

Additional information on the operation of broadcasting stations under the LPFM General User Radio Licence

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These guidance notes have been written to assist users in understanding the terms and conditions of the LPFM GURL, however they are not intended to replace or add to the requirements of the GURL.

1. Application of "25 km" rule

Clause 3(1) "From 1 October 2003, within a 25km radius of any broadcast transmitter there must be no more than one low power FM transmitter broadcasting substantially the same programme (including simulcast or re-transmission) as that broadcast transmitter. Broadcast transmitter means a low power FM transmitter, or any broadcast transmitter licensed pursuant to sections 48 or 116 of the [Radiocommunications Act 1989](#)."

1. A broadcast transmitter licensed under section 48 refers to a spectrum licence for a frequency that is within a frequency band that is subject to a management right. A transmitter licensed under section 116 refers to a radio licence for a frequency that is within a frequency band that is not subject to a management right.
2. Without limiting the provision, the 25 km rule applies as follows:
 1. within 25 km of any low power FM transmitter, there may be no more than one other low power FM transmitter; and
 2. within 25 km of a spectrum/radio licence transmitter, there may be no more than one low power FM transmitter;
 2. broadcasting substantially the same programme.

2. Application of "Substantially the same programme" rule

Clause 3(1) "...substantially the same programme (including simulcast or re-transmission)..."

This clause uses the term "substantially the same programme" to allow the clause to apply sensibly to a variety of situations. For example:

1. if the same source material is used for a fairly short periods, or two stations of the same genre have partially over-lapping play-lists, this is unlikely to amount to being "substantially the same programme".
2. broadcasters are unlikely to circumvent the requirement, for example, by randomising a play list from separate locations. In borderline cases what amounts to 'substantial' will be a matter of common sense judgement.

3. Application of the "Notification" rule

Clause 3(2) "Low Power FM transmitter operators, at least once every three hours, must broadcast the contact details of the person responsible for the transmissions."

This requirement could be met by a spoken announcement of the name by which the station is identified, or the name of the person responsible for the establishment and operation of the transmitter, where that name is the subject of a current telephone directory listing.

If there is no telephone directory listing, the requirement could be met by including one of the following in the announcement:

- a business telephone number
- a business address
- a residential telephone number
- a residential address
- a valid e-mail address
- a postal address

4. Frequency coordination

Frequency use is on a shared basis and the Ministry does not accept liability under any circumstances for any loss or damage of any kind occasioned by the unavailability of frequencies, or interference to reception. Nevertheless, the Ministry recognises that coordination between users can minimise the risk of interference between services.

The Ministry therefore encourages the establishment of user groups or associations to coordinate installations for the equitable utilisation by all users of the available frequencies.

A user group, The Society of Low Power FM Broadcasters Incorporated, operates in Auckland. The Society may be contacted at P O Box 34595, Birkenhead, Auckland 1330 or through their website at <http://www.lpfmz.com>

A [discussion group devoted to low power broadcasting in New Zealand](#) is available (open access, membership required to post) as is a [directory of LPFM broadcasters](#) (details are provided on a voluntary basis).

5. Application of "External controls" restriction schedule (7)

"External controls for the adjustment of the transmitter power are not permitted". This restriction covers any component intended for adjustment of the transmitter power which can be accessed from outside the case, whether manually or by application of a tool such as a screwdriver. It is required that removal of the case or protective cover of the transmitter is necessary to enable power adjustment.

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6. Further technical and non-technical requirements

Radio Spectrum Management (RSM) expects all users of the radio spectrum to take responsibility for their radio transmissions and to fully comply with the both the appropriate technical and non-technical requirements prescribed in the [Radio Licence and the Radio Standards Notice 2007](#) for such transmitters they use.

LPFM users are required to comply with the [General User Licence \(GUL\)](#) emission designation of either:

- 180kF3E if you are transmitting mono, or
- 256kF3E if you are transmitting stereo.

Please note that the audio drive levels and the harmonic content therein, will critically affect this licence parameter.

Also prescribed are specific frequencies and associated tolerances which can be used. LPFM users are also required to comply with the [\(GUL\)](#) eirp level of 500mW (27dBm). **eirp** is a product of the transmitter's output power in association with the coaxial feeder type, coaxial feeder length and aerial choice. The 'i' in eirp designates 'isotropic', and refers to the imaginary gain exhibited by an isotropic aerial (basically a 'dot' in space). The important point to realise is that even a dipole will exhibit a gain of 2.15 decibels over an isotropic point (that is; 2.15 dBi).

LPFM users are also required to comply with the unwanted emission limits prescribed in the [Radiocommunications \(Radio Standards\) Notice 2007](#) as shown in Table 3.

Table 3 - Low Power FM (LPFM)

Unwanted emissions limit (peak power)	Frequency range (from carrier)	Measurement bandwidth
-28 dBW	120 kHz to 240 kHz	Not to exceed 10 kHz*
-38 dBW	> 240 kHz to 600 kHz	Not to exceed 100 kHz*
-56 dBW	> 600 kHz	100 kHz

Test equipment selectivity shall not impair measurement.

The audio drive levels, and associated, will influence the first section entered in this table, but over-all compliance with this table will be dictated by some degree by the quality of the FM transmitter used. This table also dictates the permissible odd and even order harmonic and spurious emission levels around the transmitter's intended, or fundamental, frequency.

Technical Requirement Check

Technical requirements can readily be checked by a competent person using appropriate measurement equipment, such as a spectrum analyser and power meter (which has had their performance verified to an appropriate reference source) and standard coaxial cable and aerial reference charts. **RSM expects that LPFM users take full responsibility for ensuring that their transmissions are in accordance with both their prescribed [licence](#), and [Radio Notice](#) conditions.**

Non Technical requirements are also prescribed in the [LPFM GUL](#), and include station identification and requirements around substantially simulcast transmissions and where such transmitters may be sited in relation to each other.

The above list is not exhaustive, and changes do periodically appear. Therefore, please ensure that you regularly check the Licence and Notices located at [RSM's website](#) and ensure that any transmission you are responsible for are compliant.

Interference to commercial broadcast

LPFM is readily capable of interfering with commercial broadcast TV programs and has, in several instances over the last few years, caused radio interference to aeronautical communications.

RSM radio Inspectors accordingly regularly carry out random audits of LPFM transmitters to ensure compliance. Any instance of substantial deviation from these conditions is likely to attract an Infringement Notice and associated Instant Fine.