

Submission for  
Higher Power Operation for Amateur Radio Stations.

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To Whom it May Concern.

With regard to allowing increased power for the purpose of experimentation.

Higher power levels would be useful for investigation in side-scatter and back-scatter experimentation as well as investigation in NVIS for HF/VHF communications.

High power levels would also enable more investigation of HF propagation under non ideal conditions this could especially be useful when attempting to conduct tests with other high power stations in the 1.5 to 2KW power levels, increasing the power levels even 6db or 7db above the noise floor would enhance the opportunity to conduct positive 2 way radio communications and experimentation compared to the current power differential imposed with all things being equal at both ends of the link.

Whilst there is a need to have some constraints on some Amateur installations especially in built-up high-density areas and especially at higher frequencies and antenna gains associated with typical VHF and UHF band operation which need to be controlled to prevent higher than acceptable EME fields to the operator and other persons or animals that could be exposed.

I feel that for the HF bands are to a larger extent less of an issue when all factors are considered, the intermittent nature of SSB or other peak envelope modes as well as the intermittent nature of operation of such stations that is duty cycle, and that clearance of the antenna(s) from obstacles and height above ground to provide for optimal radiation angle of the main lobe(s) should make it a fairly basic process to identify potential issues. Notwithstanding improper or low height of installations could well exceed maximum EME levels even at moderate power levels in some situations. For instance this could easily be done with magnetic loop antennas.

Perhaps with appropriate guidelines with regard to exposure limits as per:-

<https://www.arpana.gov.au/sites/default/files/legacy/pubs/rps/rps3.pdf>

And using the numerous on line calculators for example:-

<https://www.compeng.com.au/rf-calculator/>

Or indeed devising a simple/cost effective methodological way to quickly evaluate and/or measure near-field levels would be appropriate even if these are self-assessment in nature with appropriate test record keeping.

It would also be appropriate to place signage at the site where maximum field intensity occurs (at ground level) or on support structures for such antenna systems, indicating “Non Ionising Radiation” as a precaution to alert persons who may be in the area of possible risk to exposure.

The limitation of locations for operation of higher power is needs to take into consideration such arrangements as apartment house dwellings or other high density living situations where separation of the antenna from other objects including people and/or animals would be impossible to maintain exposure limits, this possibly also applies to +56dbm (400W) power levels or lower as well.

I would support the use of higher power even in urban/suburban areas where the size of the house block supports the requirements for antenna separation to fit within the EME guidelines.

The aspect of EMI is largely driven by field strength exposure and EMI compatibility of the device(s) fortunately domestic

equipment is by and large becoming more resilient to EMI (unfortunately the converse cannot be said of some devices that produce broadband EMI) however notwithstanding there is the potential of additional issues with EMI from both the transmitter/antenna installation as well as the end user equipment installation. Current best practice is for the amateur radio station operator to ensure harmonious relations within the neighbourhood by adjusting station operation and/or attempting to alleviate the interference if any is caused.

I conclude that we should if compliance can be demonstrated be allowed to use higher power for the purpose of experimentation into propagation and for the improvement of communications with other stations under situations where working requires it for efficient reliable communications and experimentation.

I would ask that consideration for power levels up to 2KW PeP (+63dbm) be allowed for HF/6MTR bands and 1000W PeP (+60dbm) VHF and UHF where this can be used with compliance to EME level as per the referenced documentation.

<https://www.arpana.gov.au/sites/default/files/legacy/pubs/rps/rps3.pdf>

Thank you for your consideration.

Tuesday, 29 November 2022