations of these devices comply with the conditions of the licence.



# DO YOU SELL OR RENT TWO-WAY RADIOS?

LISTEN UP, THIS IS FOR YOU!



If you sell or rent two-way radios with your licensed frequency pre-programmed into the radio, you **MUST** give your written authorisation to the customer—it can even be in the invoice or rental agreement.

## They should know:



The frequencies they're allowed to use



The duration of the authorisation



The location they're allowed to operate in



Any other conditions that must be met

As the licensee, you may be liable if the radio interferes with other services. And more importantly, it could risk lives.

Further information at <http://www.acma.gov.au/Industry/Spectrum/Radiocomms-licensing/Apparatus-licences/do-you-sell-or-rent-two-way-radios>

Causing interference to radiocommunications can be costly.

Over the past six months, the ACMA has issued infringement notices totalling \$17,850 to a number of land mobile apparatus licensees who have an area-wide special condition on their licence. These licensees had authorised third-party users to operate radiocommunications equipment that caused interference. The infringement notices followed three separate investigations by the ACMA into allegations of interference to radiocommunications.



# INVOICE

Date: 05/04/2016  
Invoice # 001

Communications  
Company  
L32, 360 Elizabeth Street  
Melbourne VIC 3000

**SAMPLE ONLY**  
This is just **ONE** way that you could authorise a third-party. This example does not suit all scenarios and you may need to draw up a different type of authorisation depending on your circumstances.

Joe Citizen  
Joe Citizen Contracting  
10 Smith street  
Melbourne VIC 3000  
0400 000 000  
Customer ID 00001

- Please note:
- i) Operator of the above frequency(s) must be aware of and fully comply with all relevant sections of the Radiocommunications Act 1992 (the Act), including any applicable Licence Conditions Determinations made under the Act.
  - ii) Operators must only use the frequency(s) as authorised under this invoice. If the frequency(s) are used outside of these parameters the operation will be unlicensed and interference may be caused to other operators. Penalties under the Act may apply.
  - iii) On completion or cancellation of the hire, Communications Company must be informed and the frequency(s) must no longer be used.

Qty	Description	Unit Price	Line Total
1	Hire Communications Company frequencies for period 21 March to 21 April 2016 inclusive.  ACMA licence number: xxx Frequency: xxx Operating location: xxx Other conditions: xxx	x	x
4	Hire two-way radios for period 21 March to 21 April 2016 inclusive.	x	x

<b>Payment details</b>	Subtotal	x
<input type="checkbox"/> Cash	Ref Fee Tax	=
<input type="checkbox"/> Check or electronic transfer	Total	x
<input type="checkbox"/> Other		
Payment is due within 14 days.	<b>Office use only</b>	

This is an example on how a third party authorisation can be included in a customer invoice - <http://www.acma.gov.au/theACMA/engage-blogs/engage-blogs/Spectrum/What-should-a-third-party-authorisation-look-like>

## Minimising the risk of interference

### Area wide licensing

- > Note special licence condition - No interference, no protection
- > Ensure a third party authorisation is provided
- > check the [Register of Radiocommunications Licences](#) to ensure that the frequencies being used are not licensed to another fixed licensee in that area.
- > Do not operate in the same location for any more than four weeks, otherwise obtain a site-specific licence, which authorises the use of radiocommunications devices in a single location for extended periods



## Minimising the risk of interference

### UHF CB Equipment compliance

- > Equipment standard – AS/NZS 4365:2011
- > Applies to 80 Chnl dedicated UHF CB radios, as well as commercial radios that have been compliance tested to this standard
- > Chnls 22 and 23 must not be enabled for voice
- > Digital modes must not be used
- > Channels displayed must equal the frequency, i.e. Chn 1 = 476.425 Mhz.
- > A manual must be provided explaining the use of CB chnls, including emergency channels 5/35.

## **Minimising the risk of interference**

### Importer and manufacturer obligations

- > Ensure equipment meets EMC regulatory requirements
- > Ensure devices meet all Australian standards
- > Hold compliance folders where required
- > Apply RCM labels where required
- > If unsure of requirements, engage a consultant



## Minimising the risk of interference

### Supplier obligations

- > Supply only equipment compliant to the relevant Australian Standard.
- > Ensure equipment is operating in the correct frequency
- > Look for the compliance mark when purchasing equipment



Further information at <http://www.acma.gov.au/Industry/Suppliers/Product-supply-and-compliance/Steps-to-compliance>

## Reporting interference or non compliance

- > Interference; using an R066 form to [interference@acma.gov.au](mailto:interference@acma.gov.au) or via online at [acma.gov.au](http://acma.gov.au)
- > Non compliance; [compliance.operations@acma.gov.au](mailto:compliance.operations@acma.gov.au) or via online at [acma.gov.au](http://acma.gov.au)
- > General licensing, interference or compliance queries; ACMA Customer service line, 1300 850 115 or email [info@acma.gov.au](mailto:info@acma.gov.au)

**THANKYOU**

