

Comment on the Proposed Change to Amateur Licensing System



Australian
Communications
and Media Authority

Proposed amateur radio qualification and assessor accreditation arrangements Consultation paper

AUGUST 2023

While all Amateurs are concerned with the lack of support for the reduction of interference protection that has occurred over the last 20 years (a steady increase in the many non-EMC compliant devices entering into and operating in Australia, and the increasing intrusion of other services particularly military ones into the Amateur bands) it is understood this trend will continue under the new arrangements as they do not address this increasing problem. The significant increases in interfering noise must be effecting all all radiocommunication services not just Amateurs.

Two parts of the new Amateur arrangements are of concern to me.

Exams and Costs

In the parts of the new Examination arrangements there is not sufficient clarity over fees.

Radiocommunications (Charges) Determination 2022

We propose to amend the Radiocommunications (Charges) Determination 2022 to implement the fees for issuing ACMA recognition certificates, assessing applications for recognition of prior learning and issuing call signs, as well as removing any redundant fees. Also, the existing fees in items 4.1.1 to 4.1.3 of Table 1 of Part 4 to the Charges Determination will be amended to specify fees for instances where we conduct examinations for the issue of ACMA recognition certificates.

The Radiocommunication (Charges) Determination is a separate public consultation running concurrently with the Amateur Radio Class License one.

Fees

ADD

We intend to cost recover our costs for issuing ACMA recognition certificates, assessing applications for RPL and issuing call signs, under the new arrangements.

The proposed charges for each activity will be consistent with the time it is expected for staff to consider and assess each process.¶

A full outline of the fees for the activities are outlined the draft 2023-24 Fees Cost Recovery Implementation Statement (CRIS), which is open for consultation in parallel to this consultation, and available on the ACMA website [[link to webpage when created](#)].

An overview of the proposed fees and charges amounts are outlined below for convenience:

- > ACMA recognition certificate application – \$45.20.
- > Recognition of prior learning assessment application – ranging from \$75.35 to \$188.35, based on application type.
- > Call sign application – ranging from \$30.15 to \$52.75, based on application type.

These proposed charge amounts are similar to the current AMC prices for these services.

The ACMA welcomes comments from interested stakeholders on the proposed new fees in the draft 2023–24 Fees CRIS [[link to webpage when created](#)].

Question 8

Do you have any comments on the proposed fees for amateur qualification and call sign services outlined in the draft 2023–24 Fees Cost Recovery Implementation Statement?

While the consultation paper has some about costs there is some ambiguity about Exam costs.

1. General guidelines

- 1.1 An accredited assessor is expected to conduct examinations with integrity and in a credible manner.
- 1.2 An accredited assessor must conduct the examination at a suitable venue, e.g., local Council Meeting Room, Radio Club/Association, local community hall. It is a condition of accreditation that face to face examinations cannot be conducted at a private residence.
- 1.3 An accredited assessor must be impartial and unbiased. An accredited assessor must disassociate himself/herself entirely from any examination in which a candidate is a member of the accredited assessor's immediate family.
- 1.4 An accredited assessor must conduct and assess examinations on a purely voluntary basis and must not receive from any other person any fees or other compensation for any act done in relation to being an accredited assessor.
- 1.5 An accredited assessor must not charge for their services. An accredited assessor may be assisted in all tasks connected with the examination by other accredited assessors.

The total zero charge approach for Accredited Assessors is in direct contrast the the Radiocommunication (Charges) Determination 2022 draft line where the ACMA has listed \$490 for conducting an examination for a Certificate of Proficiency for an Amateur Standard or Advanced license.

Appendix A – Fees for the ACMA's cost recovery activities

Please note the proposed charges to amateur radio and AWRLs are not reflected in the table below. Refer to sections 3.1.1, 3.3.1 and 3.3.2 of this CRIS for details on the proposed charges.

Fees under the Radiocommunications (Charges) Determination 2022 Ref	Fee type	Relevant section	Description	Fee
1	Device testing	Sch 1 Part 1 Table 1 (Item 1.1.1)	Testing (on request by a person other than a member of a police force of a State or Territory or the Australian Federal Police) of radiocommunications devices (other than a device that is subject to a permanent ban) for compliance with the Radiocommunications Act and instruments made under that Act.	Special hourly rate B
2	Documents	Sch 1 Part 7 Table 1 (Item 7.1.1)	Issuing a duplicate document of any kind or, where such duplicate document cannot be issued, a letter of confirmation.	\$38.00
3	Examinations	Sch 1 Part 4 Table 1 (Item 4.1.1)	Conducting an examination of a kind specified in paragraph 122(1)(b) of the Radiocommunications Act in relation to the issue of a certificate of proficiency that relates to an: > amateur licence (amateur advanced station); or > amateur licence (amateur standard station).	\$490.00
4		Sch 1 Part 4 Table 1 (Item 4.1.2)	Conducting an examination of a kind specified in paragraph 122(1)(b) of the Radiocommunications Act in relation to the issue of a certificate of proficiency that relates to an amateur licence (amateur foundation station).	\$377.00

While it is easy to understand the ACMA not wanting Accredited Assessors to charge this sort of fee, what system of charges the ACMA will apply to the Accredited Assessors (if any) is not clear.

In addition the requirement to to hire a hall, Community Room or similar to hold exams (where an Accredited Assessor is not able to use a Radio Club facility for free), may add considerable cost to any Accredited Assessors.

Half a day hire may exceed \$100 and could be an unreasonable burden on Accredited Assessors. This may deter some from conducting assessments.

Some way of passing on some of any such costs to the Examinees needs to be worked out!

I look forward to the Accredited Assessors Guidelines being formalised.

Hopefully they will not contain a \$490 fee per exam and some provision to allow Accredited Assessors some cost recovery !

Electromagnetic Radiation Safety

The Draft Class License includes provision for assessing safety using the ARPANSA Standard. How this is to apply is ambiguous.

2 Condition - compliance with electromagnetic energy standard

Condition - general case

(1) A person **must not operate an amateur station** if the radiofrequency field produced by the station **exceeds the reference level for general public exposure at a place accessible to a member of the general public.**

Measuring compliance with the condition

(2) For the purposes of subclauses 3(3), 3(4) and 4(3):

(a) if the station operates on a frequency in the frequency band 10 MHz to 30 MHz, only one of the following properties needs to be **measured or calculated** to show compliance with subclause (1) at places in **the far field of the antenna:**

- (i) incident electric field strength;
- (ii) incident magnetic field strength;

(b) if the station operates on a frequency in the frequency band 30 MHz to 2 GHz, only one of the following properties needs to be **measured or calculated** to show compliance with subclause (1) at places in **the far field of the antenna:**

- (i) incident electric field strength;
- (ii) incident magnetic field strength;
- (iii) incident power density;

(c) if the station operates on a frequency greater than 2 GHz, only the incident power density needs to be measured or calculated to show compliance with subclause (1) at places in the far field of the antenna.

(3) In subclause (2), each of the following terms has the same meaning as in the ARPANSA standard:

- (a) incident electric field strength;
- (b) incident magnetic field strength;
- (c) incident power density.

For low risk stations (noting that most Amateur stations have multiple transmitters in one station) it seems only an assessment of safety in the far field is required. Except for high gain antennas this is pretty simple, however does inaccessible to the public mean there must be exclusion from the near field zone.

For an 80 metre dipole that would mean 40 metres around the antenna (and any other radiating parts e.g. the wire fed of an antenna matched in the station).

Obviously for most stations the appended ACA document from 2005 would suggest much smaller distances could apply.

Then there is the assessment for multiple stations or high risk stations.

(4) A person is presumed, unless the contrary is proved, not to have operated an amateur station in contravention of the condition in subclause 2 (1) if:

- (a) the station is, at the time of operation, located at a site that has more than one station; and
- (b) the person has made the measurements or calculations specified in subclause 4(2), for all the stations at the site, as a whole; and
- (c) those measurements or calculations are to the effect that the operation of all those stations, as a whole, would comply with subclause 2(1); and

(d) **the person has retained possession of a document setting out those measurements or calculations at all times since those measurements or calculations were made**

These suggest that for both high risk stations and a couple where both have station licenses at the same address then the full near field assessment of ARPANSA needs to be applied.

4 Condition - measurements or calculations of electromagnetic energy - higher risk stations

Application

(1) This section applies in relation to an amateur station other than a station mentioned in subclause 3(1) or 3(2).

General requirement to measure or calculate radiofrequency fields

(2) Subject to subclauses (4), (6), (7) and (8), a person must not operate an amateur station unless the person has **measured or calculated the radiofrequency fields produced by the station in accordance with one or more of the following:**

(a) **if AS/NZS 2772.2 applies in relation to the station - AS/NZS 2772.2;**

(b) **if C95.3 applies in relation to the station - C95.3;**

(c) **if IEC 62232 applies in relation to the station - IEC 62232;**

(d) **if IEC 62577 applies in relation to the station - IEC 62577.**

Presumption

(3) A person is presumed, unless the contrary is proved, not to have operated an amateur station in contravention of the condition in subclause 4(2) if:

(a) the station is, at the time of operation, located at a site that has more than one station; and

(b) the person has made the measurements or calculations specified in subclause 4(2), for all the stations at the site, as a whole; and

(c) those measurements or calculations are to the effect that the operation of all those stations, as a whole, would comply with subclause 4(2); and

(d) the person has retained possession of a document setting out those measurements or calculations at all times since those measurements or calculations were made.

When the then ACA produced the first RLCD applying these sort of rules to the Amateur stations many Amateurs did not have much of a background to easily assess the rules. There were some online and other calculators produced and the ACA developed the appended guide. Recently the FCC in the USA has also extended the application of these type of assessments.

Recent Changes to the Rules

When the FCC first introduced regulations about human exposure to RF energy in 1996, amateur radio was included. The first RF exposure rules set limits for human exposure to radio transmitters. Although these limits applied to amateur radio, amateurs were not required to evaluate their stations.

In 2020, the FCC finalized significant changes to the rules. Under the new rules, amateur stations are still required to comply with the exposure limits, but more amateur stations are required to conduct a “routine station evaluation” to determine that their station complies with the limits for human exposure.

In the USA, the Amateur Radio Relay League (ARRL is a much larger (and consequently better funded) organisation and quickly information and guidelines have been published for the USA Amateurs.

Table 1 shows the formulas you can use to determine whether you're exempt from needing to do an evaluation. This table cannot be used for exposure distances $< \lambda/2\pi$ or for distances closer than 20 centimeters.

Table 1 — Single RF Sources Subject to Routine Environmental Evaluation under MPE-Based Exemptions, $R \geq \lambda/2\pi$	
Transmitter Frequency	Threshold Effective Radiated Power (ERP)
0.3 – 1.34	$1,920 R^2$
1.34 – 30	$3,450 R^2/f^2$
30 – 300	$3.83 R^2$
300 – 1500	$0.0128 R^2f$
1500 – 100000	$19.2 R^2$
Note: Transmitter frequency is in MHz, threshold ERP is in watts, R is in meters, and frequency (f) is in MHz.	
Using Table 1 for the frequency (f in MHz) and separation distance (R in meters) at which the RF source operates, single RF sources are exempt if the ERP (in watts) is no more than the calculated value prescribed for that frequency. For the exemption in Table 1 to apply, the separation distance in meters (R) must be at least $\lambda/2\pi$, where λ is the free-space operating wavelength. If the ERP of a single RF source is not easily obtained, then the available maximum (source-based) time-averaged power may be used in lieu of ERP if the device antenna(s) or radiating structure(s) do not exceed the electrical length of $\lambda/4$. If the ERP of the single RF source and transmitting antenna(s), including coherent array, exceeds the ERP threshold, then the RF source is not exempt, and the applicant must prepare an evaluation.	

And the ARRL has also produced an online calculator for those wanting to assess their stations before the date that evaluations have to be completed in the USA.
<http://www.arrl.org/rf-exposure-calculator>

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RF Exposure Calculator

The FCC's New RF-Exposure Regulations

FCC RF-Exposure Regulations – the Station Evaluation

ARRL RF Safety Committee

What's New About the FCC's New RF-Exposure Regulations?

RF Exposure Regulations News

The FCC has adopted guidelines and procedures for evaluating environmental effects of RF emissions. The new guidelines incorporate two tiers of exposure limits based on whether exposure occurs in an occupational or "controlled" situation or whether the general population is exposed or exposure is in an "uncontrolled" situation. In addition to guidelines for evaluating fixed transmitters, the FCC adopted limits for evaluating exposure from mobile and portable devices, such as cellular telephones and personal communications devices.

To use the RF Exposure Calculator, fill-in the form below with your operating power, antenna gain, and the operating frequency. Depending on how far above ground the RF source is located, you might want to consider ground reflections — and then click "Calculate".

You may need to run the calculator multiple times to get a complete picture of your situation, i.e. take into account the antenna's lobes and directionality.

[Click here to get \(more\) info.](#)

Parameters

- Power at Antenna: (Need help with this?) (watts)
- Mode duty cycle:
- Transmit duty cycle: (time transmitting)
You transmit for minutes then receive for minutes (and repeat).
- Antenna Gain (dBi):
- Operating Frequency (MHz):

☒ Include Effects of Ground Reflections

If you would like to receive future announcements of any FCC news related to RF-exposure or the requirements for amateurs to evaluate their stations, you may optionally provide an email address.

Email Address:	<input type="text"/>	(optional)
Comments:	<input type="text"/>	(optional)

Results for a controlled environment:

Has compliance with the new Australian Amateur Class License become more costly and complicated ?

Question:-

Will the low risk, high risk and multiple co-sited stations be able to use the distances indicated in the appended ACA "HUMAN EXPOSURE TO EMR: ASSESSMENT OF AMATEUR RADIO STATIONS FOR COMPLIANCE WITH ACA REQUIREMENTS" (2005 or perhaps a more recent edition?) to calculate the distances the public must be excluded from radiating antennas?