

Australian Communications and Media Authority

FM broadcasting services band in the Perth RA1 licence area - [consultation 17/2021](#)

In **August 2009** DAB+ channel 9B commenced transmission, which includes the broadcast of 9 radio's 6PR and Capital Radio's 6IX. Now the Carmel transmitter is also carrying 9 Radio's 6GT, NTS, Capital Radio's My Perth DAB Radio and Kix Country along with 22 commercial competitors and 7 community stations. Note: 9 Radio's 6GT & NTS, Capital Radio's My Perth DAB Radio and Kix Country are not available on analog radio. Neither is Smooth FM which is on FM in other cities.

At the same time DAB+ channel 9C commenced transmission of ABC and SBS programs, which has increased to 18 programs.

On 22 December 2019 DAB+ 8C Mandurah commenced transmission with Wave and Coast.

There are now 50 DAB+ programs compared 16 analog programs along with a great improvement in sound quality compared to AM.

Using Commercial Radio Australia's statistics for all DAB+ licence areas, **Perth has just under 500,000 DAB+ listeners, which is 24 % of Perth population. With the exception of 6IX other Perth broadcasters don't promote DAB+ reception, instead they promote listening by mobile broadband using Apps.**

On **25th June 2013** Bunbury TV stations BTW 3 which used 87 – 92 MHz and ABSW 5 (ABC WA) which used 101 – 108 MHz were switched off. These broadcasts were moved to UHF as part of the digital TV switchover. Newcastle NSW had an identical situation. Many Sydney/Central Coast FM licences were granted a long time ago. **Why has the ACMA waited 8 years to recognise that these frequencies are available for FM?**

Current analog broadcasts

Callsign	Name/Owner	DAB+ Channel	AM Frequency (kHz)	Maximum CMF (V)	Transmitter Power (kW)
6PB	ABC News	9C	585	1210	10
?	SEN (Perth)		657	450	2
6WF	ABC Perth	9C	720	2900	50
6RN	ABC Radio National	9C	810	1980	20
6PR	9 Radio	9B	882	990	10
6RPH	Vision Aust	9C	990	705	5?
6IX	Capital	9B	1080	450	2
?	TAB Radio WA		1206	460	2
?	TAB Radio WA (Peel)		1449	424	2
?	SEN Peel	8C	-	-	-
Total Transmitter power					103 kW

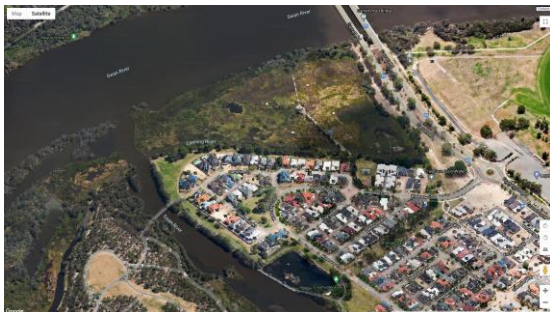
The program on DAB+ digital radio is for most broadcasters is identical. Some are in stereo.

The CMF is an indication of the comparative signal strength away from the mast. The total transmitter power consumption is 103 – 154.5 kW depending on sound volume. Does not include transmitter losses and cooling.



ABC Perth, Radio National, ABC News

BAI Communications, 601 Wanneroo Rd, Hamersley (11 km from the GPO) City of Stirling zoning



6PR, Vision Australia, 6IX, WA TAB

BAI Communications, Crake St Ascot (5 km from the GPO) City of Belmont zoning



SEN (Melbourne)

Telstra Marine Gngara Road Landsdale (11 km from the GPO)

The only AM broadcasts not on DAB+ are WA TAB and SEN (Melbourne). BAI Communications may find a single client at Ascot is unsustainable. The Telstra site is dry sand giving poor coverage. An ideal solution is to install a band 1 DRM transmitter on the BAI Communications Bickley, fed with WA TABRadio, SEN (Melbourne) and 6WSM for whole of Perth coverage. DAB+ in country towns coverage is small compared to Band 1 DRM which is larger than FM at the same power. Thus this would be a good trial site and the above sporting stations could use Journaline for all sport results and the slideshow function for photo finishes. The sale of land could be used for new DRM transmitters and their promotion.

Callsign	Name/Owner	DAB+ Channel	FM Frequency (MHz)	Maximum ERP (kW)
	Magic FM		87.8	1.64
?	VCA (Swan Valley)		88.5	0.2
6TCR	Twin City (Wanneroo/Joondalup)		89.7	2
?	China Radio International		90.5	5
6WSM	Western Sport		91.3	0.2
6MM	Wave	8C	91.7	5

Callsign	Name/Owner	DAB+ Channel	FM Frequency (MHz)	Maximum ERP (kW)
6RTR	RTR	9B	92.1	16
<i>6MMM</i>	SCA	9B	92.9	40
<i>6PER</i>	Nova	9B	93.7	40
<i>6MIX</i>	SCA	9B	94.5	40
6EBA	World Radio	9B	95.3	16
6NOW	ARN	9B	96.1	40
6SBSFM	SBS Radio	9C	96.9	100
6CST	Coast	8C	97.3	5
6ABCFM	ABC Classic	9C	97.7	100
6SON	Sonshine		98.5	16
6JJJ	ABC JJJ	9C	99.3	100
6NR	Curtin	9B	100.1	6.5
6NME	Noongar	9B	100.9	16
6SEN	Capital Community	9B	101.7	8
?	MAC (Macedonian)		103.3	0.05
?	Spice (Indian)		104.9	0.05
6IX	6IX translators	9B	105.7	4
			105.7	0.5
6HFM	Heritage		107.3	0.2
6CCR	Fremantle		107.9	1
?	Inspired	9B	-	-
Total effective radiated power				561

Italics means this broadcaster has identical main and stand by transmitters.

The total effective radiated power is greater than the transmitter power consumption

The program on DAB+ and AM or FM are for most broadcasters is identical. Most are in stereo.

DAB+ channel 8C covers the Peel Region including Mandurah 10 kW maximum effective radiating power. There is a blending of the Peel & Metro areas like Geelong and Melbourne.

DAB+ channel 9B covers the Perth Metropolitan area. The main transmitter is 50 kW maximum effective radiating power along with 0.3 kW in Perth City and 0.3 kW Perth's Northern Beaches.

In addition to the above programs there is an additional unique 16 commercial programs and a community broadcaster.

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In addition to the above programs there is an additional unique 6 ABC, ABC Perth for part of weekends has unique digital content. Seven SBS programs where SBS radio on FM is an amalgam of SBS 1 and SBS 2.

Incomplete DAB+ coverage. Since the TV channels surround the DAB+ transmitters which are on similar sites and the same power, the need for very low powered DAB+ repeaters on the TV translator sites should be investigated using the program [mySwitch \(digitalready.gov.au\)](http://mySwitch.digitalready.gov.au) with [EBU Technology & Innovation - Guidelines for DAB network planning](#) for Roleystone, Perth Coastal (Scarborough), Two Rocks (which is experiencing significant housing infill back to the existing Northern Beaches existing DAB+ repeater), Peel (ABC/SBS only) TV translators sites. This important

because most new housing has metal roofs, which block radio signals particularly in the Two Rocks area. Suburban infill is also occurring, where the concrete in multi-story buildings also stops radio signals.

FM radio started in Perth in 1977 with most transmitters starting in the 1980s. AM has been on air for a long time. **What is the age of all the transmitters listed above?** Norway's national network of Government and commercial broadcasters realised that their transmitters had reached the end of their economic life. This is the reason why all the national networks in Norway switched off all analog radio leaving DAB+. It took them a year to recover the ratings which are now accelerating. Switzerland is the next country will start the switch off in the middle of next year.

Perth is an ideal location for DAB+ broadcasting trial switchover and should be the first capital city to switch off all AM/FM transmitters. The money saved by broadcasts for maintenance and electricity should be used to promote the closure date for AM/FM transmitters. The current DAB+ Perth Transmitters are 12 years old so it would be wise to install an additional DAB+ transmitter as a backup in case of failures.

As you point out AM propagation in the Perth sandplain is poor, but the ABC also has high powered local radio transmitters with their own relevant programs in Wagin, Busselton, Dalwallinu and at low power Northam, so irrelevant ABC Perth signals are not required in those areas. These sites also have backup transmitters.

[The energy footprint of BBC radio services: now and in the future - BBC R&D](#) shows that AM is the most wasteful followed by the internet particularly mobiles, FM and by far the least DAB+. Our DAB+ transmitters can carry more programs than the DAB used by the BBC. This divides the transmitter cost by even more programs. This can be part of the broadcasters' contribution to minimising greenhouse gasses produced by Collie coal and natural gas to provide some of Perth's electricity.

Perth and Peel region has just over 2 million people, most of whom live on a "flat" sandplain, making it a good trial conversion site. It is large enough to be worthwhile for retailers to provide bulk receiver prices and to lift the 77 % of new vehicles to make 100 % by making the DAB+ radio option compulsory on vehicles headed to Perth. There are converters available for cars without DAB+ receivers. Simulcasting with no end date will only attract a few early adopters as with our digital TV switchover. It was only the treat caused by the analog switch off did volume sales occur.

It was the telcos wish to buy the 700 MHz band from TV broadcasters, which drove the government to switch TV from analog to digital. **For radio, it is the drop in transmission costs which can drive the metro analog to digital changeover for 17 million people. This reduction in cost can also be used to drive an AM/FM conversion to DRM for 8.5 million people in outside of DAB+ coverage.** (DAB+ operates at too higher frequency to give sufficient coverage area per transmitter.)

Perth residents like many Australians have had the telcos switch off analog in 2000, 2008 CDMA, 2016 2G, and in 2024 3G mobile phone technologies forcing phone users to buy new 4G or 5G phones. Why are broadcasters so unwilling to switch off 1920 AM technology and 1961 FM stereo technology?

I call on the ACMA refuse allocation of new FM licences for Perth and to decide with co-operation with the Department of Communications, broadcasters, vehicle & radio importers as well as retailers and to set a date for the revocation licence area wide Perth/Mandurah AM/FM licences.

Alan Hughes

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