

New Zealand Racing Board

**UHF Radiomicrophones:
Opportunities for future use**

Overview

The New Zealand Racing Board operates 6 mobile production control rooms for the Broadcast of NZ Racing, as well as 2 x mobile production control rooms for the production of vision displayed on Big Screens at premier race meetings. In addition to the multi-camera production facilities the NZRB also operates 7 x ENG camera kits for material acquisition.

All of these facilities utilise radio microphones and audio foldback equipment that operates in the 510-806MHz UHF band. All of these facilities operate throughout New Zealand.

The equipment used with the ENG camera kits operates in UHF Block 26 622.300MHz – 636.450MHz, Radio microphone equipment with the production trucks operate in Block 26 655.600MHz – 691.100MHz and Block 29 742.400MHz – 769.900MHz.

The transmit power of the equipment is either 50mW (-13dbm) or 100mW (-10dbm). Lower transmit powers do not provide reliable performance for the NZRB operations, which are normally external and often requiring a range of 200 – 300meters.

Even though the normal use of the Block 26 equipment is with the ENG camera kits, on premier race days, the equipment is often used by the Broadcast Production facility. It is not uncommon for up to 6 radio microphones and 2 IFB units being used by the NZRB on a major race day. In addition the On Course P.A. operation will also be using a couple of radio microphones.

Question 1

Do you agree with allowing radio microphones to continue operation in the 703 – 806 MHz band until 11 March 2015 to allow a phase out period, noting that radio microphones must cease operation if they are causing interference? If not, why?

Current Users of the 703 – 806 MHz Band should be allowed to continue using current equipment until 11 March 2015. Companies and individuals have invested in equipment that only operates in this band. Most equipment can be rechanneled, but this is at a cost.

It should also be noted that at most events, there is multiple use of radio microphones making the total investment quite substantial. It would be conditional that they did not cause interference to a licensed operator.

Question 2

Do you agree with permitting the operation of radio microphones at low power in the 698 – 703 MHz band (-20dBW / 10mW EIRP) on a non-interference basis?

Radio microphones with a transmit power of -20dbw / 10mW are often associated with inside use. E.g. Speaker to local PA system. The RF path is a matter of meters. For Schools, Churches, Demonstrations, etc., this could be viable. The spectrum is reserved as a guard band and not intended to be allocated for other use, so agree with the question.

Question 3

Noting the possibility of degradation from cellular mobiles, is providing for radio microphone use in the 698 – 703 MHz band useful to radio microphone users?

It may be. It could well be dependent on local conditions. e.g. the local cellular carrier frequency, or distance from local cell tower.

Question 4

Do you agree with allowing digital radio microphones? What types of emissions / modulation and emission bandwidths would be appropriate?

No experience with Digital Microphone Transmission, but usual gain from a digital system is an enhanced quality and spectrum efficiency.

Question 5

Are there any other performance standards that should be listed in the 'Radio communications (Radio Standards) Notice 2010'?

As stated above the NZRB's daily Broadcast of Thoroughbred, Harness and Greyhound races incorporates the use of radio microphones and IFB RF foldback units. The NZRB Broadcasts from approx. 60 tracks throughout New Zealand, a total of over 900 events per annum. Many of the races broadcast by NZRB are fed to Australia and even further afield. It is important the audio technical quality is not compromised. Hence the investment in quality equipment.

With regard to the proposed changes,

1. The NZRB supports the use of the 703MHz – 806MHz band until 11 March 2015.
2. Supports the use of radio microphones at a minimum EIRP of -20dbw in the APT guard band 698-703MHz
3. Supports the additional 32MHz (518 – 582MHz) of spectrum from November 2013 for use by Radio Microphones.
4. Disallow the use of 614 – 622MHz spectrum for radio microphone use.
5. Provide for the future use of Digital Radio Microphones

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