



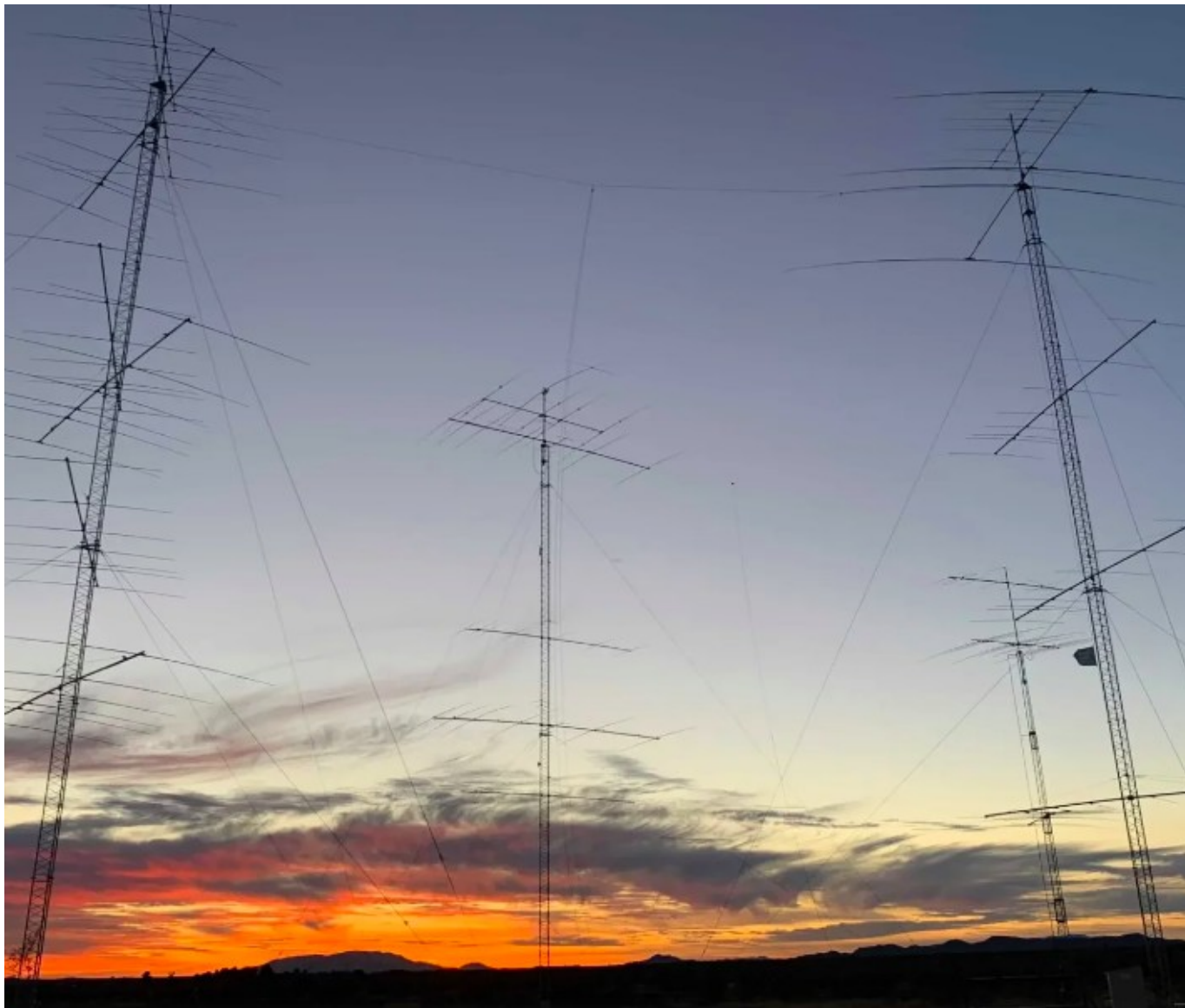
SINGAPORE AMATEUR RADIO TRANSMITTING SOCIETY

FCC amateur radio licensing guide for Singapore HAMs

Presented by 9V1SA for 9V1DT who is unwell

9 June 2023

So I tried out my new station last night



OK I borrowed it for a few minutes

W7/PHOENIX

Airtime Cost
\$0.49/Min @ 100W
\$0.69/Min @ QRO

 The Station

 Hardware

 Arizona

6m – Coming Spring 2022

10m – 5/5 Stack (EU) at 130' / 95'

12m – 4 Element Yagi at 140'

15m – 4/4 Stack (EU) at 130' / 95'

17m – 3 Element Yagi at 140'

20m – 6/6 Stack (JA) at 130'/60'

30m – 2 Element Yagi at 140'

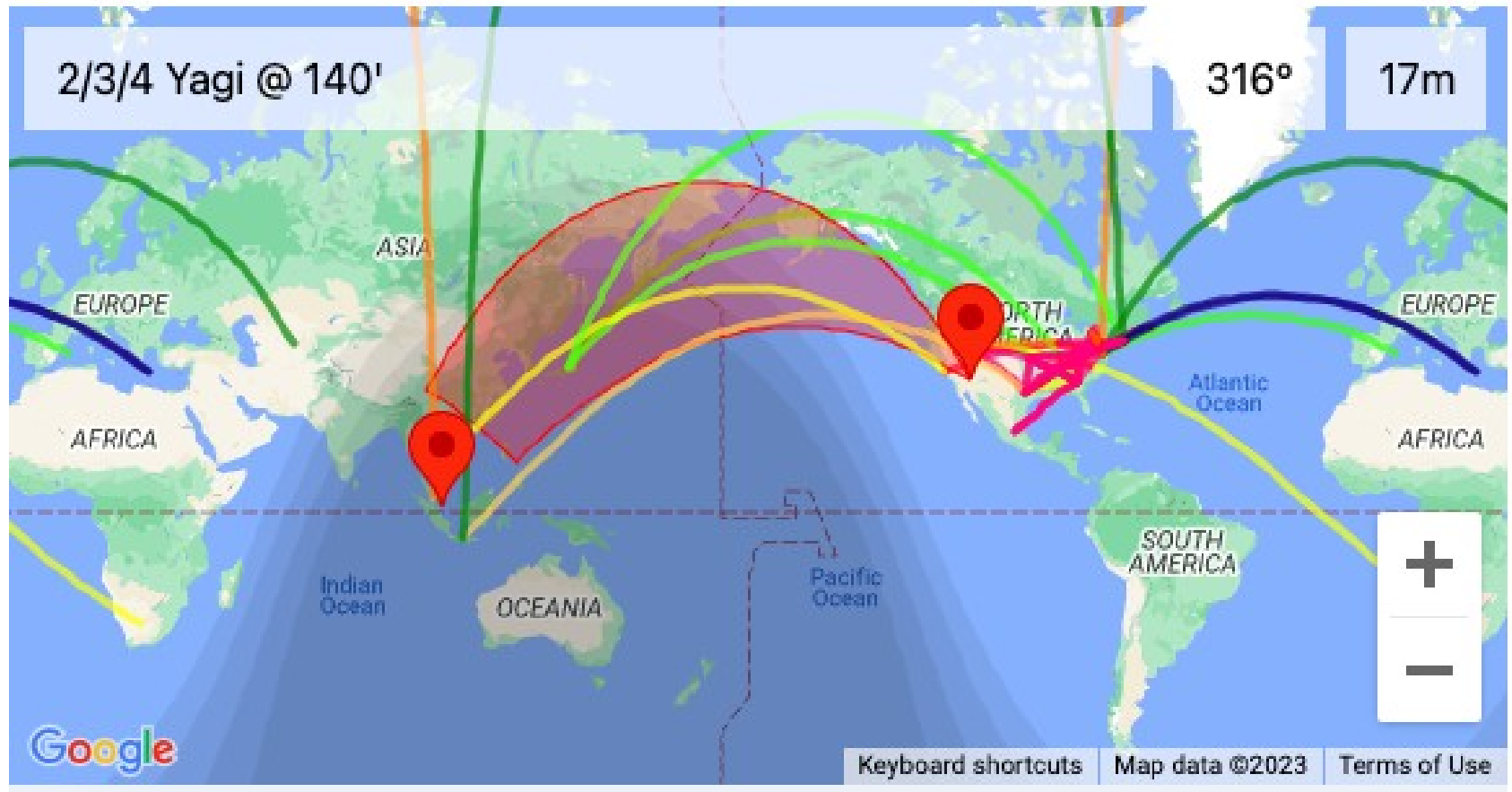
40m – 4 Element Yagi at 140'

80m – Rotating Dipole at 145'

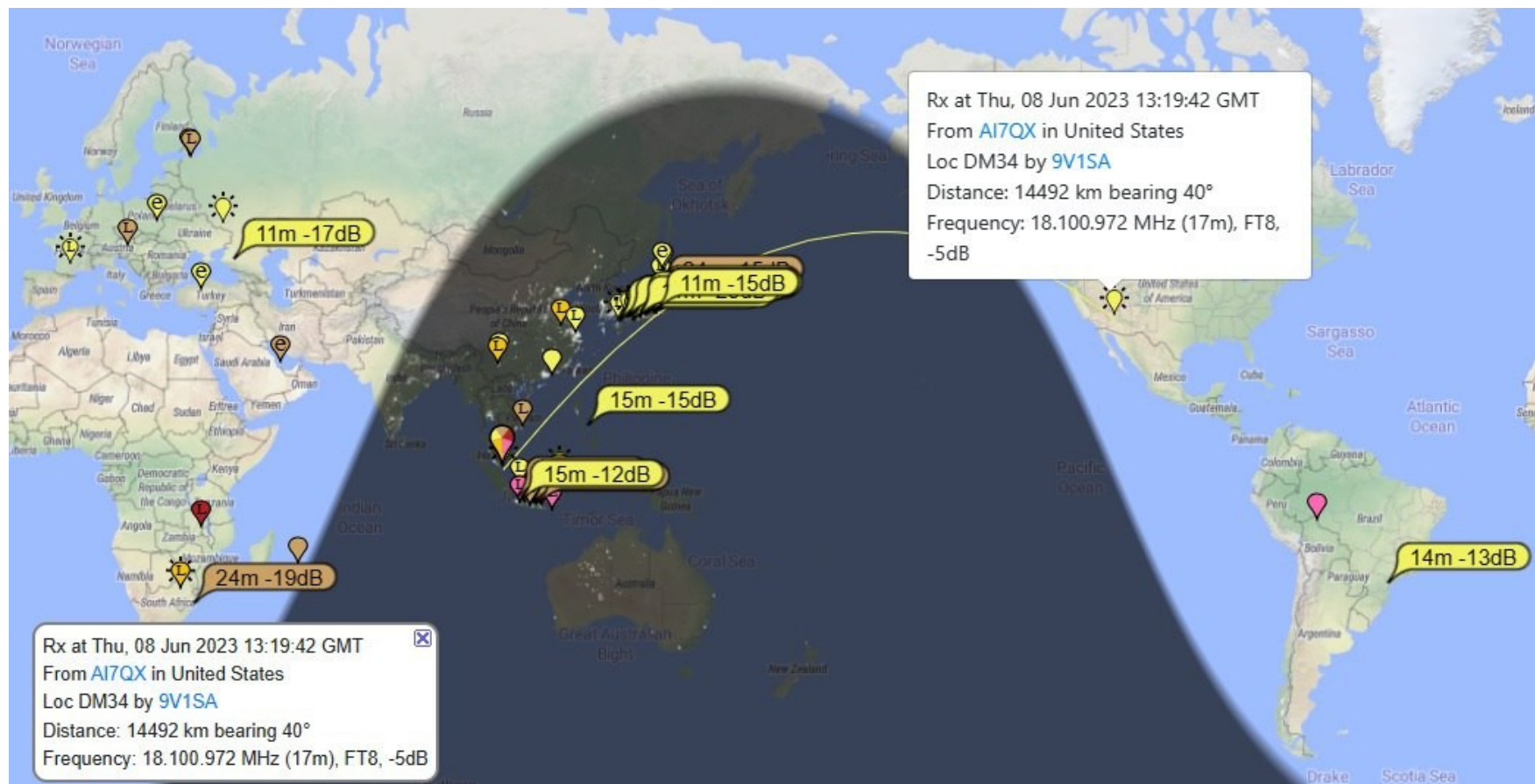
160m – 160 – Full Size Vertical



I put 9V1SA in the rotor box



Meanwhile in Redhill ...



My 5W didn't make it back the other way

Band Activity							Rx Frequency						
UTC	dB	DT	Freq	DXCC	Distance	Message	UTC	dB	DT	Freq	DXCC	Distance	Message
131830	-16	0.6	2081	Japan		SG3A JQ6NNK PM53	130545			2270			XV9K 9V1SA OJ11
131830	-13	0.5	2332	Japan		KB9ELS JA1QOW -13	130600	-21	2.1	465	Vietnam		JJ1IAF XV9K RR73
131830	-19	0.7	717	AS Turkey		CQ TA2ANK KM69	130615			2270			XV9K 9V1SA OJ11
17m							15m						
131900	-19	0.5	1121	EU Russia		JH5AVM RV3ZK 73	130630	-24	0.8	464	Vietnam		CQ XV9K OK40
131900	-18	0.6	1023	Japan		SG3A JH8QLP R-17	130645			2270			XV9K 9V1SA OJ11
131900	-12	0.7	1320	Japan		CQ 7K1UGA PM95	15m						
17m							130700	-17	1.3	464	Vietnam		YO9BXE XV9K -17
131930	-5	0.5	972	U.S.A.		9V1SA AI7QX DM34	10m						
131930	-1	0.5	1830	Indonesia		WA1S YB7YDB 73	131415			2250			CQ 9V1SA OJ11
131930	-9	0.6	1320	Japan		CQ 7K1UGA PM95	131445			2250			CQ 9V1SA OJ11
131930	-6	0.6	440	Japan		CQ NA JLI1EO PM95	131515			2250			CQ 9V1SA OJ11
131930	-10	0.6	293	Japan		N5HHS JN1XAI -22	131545			2250			CQ 9V1SA OJ11
131930	-14	0.5	2332	Japan		N3CMH JA1QOW -14	131615			2250			CQ 9V1SA OJ11
131930	-13	0.8	1543	Japan		W1DNP JA7OWD R-19	131645			2250			CQ 9V1SA OJ11
131930	-11	0.6	1417	Indonesia		N3CMH YB7URE OI88	131715			2250			CQ 9V1SA OJ11
131930	-14	0.7	526	Japan		K0E00 JI7GYU -13	131745			2250			CQ 9V1SA OJ11
131930	-14	0.7	1024	Japan		SG3A JH8QLP R-19	131815			2250			CQ 9V1SA OJ11
131930	-17	0.6	1123	S. Africa		JH5AVM ZS6PX KG33	131845			2250			CQ 9V1SA OJ11
131930	-16	0.6	565	U.S.A.		CQ W7CT DN41	131915			2250			CQ 9V1SA OJ11
131930	-18	0.7	717	AS Turkey		DG2SUK TA2ANK -14	131930	-5	0.5	972	U.S.A.		9V1SA AI7QX DM34
17m							131945			2250			AI7QX 9V1SA -05
132000	-4	0.5	972	U.S.A.		9V1SA AI7QX DM34	17m						
132000	-8	0.6	293	Japan		N5HHS JN1XAI -22	132000	-4	0.5	972	U.S.A.		9V1SA AI7QX DM34
132000	-5	0.6	1417	Indonesia		N3CMH YB7URE OI88	132015			2250			AI7QX 9V1SA -05
132000	-5	0.6	440	Japan		WB4TDH JLI1EO -13	17m						
132000	2	0.5	1830	Indonesia		CQ YB7YDB OI88	132045			2250			AI7QX 9V1SA -05
132000	-9	0.7	1320	Japan		CQ 7K1UGA PM95	132115			2250			AI7QX 9V1SA -05
132000	-14	0.7	1890	France		UX3HX F5GN JN13	132145			2250			AI7QX 9V1SA -05

FCC amateur radio licensing benefits

For existing 9V1 license holders:

- US FCC Amateur licenses are well recognized
- Could be helpful to get visitor licenses / during DX-peditions
- License term is 10 years
- Remote operation of US stations opens up new ways to play radio

For those aspiring to get a Singapore amateur radio license

- Currently Radio Amateur Examination (RAE) is suspended and is presently under review by the Infocomm Media Development Authority (IMDA)
- IMDA will accept FCC amateur radio license as proof of qualification to issue Singapore amateur radio station license
- Hamstudy.org, a free online training portal, streamlines the learning process
- FCC exams can be taken remotely, sometimes free of charge

FCC license classes

Technician

- Beginner
- Access to VHF, UHF + a small portion of HF band
- 35 MCQ exam
- need to get at least 26 right (74% to pass)

General

- Intermediate
- Technician class privileges + more HF bands
- 35 MCQ exam
- need to get at least 26 right (74% to pass)

Amateur Extra

- Advanced
- General class privileges + entire HF band
- 50 MCQ exam
- need to get at least 37 right (74% to pass)

Note: One has to clear Technician class before attempting General and likewise, one has to clear Technician and General to take Amateur Extra. However, can tests for 1-3 levels all in a single 30 minute session

More info:

- <http://www.arrl.org/ham-radio-licenses>
- <https://hamradioprep.com/how-many-questions-are-on-the-ham-radio-test/>

Mapping FCC to Singapore license classes

SG Restricted

- Beginner
- VHF, UHF

Available to:

- FCC Technician

SG General

- Intermediate
- VHF, UHF and HF

Available to:

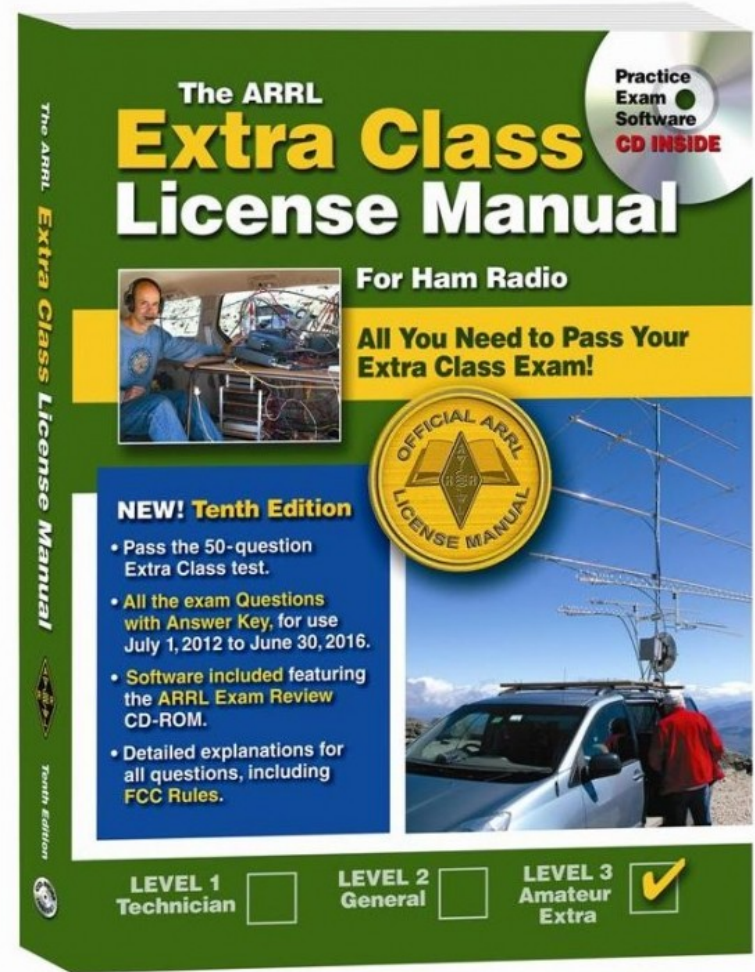
- FCC General
- FCC Extra

Singapore RAE VS FCC Exams

- The key topics tested in both RAE and FCC exams
 1. Rules and regulations
 2. RF operation
 3. Electronics
 4. Safety
- Rules and regulations would vary widely between FCC and Singapore
- FCC exam is more up to date with the current technologies and operating conventions
- RAE emphasizes more on the electronics
- Comments from SG hams who have taken both RAE and FCC:
 - Thick textbooks are available for each FCC class – Hugh has copies for anyone who wants to borrow them.
 - However the question pools are public, so some people just memorise the answers.
 - A person who has gone through RAE should not have trouble clearing the FCC Technician class, provided they get acquainted with the FCC regulations.
 - FCC General class would also be doable with a few hours spent doing practice questions on hamstudy.org
 - Amateur Extra would take more effort

Comments from SG hams who have taken both

- Comprehensive study manuals are available for each FCC class 9V1SA has copies for anyone who wants to borrow them.
- However the question pools are public, so some people just memorise the answers.
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FCC timeline and costs

Time frames:

1. Registration: ~30 minutes
2. Preparation:
 - Technician class: 1 week (45 min/day)
 - General class: 1.5 weeks (45 min/day)
 - Extra class: 2 weeks (45 min/day)
3. Exam time: ~10-30 mins / license class
4. License issue: 1-4 days

Costs:

1. Exam fee: 0-15 USD
 This is the exam fee per session
 You can also take multiple exams on the same session without additional fees. e.g.: Tech and General or Tech, General and Extra together.
2. License fee: 35 USD.

Note: Preparation time estimates are pretty liberal with ample buffer time. It should be much shorter for experienced hams

Exam Registration Step 1: US Mail Address

Get an instant USA mailing address: This can be an address of your friend/relative or a free address from forwarding services such as [comGateway](#), [ezship](#), [vPost](#).

Useful FAQs: <https://vea.org.au/faq>

comGateway

[Home](#) [Services](#) [About](#) [Blog](#) [FAQ](#) [Contact Us](#)



REGISTER



SHOP ONLINE



PACKAGE AT U.S. ADDRESS



SHIP + TRACK



Step 1

Register

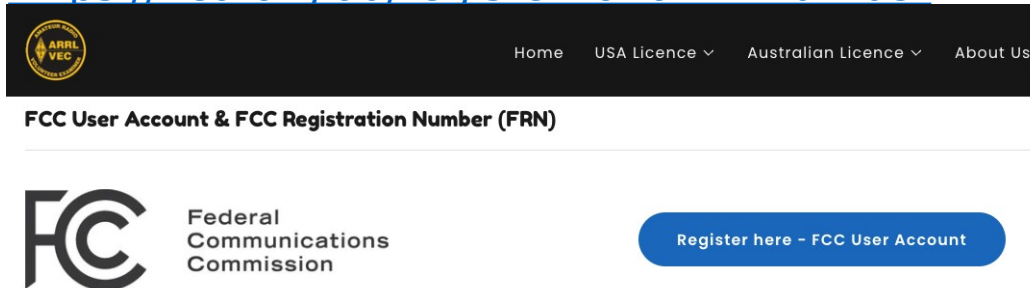
Receive your virtual US address upon registration, and use it when shopping from US online stores.

REGISTER NOW

Exam Registration Step 2: Get a FRN

Get an FRN (FCC Registration Number). This can be obtained for free from FCC CORES webpage. Follow the instructions from here:

<https://vea.org.au/register-for-a-frn-number>



FCC User Registration System

1. Enter your username (Email Address)
2. Enter Password.
3. Verify the email you receive from FCC. (Check your spam folder, if not received)
4. Log on to your account.

Once you have successfully established an FCC User Account, follow the information below to attain an FRN number.

- To register for a new FRN, click the "Go to CORES" button:
 1. Select "Register New FRN"
 2. Are you registering as an entity or as an individual? **Select 'Individual'**
 3. Is your contact address within the United States or its territories? **Select "Yes"**
 4. Do you wish to proceed with a CORES FRN Registration or a Restricted Use FRN Registration? **Select "CORES FRN Registration"**
 5. Enter your Given Name & Last Name (The ID info you provide us must be the same)
 6. The question is asking you for a Social Security Number or Taxpayer Identification Number. **"Leave blank."**
 7. If you do not have a Social Security Number. **Select "The individual is a foreign"**
 8. Under Contact Information Section. **Select "Same as Above"**
 9. Enter your US Address.
 10. Enter your email address.
 11. Check the information you provided is correct.
 12. Submit form.
 13. Your FRN number should appear on the page, print and bring along to the exam session.
- **Note:** You will not be allowed to take an exam, without an FRN Number.

Exam Registration Step 3: Register for Exam




There are many online exam providers, all staffed by supportive ham volunteers.

SG time zone provider in Australia: <https://vea.org.au>

More slots can be found here: <https://hamstudy.org/sessions>

Instructions vary between providers and some require payment methods like PayPal that are not enabled under MAS regulations in Singapore.

Jun 07, 2023 (Wed)

OARC	 Orlando Amateur Radio Club <i>OARC Testing Session</i>	Orlando, FL	FREE!
	5:30-7:30 AM open		
FKARC	 Florida Keys ARC VE Team <i>June FKARC Club Meeting</i>	Big Pine Key, FL	\$14.00
	5:30-6:30 AM open		
OGDEN	 Ogden Utah <i>Ogden ARC June VE test session</i>	Riverdale, UT	\$14.00
	8:00-9:30 AM 3		

Exam preparation: Review Question Pool

- The exam questions are extracted from a question pool revised regularly (4 years). The current pool is valid for the following terms:
 1. Technician Class (2022-2026)
 2. General Class (2019-2023)
 3. Amateur Extra Class (2020-2024)

More info: <http://www.arrl.org/question-pools>

Exam preparation: Recommended Study Plan

Recommended study plan: <https://hamstudy.org/>

- Directly get yourself familiarized with the questions though the **study mode** in **hamstudy.org**
- You can refer to the manuals or do a web search on topics as and when needed.
- Spaced repetition with flash cards to help you remember the answers
- The website also accompanies solutions with explanation for each question. As a bonus, they also provide hints to memorize the answers for some questions
- https://hamstudy.org/content/study_tips



Technician Class (2022 - 2026) 🇺🇸 •



Study Mode



Read Questions



Practice Test

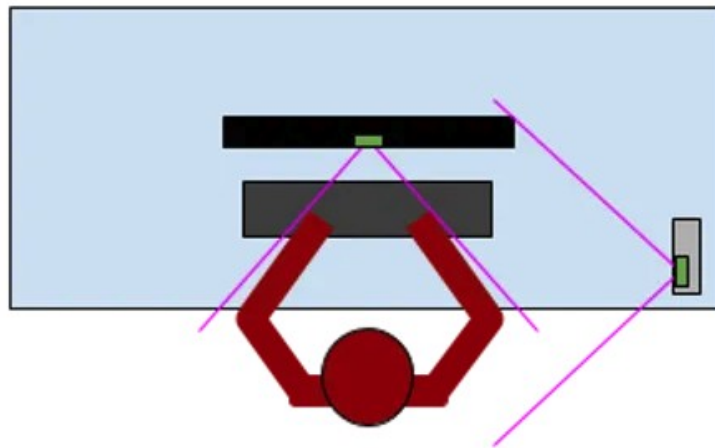
To see your study history,
please [Log in](#) or [Register for a
FREE account!](#)

Additional free Study materials

- Previous edition ARRL license manuals
 - Technician Class: [The ARRL Ham Radio License Manual, 3rd Edition](#)
 - General Class: [The ARRL General Class License Manual, 7th edition](#)
 - While they may not be up to date, but they can provide good foundations and cover a significant portion of the current question pool
- For Technician class you can find an up to date guide here
 - <https://www.kb6nu.com/study-guides/>
- For Extra class:
 - https://www.k4vrc.com/uploads/1/0/1/5/10156032/extra_class_exam_study_guide.pdf
 - Although it is a 2013 guide, most of the content is still relevant to the current question pool

Additional points: Exam Practical Issues

1. Only on-screen calculators (not physical) were allowed in recent tests but each provider might interpret these rules differently so check.
2. Proctoring rules vary: they will want to see photo ID on camera. They might want a second camera to view keyboard or they might just ask you to show them round the room to check you don't have notes etc. Again, check.
3. If there are no exam slots on VEA site, you can email to ask for some using the contact form. The coordinator is Peter Dernikos, VK3FN, K3BV on info@vea.org.au but bear in mind PayPal blocks from Singapore.



1. Your computer camera points at you.
2. Your second device shows the side view of your hands on the keyboard.

Additional points: When You Pass

1. When you pass your details are automatically sent to the FCC
2. FCC emails very fast asking for USD35 payment.
3. When you make it a second email from hamstudy confirms your new callsign
4. A record with your new callsign is automatically created in QRZ.com that you can claim and manage using settings on your QRZ profile
5. Download an official record of your license from universal licensing system:
<https://www.fcc.gov/wireless/universal-licensing-system>
6. Keep your email updated there (your primary FCC address is email not physical)



Congratulations AI7QX!

The call sign for your Amateur Extra Class license has been issued and you may now transmit on Amateur Radio frequencies!

- [Click here to see your official entry in the FCC database](#)
- [Click here to download a reference copy of your license \(not the official copy\)](#)

ACKNOWLEDGEMENTS

Contributors

- 2023 version
 - 9V1DT, 9V1SA, 9V1YC
- 2021 version
 - 9V1BC, 9V1DT, 9V1KB, 9V1PL, 9V1XV, 9V1YP, 9V1ZV