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Wireless microphones

Sharing radiofrequency spectrum by wireless microphones and television broadcasting services

The ABA is currently planning for the introduction of digital television services in Australia. Digital broadcasting will commence in certain areas from 1 January 2001 with an eight year simulcast period.

Existing television broadcasting services (which broadcast in analog mode) and wireless microphones share parts of the same radiofrequency band. The advent of digital television services will reduce the amount of radiofrequency spectrum available during the simulcast period.

As digital television services will operate on frequencies previously unused for broadcasting services, this has the potential to cause interference to wireless microphones. Wireless microphones operate on an opportunistic basis within the broadcasting bands and are not afforded protection from any interference that may be caused by local television signals.

In what frequency bands do wireless microphones operate?

Many of these devices operate in the frequency band between 174 and 230 MHz (VHF Band III – channels 6 to 12). Some operate in the UHF frequency band between 520 and 820 MHz (channels 27 to 69).

What are the licensing arrangements for wireless microphones?

• Wireless microphones operating in the 174–230 MHz and 520–820 MHz frequency ranges may operate without obtaining an individual (apparatus) licence providing their operation is in accordance with the conditions of a class licence made by the Australian Communications Authority (ACA). This class licence is referred to as the Radiocommunications Class Licence

(Low interference potential devices).

It is important to note that the class licence states:

Low interference potential devices will not be afforded protection from interference caused by other radiocommunications devices.

• An apparatus licence is required to operate wireless microphones in frequency bands not covered by the class licence. These are available from the ACA, and ACA Area Offices can advise on alternative licensing options.

• To operate wireless microphones within the broadcasting services bands but at a higher effective radiated power level than the 3 mW permitted by the class licence, ABA approval is required before the ACA can issue the appropriate apparatus licence.

What effect will digital television have on wireless microphones?

A wireless microphone operated on a frequency within a television channel carrying a digital television signal may experience interference. Whether interference will actually occur will depend on:

• how close the person using the device is to the television transmitter site serving that area; and

• how strong the television signal is where the device is used.

When will digital television transmissions start in my area?

Parliament has passed legislation requiring broadcasters in the five mainland capital cities to commence digital television transmissions on 1 January 2001. Broadcasters in regional areas must commence between 1 January 2001 and 1 January 2004. Remote areas will commence broadcasting at a date to be determined by the ABA.

Digital television will commence on

1 January 2001 in a number of areas including Sydney, Newcastle and Wollongong in New South Wales, Melbourne, Brisbane and Toowoomba in Queensland, Adelaide, Perth, Hobart, Canberra and Darwin.

Broadcasters may conduct test transmissions before formal commencement. Some broadcasters are currently undertaking short-term test transmissions from time to time in particular areas. Closer to the 2001 commencement date, test transmissions will become more prevalent.

What channels will digital television use in my area?

The ABA has completed digital channel plans for all 11 areas identified above, except Perth, which will be finalised early 2000. Planning for other regional areas which will commence digital transmissions sometime between 1 January 2001 and 1 January 2004 has started. Digital channel plans for these areas should be completed in 2001, if not before. Until digital channel plans for an area are completed it is not possible to provide any certainty about what channels will be used.

What is the ABA doing to educate and inform the industry and public about interference?

Interference can be avoided by appropriate planning and exchange of information. The ABA is:

• contacting suppliers of wireless microphones to ask that they alert existing users of their equipment about potential interference from digital television operations; and

• providing information to key industry bodies.

What is the ACA's role?

Wireless microphones generally operate under licences made by the ACA.

Digital channels in areas in which planning has been completed are:

Area served		Channel assignments						
NSW	Sydney	ABN	ATN	TCN	TEN	SBS	CTV	Not assigned
	analog	2	7	9	10	28	31	
	digital	12	6	8	11	34	*	29
	Newcastle	ABHN	NEN	NBN	NRN	SBS		
	analog	5A & 48	54	3	57	45		
	digital	37	53	36	51	38		56
	Wollongong	ABWN	CBN	WIN	CTC	SBS		
	analog	56	65	59	62	53		
	digital	51	38	36	37	54		50, 57
Vic	Melbourne	ABV	HSV	GTV	ATV	SBS	CTV	
	analog	2	7	9	10	28	31	
	digital	12	6	8	11	29	*	32, 35
Qld	Brisbane	ABQ	BTQ	QTQ	TVQ	SBS	CTV	
	analog	2	7	9	10	28	31	
	digital	12	6	8	11	36	*	38
	Toowoomba	ABQ	STQ	RTQ	TNQ	SBS		
	analog	56	59	65	62	53		
	digital	55	58	64	61	52		66, 67, 68
SA	Adelaide	ABS	SAS	NWS	ADS	SBS	CTV	
	analog	2	7	9	10	28	31	
	digital	12	6	8	11	30	*	33, 36
Tas	Hobart	ABD	TVT	TNT	SBS			
	analog	2	6	31	28			
	digital	8	7	10	9A			11, 12
NT	Darwin	ABD	TND	NTD	SBS			
	analog	6	34	8	28			
	digital	30	32	31	29			33, 35, 36
	Batchelor	ABD	QQQ	NTD	TND	IMP	SBS	
	analog	69	51	60	63	66	54	
	digital	56	50	59	62	65	53	47, 48, 49
ACT	Canberra	ABC	CBN	WIN	CTC	SBS		
	analog	9	34	31	7	28		
	digital	9A	12	11	6	30		40, 41

* The Television Broadcasting Services (Digital Conversion) Act 1998 states that the digital transmission of community television services currently operating on the sixth analog channel, will be in spectrum allocated for use for the provision of datacasting services.

Digital channels identified for areas in which draft DCPs have been released include:

Area served		Channel assignments (including proposed digital assignments)						
WA	Perth	ABW	TVW	STW	NEW	SBS	CTV	Not assigned
	analog	2	7	9	10	28	31	
	digital	12	6	8	11	29	*	32, 35, 38
	Lancelin	ABW	TVW	STW	NEW	SBS		
	analog	53	56	59	62	65		
	digital	54	57	60	63	64		66, 67
	Toodyay	ABW	TVW	STW	NEW	SBS		
	analog	40	43	46	49	34		
	digital	57	60	63	64	54		66, 67

What should wireless microphone users do?

Wireless microphone users should consider taking several steps:

1. Check equipment to ascertain:
 - the operating frequency;
 - the brand or manufacturer; and
 - whether the equipment can be retuned (and over what frequency range).
2. Keep abreast of digital test transmissions by:
 - watching the local press for public notices published by broadcasters

advising of test transmissions; or

- contacting local television stations to ask for advice of any upcoming test transmissions.

3. Wireless microphone users with equipment operating on a channel to be used for digital television in their area, should consider making budgetary provisions to either modify existing equipment or purchase new equipment. However, it is not recommended that permanent changes are made until digital channel plans are completed for their area. Please

check the digital channel plans for your area before choosing wireless microphone frequencies.

For more information, contact:
Australian Broadcasting Authority
 Web site: www.aba.gov.au
 Introduction of digital television FAQ: www.aba.gov.au/what/digital/faq.htm
 Tel: (02) 6256 2800.
Australian Communications Authority
 Low interference potential device: www.aca.gov.au/legal/licence/class/lipd.pdf
 Class licences: www.aca.gov.au/licence/class/index.htm
 Local area offices: www.aca.gov.au/contact.htm