

# **PARC VE TEAM**

# **HANDBOOK**

## **for**

# **ONLINE EXAMS**

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# PARC Online VE Team Procedures

## 1. Introduction

Participating as a PARC online volunteer examiner in remote Amateur Radio examination sessions affords you with an exciting opportunity to give back to the community. You will reap satisfying rewards helping many people to enter this wonderful hobby.

Remote exams provide a venue for those candidates who are unable or (unwilling) to take an in-person exam due to pandemic or other reasons.

Candidates should be technically capable of operating their electronic equipment. They must have sufficient skill to set up their computer along with a second device using the Zoom Meeting application and operate them. Both devices must have video, sound, microphone, camera, along with a good internet connection.

We are not a catch-all for those that are not technically knowledgeable or capable of operating their electronic equipment.

## 2. Preparation

An online volunteer examiner must be prepared, follow the rules, and meet specific minimum requirements:

- Amateur Extra license holder
- Certified with the ARRL VEC and submitted a copy of your credentials
- Possess a computer with a camera and a microphone (not a Dell laptop or Chromebook)
- Possess a Zoom account (free)
- Download and install Zoom application, and proficient with its use
- Set up and test your equipment before you join your first session

After you are ready to commit to proctoring exams, there are a few additional steps you should take:

- Register with Exam Tools in order to be able to sign CSCEs for candidates (not required to begin observing)
- Download and install the Telegram application to participate in backend communications
- Practice using Exam Tools in the “sandbox” (when it is working; not required)
- If you have Hamshack Hotline, look up our voice conference bridge
- Obtain a copy of the script and practice it (depending on your level of commitment)
- Practice different exam team duties
- Recruit additional team members for training, and build a team
- Lead an exam

- Become more active as time permits

### 3. Preliminary Sessions

Initially, a new remote volunteer examiner should join a session and observe only. This will allow you to see how things work and what to expect. It is also an opportunity to determine your technical capabilities and whether you might have any bandwidth issues. It is also a great time to meet the team members and learn first-hand about some of the inherent difficulties that online exams present.

To join a preliminary session, set your Zoom display name to VE NAME CALLSIGN Observer-ORGANIZATION (if any). It should look something like this:

VE John Doe W1AQ Observer-Anywhere Radio Club

This is very important as it lets the VE team know that they should let your device into the exam session. You can change your name in Zoom by going to “Settings | Advanced | Profile name” and then edit your “Display Name”. You must do this before you log in to a meeting. If you are using a free account, you will select “View Advanced Features” which launches a browser window where you log in to your account. In the top right corner you will see a rounded square that is your thumbnail. It may contain a picture if you have added one or it may be one or two letters. Click on the thumbnail, then click on your email address. You will select “Profile” on the top left, then select edit on the right across from your name. Then edit the “Display Name” as shown above. Another option is to go to [www.zoom.us/profile](https://www.zoom.us/profile) or [www.zoom.us](https://www.zoom.us) and click on “My Account”.

It’s important to not use any distracting backgrounds. Do not put a picture in for the meeting. If you need to, remove this at the same place where you change your display name. That way, it provides a black screen with your name and call sign for everyone to see.

When you join in for the first time, the team leader will introduce themselves and give you a short overview. It is difficult to provide a lot of information initially unless it is prearranged, since time is usually limited at the beginning. However, the leader can conduct a Q&A with you after the sessions are over, or in between sessions.

Once a candidate is admitted, remember that you are an observer. Some things may happen that you do not understand, or may be different than what you are used to. If this happens, take notes and ask about it later. The team leader will be happy to explain things.

Remember, this is not an in-person exam, so the rules and requirements are different. The remote VE teams do not offer unlimited time, nor will they conduct exams without advance notice. Sessions are timed because a new candidate is coming into the session every 15 minutes. It would be unfair to the next person and to the team if the candidate is not ready and prepared to begin on time. While the team does give “time remaining” alerts periodically, they do not

necessarily stop the candidate from finishing; it depends on how many candidates are waiting and the particular candidate's situation.

The team requires that the examiners remain silent and attentive during the exam sessions to watch and listen for anything that might indicate that the exam session's integrity has been compromised.

Please do not feel overwhelmed. It takes time and experience to learn about the many intricacies that lead to a successful exam session. Remember, PARC has been conducting online exams since the beginning of when remote examinations were first authorized; many team members have conducted well over 3,000 exams.

Questions are welcome at the right time—but not during an exam, or when an candidates is in the room.

## **4. Chronology of an Exam**

There are several different phases of an exam. We will discuss them here:

### **4.1. Initial Emails**

If the candidate is asking a question that has already been documented, please refer them to the website. Do not “spoon-feed” the candidate. Doing so will lead to their dependence on others to answer their questions, and a handicap that will prevent them from learning through self-education, experimentation, and exploring the many facets of ham radio. Also, a person who fails to read the instructions will not read the manual of the equipment they buy, nor will they likely pay attention to regulations or requirements or pay proper attention to their equipment outputs. This will result in possible illegal transmission and further, may propagate bad operating practices for them and others that learn from them.

### **4.2. Registration**

Did the candidate affirm they have read the website and FAQ? Did they pay their fee for the exam? Do they have a valid address that the USPS delivers mail directly to, and does it belong to the candidate? Do they have an FRN that matches their name and address? Did they include a phone number and email address? Did they complete the exam tools registration?

### **4.3. Waiting Room**

Have they named their devices to identify which is the computer and which is the phone? Does the name match the candidate's name?

### **4.4. Initial Instructions**

During the time period that the candidate enters the main Zoom room until they affirm the questions, watch for any suspicious activity. Also, look for items that are not allowed such as hats, earpieces of any kind, watches, etc. Is the candidate paying attention? If not, stop and instruct the candidate to follow the instructions and listen carefully. They should not be looking around the room or touching their phone. The only thing they may do is shut down applications on their computer. During this initial period, Zoom Operator makes any name changes to assist the team. Always make our changes using ALL CAPS, this informs everyone that the Zoom Operator made the change. Make sure the candidate's name is as it appears on Exam Tools and includes COMP for computer and PH for phone. Add an \*I\* to the end so that everyone knows the candidate has been read the initial instructions. This is especially helpful when using breakout rooms or multi-candidate instruction methods.

### **4.5. Checking Identification and Documents**

It is imperative to conduct a thorough examination of the documents submitted by the applicant to ensure the accuracy of their identity claims. Not only is there a potential risk of individuals



attempting to take the exam on behalf of someone else, but there is also the possibility of fraudulent activities aimed at obtaining a license for illicit purposes.

When scrutinizing identification, meticulous attention should be given to the photograph to confirm its correspondence with the individual taking the exam. Additionally, a detailed review of the information on the identification is essential, verifying that the name precisely matches the one on the exam. Cross-reference the address on the identification with the address provided on the exam paperwork. If disparities exist or the address is absent from the document (as in the case of a passport or visa), the applicant must furnish an additional piece of paperwork demonstrating the matching address. Acceptable forms of address verification include a lease document, utility bill, or bank statement, all of which must be in the applicant's name.

Ensure that the identification is valid and not expired. In the case of expiration, the applicant must present documentation proving the renewal of the identification, which must be issued by the appropriate authority and bear an official seal. This documentation may be in electronic or paper form.

You must have a physical issued identification card to show to the team. Absolutely NO digital identification cards will be accepted!

**(Over 18):** For *Adults* one legal photo ID (identification) from the list below:

- State issued Driver's License (issued within the last five years or an unexpired Star ID)(must have your valid address, no business, mail service, or non-residential addresses)
- State issued Photo ID card (Unexpired with your valid residential address)
- US Government issued Passport (No non-US passports)(Must provide document with address)
- \*NO MILITARY ID\*

**(Under 18):** For *Students/minors* one legal photo ID (identification) from the list above or one of the items from the list below ONLY if a legal guardian presents their photo ID and identifies themselves verbally along with the student/minor; otherwise, a photo ID is required.

- Non-photo State ID card (some states still have them)
- Birth certificate (must have the appropriate seal)
- Social security card
- Minor's work permit issued by the local school with ALL identifying information
- School ID card from a verifiable school system and in PVC form. (no paper ID cards)
- School or Public Library card (PVC not paper)
- \*REPORT CARDS ARE NOT ACCEPTABLE.\*

**(Under 13) NOTICE:** Minor children (under the age of 13) must be accompanied in the room by an adult during the test. The adult must be in the room seated in such a way that they can be observed completely by the exam team but not able to provide any assistance or view the questions or answers on the exam.

## **4.6. Recording Procedures**

While the FCC no longer mandates recording, our exam teams have opted to continue this practice for the purpose of maintaining integrity in the examination process and safeguarding Volunteer Examiners (VEs) from potential allegations of misconduct by applicants. Prior to the exam, we inform applicants through our website that the session will be recorded, and the entire exam area will be subject to scanning and recording. Applicants are explicitly instructed to conceal any personal or sensitive items otherwise they explicitly consent to their recording and storage.

This notification is reiterated during the exam session sign-up process, and verbal consent for recording is obtained at the commencement of the examination. Recordings are typically retained for six months, with the discretion to delete them at our discretion. It is important to note that neither the applicant nor any other party has the right to record the sessions or review the session recordings.

Recording initiates after the presentation of identification to the exam team but before the agreement to the terms of the exam. The recording ceases after the applicant has successfully completed and signed all necessary paperwork.

## **4.7. Timing Procedures**

In the past, our practice involved timing exam sessions from the screen share initiation to the exam log-out point. This approach was adopted to prevent undue delays for other applicants waiting in the queue while one individual's exam extended excessively. Although we aimed to provide ample time for applicants and ensure fairness to those waiting, the timing was not strictly enforced and only applied in extreme cases. Applicants progressing through the exam within a reasonable timeframe had a higher likelihood of success, whereas those exceeding fifteen minutes faced a significantly increased probability of failure.

Initially, exam sessions were prolonged, often spanning from 5:00 PM to midnight, creating a burden for all parties involved. Additionally, we encountered instances where applicants were unprepared, unfamiliar with instructions, and lacked knowledge about their devices, leading to extended setup periods. Spending considerable time guiding individuals through Zoom access, camera initiation, room scanning, and exam setup proved impractical, especially when the actual test duration was brief.

Recognizing that applicants are responsible for familiarizing themselves with the testing environment and instructions, we have refined our approach. We do not expect Volunteer Examiners (VEs) to be computer experts, and applicants failing to demonstrate basic preparation are referred to a future exam after reviewing instructions and procedures.

Our improved testing efficiency allows us to conduct up to ten exams per hour. Consequently, the purpose and necessity of timing have evolved. Experienced VE Team Leads now use judgment to identify applicants lacking preparation or facing technological challenges. Initial setup in the main room ensures applicants receive instructions, conduct room scans, and set up

their computers before starting the exam. To maintain meaningful timing, we now measure from the Exam Tools “Applicant information” screen to the green “Exam Grade” screen, excluding the setup phase. If an applicant is taking additional exams, we pause timing at the “Exam Grade” screen and resume at the instruction to press the “Start (next) Exam” button.

While this method ensures an accurate duration of the actual exam period (not exceeding fifteen minutes), a five-minute warning is issued at the ten-minute mark if an applicant progresses slowly. Deviations from the allotted time are at the discretion of the team, considering setup time, applicant challenges, observed missed questions, the queue of waiting applicants, VE availability, and the representation of the amateur radio community.

#### **4.8. Room Scan**

During the time period that the candidates affirms the questions until they set up the phone to view the computer screen and keyboard, watch for any prohibited items listed in the online rules.

Are any written items, charts, “sticky notes” or monitors of any kind within the candidates's field of vision? Inspect the laptop for any wires connected other than power, a cable to an external camera (only allowed if the computer does not have a built-in one). Ensure that all monitors and TVs located within the field of vision (90 degrees left and right of the exam view) are covered or disconnected entirely. It is not sufficient to turn them off. No ham-related equipment or papers should be situated anywhere in the field of view. The laptop or computer keyboard or monitor area should be completely free of any distractions.

If any team member cannot certify that the area is clear, ask the candidates to identify another location that is acceptable. Candidates will try anything to push the limits. However, if they are faced with an exam being terminated for “non-compliance” they will generally find a suitable location that meets the requirements. Be polite, but DO NOT allow yourself to be bullied or pressured into agreeing to any arrangement that compromises the exam's integrity.

When scanning the computer exam area (computer, seat, desk, and peripheral vision), hold the phone (camera) horizontal (landscape mode). When scanning the room (360 degree scan), hold the phone (camera) vertical (portrait mode). Finally, when setting the phone up to view the testing environment (computer monitor and keyboard as well as hands), the best view is in horizontal (landscape mode) once again. Sometimes the position and layout may require vertical (portrait mode) in order to get the full view of the monitor and keyboard. It is best to use the rear camera for this positioning as it prevents the candidates from seeing the phone screen should they receive a notification. They just did the entire scan using the rear camera so leave it in that mode if possible. Otherwise, there is no leniency for any glance toward the phone. That will result in an automatic void of the exam. Then the team needs to put the candidates back in to the waiting room and discuss whether to allow a retry or not. If the entire team is on telegram or HH, the team can discuss over telegram while muting their microphones as an alternative to putting the candidates back into the waiting room. This method prevents the need for a complete rescan should they decide to give another exam.

Begin the room scan by asking the candidates to switch the phone to the rear camera so that you

and they both have a common view. Instruct them to stand a distance of 2 to 5 feet behind the chair they are going to be sitting in which includes the computer keyboard (or as far as possible). Instruct them to point the camera toward the computer area while holding the phone (camera horizontal (landscape mode)). Then ask them to turn 360 degrees in the same direction without stopping, while standing in the same spot. If someone is in the room with the candidates, this method reduces the possibility they can stay hidden as you scan. This also allows you to see any suspicious items or technology--such as hidden cameras--that might allow another party to view the exam and assist with the test.

You should also check behind any curtains or doors that cannot be locked. Verify that all doors are closed and locked. Also, check behind shower curtains. If the scan shows something amiss in the room or the video freezes, repeat until all of the team members are satisfied. This is also the time to check the candidates's clothing, ears, and arms for watches or other technology that could potentially be used to cheat.

After you are satisfied with the exam area and the room scan, have them place their phone to view the primary monitor and keyboard. You need to view the entire screen to ensure that no extra windows, messaging, or popups are open or occurring during the exam. If you see anything, it is recommended that you void the exam and give a new one rather than compromise the integrity of the exam session.

It is recommended that both applicant's hands remain in view at all times on the desktop, keyboard, or beside it; not hidden, below the worktable, or around their face. It is not necessary to see the candidates from the second device as long as you have a good view of their entire face via the computer camera.

Optimal camera placement includes one of the cameras viewing the door used to enter the room. It is also better for the camera phone to be left on the rear camera so that the candidates cannot see any messages or notifications that pop up on the screen during the exam. Otherwise, the exam should be voided if the candidates looks at the phone during the exam. There are exceptions to this rule. It is always at the discretion of the team as a whole, to determine if the exam integrity has been compromised.

Ensure that room sounds can be monitored during the exam. Static events behind the candidate's peripheral vision or 180 degree plane (ear-to-ear, behind their head) are less concerning than are sounds coming from in front of the 180 degree plane. These could indicate the presence of covert cameras, speakers, or noise sources that may talk or distract (people and pets). In the 120-degree front field of view, be aware of any noise sources that could aide in the candidate taking the exam. This includes papers, equipment, blinking lights, and any audible devices.

#### **4.9. Screen Sharing**

After the candidate turns on screen sharing, look for any running applications. While these are not the only indicators of improper activity, they are some of the more obvious ones.

On a Mac computer, you must verify that no applications in the taskbar have a dot below them other than FINDER, CALCULATOR, and ZOOM applications. On a PC, you have to make sure the only applications that have an underline are the CALCULATOR and ZOOM applications. Absolutely nothing else can be open. Inspect the desktop icons looking for anything that may help with the exam.

The calculator should be in basic/standard view and as small as possible on the monitor's left side, so there is room for the exam. Ensure that no numbers are stored in the calculator's memory. If this were an in-person exam, the candidates would be given a 9 function basic calculator in most cases. There is no reason for an candidates to be given access to anything other than a basic standard calculator with the memory cleared. Instruct the candidates to demonstrate the memory is clear.

The computer MUST RUN ZOOM as an application--not in a web browser. They cannot use a Chromebook since this device stops the computer camera once screen sharing starts, and blocks some windows or popups from examiners' view. You cannot run the exam in older browsers such as Explorer. Candidates must use an up-to-date browser such as Chrome, Firefox, Safari, NEW Edge, or Brave. They cannot use a VPN, Incognito Mode, or any other private browsing method. Developer versions and experimental versions of any browser are not allowed. If the candidates is honest, there is no need for such privacy tools because the website is focused solely on the exam. Also, the exam may not perform correctly in these modes.

Once the browser window is open, ask the candidates to narrow it down to fit easily between the calculator on the left and the Zoom gallery on the right. This should be no more than 5 inches since the exam is only about 3 to 4 inches wide. Make sure it does not touch the top. If it does touch, this will sometimes make it hard to adjust and prevent resizing. It also can block out portions of the screen that the candidates needs to see. Cheaters use polarizing screens and other techniques to prevent the observers from seeing popups or test aids. If the browser shows desktop all the way around it, the observers may notice unusual flashing or squares occurring intermittently during the exam. This is an indication of possible breach of exam integrity and should be investigated.

Remember, the Zoom objects are not seen on the examiners screens, only on the candidates's screen. The Zoom gallery is a strip of videos that takes up about 2 or 3 inches on the screen's right side. There is also a Zoom screen control that occupies about one-half inches across the top of the candidates's screen.

#### **4.10. Starting the Exam**

Once the browser is open and sized, ask the candidates to type the exam address "exam.tools" and press enter. They will be directed to the exam site.

They will need to click the "I Understand" button in the green bar at the bottom. If it is in dark mode, have them click the black/white moon in the bottom right corner. The dark mode is more challenging for the examiners to watch, and schematics are challenging to see in dark mode. There are also applications that can provide covert communication to an candidates during the

session that is not noticeable by observers when using dark mode. Once they are in light mode, you have them join the session by clicking the button that displays Join Exam Session.

On the next screen, verify that the sizing is correct. Make sure that their name, address, and phone number are displayed. This is necessary for sizing purposes. Have the candidates squeeze up from the bottom of the browser to shorten it and cuts off the words "No Exams Have Been Taken" but leaves the words "Exam History" at the bottom. This will ensure they see all of the exam questions and schematics without scrolling.

Explain to the candidate that pressing a letter key automatically advances the questions.

If there is insufficient room on the browser to display below the "Exam History" sentence, request the candidate to use view sizing to correct this. On a PC, have the candidate press CONTROL and MINUS until it fits. (For a Mac, press COMMAND and MINUS.)

Ask the candidate to click on "start exam."

Please give the candidate the instructions and turn off all examiners' video and audio. The candidates places the pointer over the word "Remaining". When they have answered all of the questions the "Remaining" changes to a gold grade exam button that the candidates will press. Be sure to explain this. Also, they must click on "Remaining" after using the calculator to refocus the controls on the exam page in order to continue to select the "A" "B" "C" or "D" key on the keyboard. Even though using a mouse may function, mouse clicks and scrolling can break the exam.

All examiners should observe the candidate for glances in any direction other than directly at the exam screen and possibly at the keyboard. All other glances are most certainly a need for a verbal warning if not a restart or void of exam. Make sure the candidates is not wearing anything other than required prescription glasses on their face. Nothing else is to be worn during the exam and that includes hearing aids. If the candidate needs the hearing aid for the instructions, they keep them on to the point where you tell them to start. You instruct them to remove the hearing aid before turning off your microphone with the additional instruction to reinsert again before pressing the gold "Grade Exam" button.

Observe the screen view and keyboard view for any pop-ups, windows, notifications, flashing lights, or anything else suspicious that may be noticed.

Utilizing both the computer camera and second device camera, be alert to motion in the room which may be as slight as moving shadows or light changes as these are indicators of another person present in the room.

Pets are distracting to both the examiners and candidates and prevent a secure environment as well as mask other possible issues with their movement and noises. A pet may also cause a false failure by distracting the candidates or causing a glance off the screen. For these reasons and others, pets are not allowed access to the testing environment.

Finally be alert to sounds. Sounds of distant speaking, codes, or hints being given by another source. These could include a covert ear piece or speaker giving the candidates help. There could be a covert camera in the room disguised as a smoke detector, wall plate, cigarette pack, clock, book, stuffed animal, external mouse, etc. So be very alert to the possibility that they exist. A candidate cannot speak during an exam because this could give a third party the information they need to assist the candidates with unauthorized help during the exam.

#### 4.11. Finishing the Exam

After they click the “Grade Exam” button, the hard part of observing is over. The Exam Tool Operator authorizes the session to grade the exam. The score comes up as either a green PASS screen or a red FAILED screen. If you get a red FAILED screen, immediately console the candidates and ask them to close the browser window. Please do not allow the red FAILED screen to sit there and ‘stare’ them in the face accentuated the fact that they failed. If you get the green PASS screen, congratulate the candidates and immediately ask them to select “finish and sign forms”, then “finish and sign”. Please hold congratulations to the end. The second device should be removed while the examiners observe the candidates type and sign their name. Once they click the logout, the Zoom Operator stops the recording and screen share. Additionally, this person must ensure that the candidates logs out so that they cannot get back into the exam system after the session is terminated.

The examiners can switch to a Zoom Gallery View to say their final goodbyes. Remember to keep all instructions and farewells friendly but quick. If you spend time with chatter, you are inconveniencing other candidates waiting to test, and the examiners may have other things to do after the sessions are complete. The lead needs to record the score and the names of all VE’s who participated in the session.

### 5. Communications

#### 5.1. Communicating during the exam

There are several options available to teams to communicate before, during, and after an exam. We discourage Volunteer Examiners speaking on their microphones at any time there is an candidates in the session. The Candidates needs to have one point of contact and hear instructions from only one VE during the session. Having all the verbal commands coming from the Team Guide allows for better concentration on instructions by the candidates. Interruptions also distract the guide who may lose their place, repeat, or miss necessary information. The team lead should be the only one to verbally interrupt should the Team Guide fail to recognize visual clues being delivered. **Do NOT verbally interrupt when an applicant is in the breakout room or main room.** Send any observations by Telegram to the Team Guide, if urgent or exam is about to begin with the issue unresolved, use HH or DMR to tell Team Guide to, “Check Telegram.” If that fails to get the attention of Team Guide, wait until the Team Guide is about to say, “Press Start (technician, general, extra) Exam.” Then and only then, go off mute on Zoom and politely ask Team Guide to, **“Please pause and check Telegram.”**

How do we transmit visual clues? We naturally use smiles and frowns as facial clues, but they are not as noticeable or direct as needed. Therefore, when a Team Guide asks the team to verify if they are satisfied or questions the team. A yes is signified by holding a clear thumbs up closer to the camera than your face so that it is an obvious indication of your affirmative vote.

Likewise, a no is indicated by a thumbs down in the same way. The Team Guide will pause if they do not receive a unanimous “thumbs-up” vote for clarification. Team members will then communicate their issue by Telegram or Hamshack Hotline as appropriate. Once a consensus is reached the Team Guide will continue.

Other ways that we communicate are through apps or phones. All Volunteer Examiners are usually not collocated for the exam session so in-person is not feasible. Also, the distance between examiners is far enough that reliable consistent radio communication is not the ideal choice. Therefore we use a combination of Telegram, Hamshack Hotline, DMR, and Telephone communications.

## 5.2.Telegram

**Telegram** is a messaging app with a focus on speed and security, it’s fast, simple, and free. You can use Telegram on all your devices at the same time — your messages sync seamlessly across any number of your phones, tablets or computers.

With Telegram, you can send messages, photos, videos and files of any type (doc, zip, mp3, etc), as well as create groups for up to 200,000 people or channels for broadcasting to unlimited audiences. You can write to your phone contacts and find people by their usernames. As a result, Telegram is like SMS and email combined — and can take care of all your personal or business messaging needs. In addition to this, it also supports end-to-end encrypted voice calls.

We use Telegram with Multiple Group Channels. One of which is labeled PARC EXAM Communication (red circle) and the other is labeled PARC VE Team (white circle). We can also direct message if needed. Some may not understand two groups, but they are for two completely different purposes and respecting those purposes is important to maintain the group integrity. There are other Telegram Group Channels that are by invitation only.

### 5.2.1. Telegram PARC Exam (Red Circle)

**PARC EXAM** Communication (commonly referred to as “Red Circle”) is to be used only for communication directly related to the exam(s) in progress. No off-topic discussion, rambling, chatting, non-exam communication is allowed. All messages typed in this group should be very professional and succinct. Outside of exam sessions, it may be used for a pre-session alert or urgent VE Team communications. Once contact is made for that purpose, move to the general group. This group is for ALL Volunteer Examiners on any PARC Team to communicate exam concerns and information. This group should be on all members devices with alerts, sounds, banners, and notifications enabled. If you are acting as Team Guide or Team Lead, please put a separate device/account on this group so that you do not miss a message. This is the life blood of the team during an exam. Any PARC Team Member can request to be added to this group after participating in at least two sessions as an observer.



**IMPORTANT:** Please limit use of the Telegram communications medium (Red Circle) to emergencies or during exams only, between 7:00 AM and 11:00 PM. Many team members monitor the (Red Circle) Telegram Group 24/7, even while sleeping or working, to provide urgent assistance if needed. Only use (Red Circle) between 7:00 AM and 11:00 PM for issues during exams that require immediate attention and cannot be addressed through another medium.

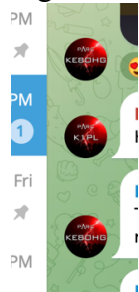
### 5.2.2. Telegram PARC VE Team (White Circle)

**PARC VE Team** (commonly referred to as “White Circle”) is used by every PARC VE that has made a commitment to continue with PARC for proctoring exams. We do not admit anyone to this group until they get to know the team. Obviously, a newbie could be confused by the extraneous non-exam communication that goes on in this group. Even though profanity is NOT allowed or respected in any communication by team members, off-topic communication is allowed in this group channel. That communication may include conversation about Hamshack Hotline, Telegram, Exam Tools, Zoom, radios, dinner, anecdotal comments, observations, concerns, and many other things that are not critical to the exam. Any PARC Team Member can request to be added to this group after participating in a few sessions using the PARC EXAM Communications group.

### 5.2.3. Telegram Setup

When you download Telegram, you will need to use a mobile phone for security purposes. We ask that you follow a few uniform guidelines to ensure you are easily recognizable on the Telegram system and among our membership, confirming your authorization to be in the session. Please name your account with your first name and callsign as your first name, and your last name as your last name. Additionally, set your profile image using the PARC profile picture that will be sent to you. This helps clearly identify you when you send a message, allowing us to respond quickly.

As a member, you should be proud of your affiliation with the first online VE team that has been operating continuously since the start of the COVID-19 pandemic. By using the same profile picture in Telegram, you will be clearly recognizable as an authorized PARC VE Team member, displaying your callsign. This uniformity ensures that the Telegram channel will appear organized and professional, as shown in the example:



If some members choose not to use the personalized profile image, the channel will appear disorganized, as shown in the following example:



Uniformity leads to recognition and exudes professionalism, which we embrace as our mantra. Thank you for your cooperation.

### 5.3. Hamshack Hotline (HH)

**Hamshack Hotline (HH)** is a FREE dedicated voip telecom service for the Ham Radio community. Typically, phones are established in hamshacks, EOCs, Clubs & club members, ARES, and other Ham related areas and functions. It is not the intention of HH to replace traffic carried over radio in an emergency or other tactical operation, but rather to augment it, by offloading managerial tactical operations and providing a full duplex path for such communications when spectrum is occupied, conditions diminished, or otherwise unavailable. HH also supports FAXing of information (with appropriate equipment) which allows tactical offices to share documents & data between tactical locations. In a non-tactical use, HH is an effective resource for off-air troubleshooting when you need to coordinate a troubleshoot of a radio circuit off-air and between multiple SMEs. In addition to all this, conference bridges on the HH network allow large groups of Hams to coordinate & meet in real time anywhere in the world.

Getting on board HH is easy! Just acquire a supported SIP capable phone (the HH network prefers to register hardware phones first), and open a ticket once you have your phone.

Hamshack Hotline is used by the team for backend live voice communications. There is a Hamshack Hotline extension at all PARC club shacks, PARC Control Rooms, and the Auburn University Club shack. In addition, all of the PARC VE Admins have HH phones in their homes and have HH on their mobiles as an application. If a team experiences an anomaly, bug, error, glitch, etc. with an exam, exam tools, Zoom, or the candidates, they can call the backend for expedited assistance. It is highly recommended that all Team Guides and Team Leads acquire a HH extension and phone to access the PARC VE Team conference bridge. Anyone that is a member of the team is encouraged to acquire a VOIP Phone for access to HH and the back end communications. PARC can program and ship a phone on request if needed. There are several options and cost varies depending on phone.

NOTE: Please refrain from leaving HH while sessions are in progress, as this interrupts important communications and can distract the Guide reading to the applicant or disrupt exams in other rooms. Additionally, please limit bridge communications to essential information during active sessions.

### 5.4. Hams Over IP (HOIP)

**Hams Over IP (HOIP)** is a VOIP service similar to HH that is growing quickly. PARC is taking steps to provide member access to this service as a backup to the services of the HH system. HOIP is a free service for licensed amateur radio operators.

NOTE: Please refrain from leaving HOIP while sessions are in progress, as this interrupts important communications and can distract the Guide reading to the applicant or disrupt exams in other rooms. Additionally, please limit bridge communications to essential information during active sessions.

## 5.5. Digital Mobile Radio (DMR)

**Digital Mobile Radio (DMR)** is a digital radio communication service employing authentic radio transceivers and repeaters. The PARC repeater is seamlessly integrated into this digital service within the local areas of Alabama. PARC actively facilitates a bridge accessible to all its members on DMR. This unique feature empowers members, irrespective of their geographical location, to engage in instantaneous over-the-air communication with fellow PARC members via radio through the DMR network.

## 6. Training Sessions

If you are ready to try your hand at some of the team positions, PARC can schedule a special training session that will have a much broader time frame per candidates. The team will reduce the number of sessions from 4 per hour to 2-3. Fewer candidates per hour will allow everyone to get comfortable with what is going on. There will be time for discussions between exams, if necessary as well as a debriefing.

During a training session, each trainee can be assigned a different role. We will rotate the team positions and responsibilities among the VEs who wish to practice and prepare. Do not expect to be the best. And do not even expect it to go smoothly. It may be “clunky” and things may go wrong (actually, they will go wrong), and you will probably make mistakes. This is okay. This is to be expected. We will be “in the background” to help. We will not let you fail. It is training. You will learn and hopefully, have some fun in the end while providing a great service.

Now it is time for you to let us know you are ready.

We will not rush anyone. We want you to be comfortable and move at your own pace. You will be an observer on your first three sessions. Please keep your microphone muted during any time an applicant is in the session unless instructed otherwise by the room lead. Make notes of any questions you might have and we will be sure and offer you plenty of time to ask questions. We expect lots of questions and are happy to answer them all. After your third session, we will begin to grant additional access and offer additional opportunities as you are more comfortable with the team and the process. Do not worry, we have team members that have never did anything more than be an observing proctor and that is great. We will however, remove the (OBSERVER) designation after your third session.

There are many things you will be gradually introduced to, which included sand box, exam tools, signer, recording, HH, Telegram, Zoom Tools, Scheduling, Timing, Reporting, and much more. But all in due time and only if you want to take on more responsibility.

## 7. Proctoring Sessions

When proctoring sessions, look for anything suspicious that could lead to a breach of exam integrity.

Read over the website's online exam procedures, rules, and the FAQ (Frequently Asked Questions) document. If there is anything that is not clear, send us an email to provide you with an explanation. If you have a question and it is not clear on the website, then it is possible that others have the same questions but have not asked. Asking questions and finding errors on the website helps everyone. Once you have reviewed and studied the website information multiple times and observed a few sessions, you will be ready to proctor exams. We would rather void an exam than allow the validity of online testing to be called into question. You will be trained on all aspects of the exam process, including signing as a VE for the exams electronically. You can set up your profile and signature using an iPad, touchscreen, or even using a mouse. It does not have to be pretty, just unique to you.

You will not be automatically listed in exams when you start proctoring. All candidates that reserved a time-slot prior to the time you were added to Exam-Tools will NOT include you as an examiner. The Administration Team will add you to sessions manually as time permits. Do not be impatient and message that you are not in the session. They are aware that you are not in the session and will get you added when and if they can add you.

## 8. Team Positions and Responsibilities

Unlike in-person exams, online exams are comprised of several different positions:

- 8.1. VE Liaison** – The VEC recognizes this person as the official contact for the team
- 8.2. Team Guide / Conductor** – This person gives the instructions verbally to the candidates and guides them into and out of the exam
- 8.3. Zoom Operator** – The person responsible for admitting and removing people from the Waiting Room into the Main Room and Breakout Rooms. Also, may rename the candidate's Zoom devices
- 8.4. VE Signatories** – It takes a minimum of three VEs to sign the documents for submission
- 8.5. Exam Tools Operator** – Ensures that all documents are signed by the VE signatories, and that all documents are completed for submission
- 8.6. Exam Scheduler** – Handles time-slot assignments, organizes exam sessions, and uploads them for the sessions

- 8.7. Team Accountant** – Monitors the payments and ensures that all candidates pay their fee and submit to the VEC
- 8.8. Team Contact** – Monitors and responds to email communications. Documents and communicates any unusual situations or issues with the rest of the team
- 8.9. Administration Team** The group that handles issues on the backend system and makes adjustments to candidates and exam sessions.

## 9. Building a Team

When you are ready to build a team, you can invite VEs to be trained at PARC sessions until you have enough examiners to begin hosting your own sessions. You may take as much time as you like. Remember, this is not a competition; we are all in this together to help the community.

## 10. Selecting an Exam Session Type

Choose the session type that best fits your needs. VEs can participate in more than one. PARC offers:

- 10.1. Team VE** – You are a member of the PARC VE Team and participate in as many exams as you like.
- 10.2. Breakout Team Sessions** – Your team is assigned a breakout room. The candidates come into the main room and are given the main instructions, then passed to your team's breakout room to conduct the scan, setup, and exam.
- 10.3. Hosted Sessions** – These sessions run on PARC Zoom, Hosting, Scheduling, Payment System, and everything associated. Your team is handed off the controls at a scheduled time of day. Your team performs all functions of the exam except paperwork, payment, submission, and tracking.
- 10.4. Independent Support** – With this type of session, you are on your own. You provide your Zoom, scheduling, website, instructions, hosting, payments, tax reporting and payment, submissions, and tracking.

## 11. Leading a Session

### 11.1. The Script

You'll want to first practice reading the script out loud before you attempt to be the session lead. The script is available on the PARC website. It is periodically updated due to changes from the FCC, VEC, and Exam Tools software updates. Once you have read it out loud a few times,

record yourself and listen to it a few times. Try using different microphones—with headsets, without headsets, etc—to get comfortable. There is no such thing as too much practice. You will not be pleased with your live performance until you have done it more than a dozen times.

It's important to read the script to the candidates to guide them through an exam. They need to have a full and thorough understanding of all the rules, procedures, as well as the reasons why it is important. Please do not adlib or customize the script. All of the wording has been tried, tested, revised over time. There is a reason for everything in the instructions

## **11.2. Technical Competence**

You will be the person primarily responsible for answering any questions the candidates might have, so familiarize yourself with different types of computers, phones, applications, browsers, computer, and network lingo. You do not have to be an expert, but it helps to be familiar. Don't be afraid to depend on your team members while you are learning. The more diverse your team is, the broader the knowledge of different equipment your team will possess.

Your equipment needs to be functioning properly. Be sure that you have a good internet connection of 30 Mbps or better, along with a UPS (Uninterruptable Power Supply)/backup power supply, good lighting on your face, and preferably multiple monitors to display the video. Optionally, you might want to set up a second laptop or iPad displaying the script to read. A good microphone and speakers are vital to conducting an exam.

Look directly into your camera! Do not set up your camera at an angle to your face while you are reading. We do not use Dell laptops because they mount the camera at the bottom of the laptop monitor. This results in the viewers including candidates and other examiners looking up your nose or under your chin. Any other computer using this placement of the camera should not be used. If you have such a device, purchase an external camera to plug in and place so that the view is face on instead of an angle. Use a plain background or a PARC background. Do not use distracting wallpapers. Almost any wallpaper can be distracting—either a coordinated or blank background is best.

## **12. Intent and Rationale**

## **13. PARC VE Team Policies and Guidelines**

### **13.1. ARRL Session Points**

You will receive one session point for each session you participate in, regardless of the number of applicants that are in the session. A session is based on all applicants and exams conducted in a consecutive period of time on the same day. Exam Tools sessions are not the same as exam sessions. Exam Tools sessions are each applicant time slot. PARC uses the Exam Tools sessions to space out the applicants to match the proprietary PARC scheduling system time slots. This allows the Volunteer Examiners to see the time spacing of the individuals and recording of codes for each applicant for the Volunteer Examiners to view. After the entire set of Exam Tools sessions are closed for the day (or night), all applicants will be combined for submission giving only one credit to each Volunteer Examiner that participated in proctoring exams no matter whether they signed once, multiple times, or not at all. Everyone will get credit for one participation session. An exception to this rule is when a Volunteer Examiner participates in more than one GROUPS examination sessions during the same day or the exam sessions are completely different start times with hours in between such as a morning, afternoon, and evening session may count as three different sessions if the video conference is ended and a new one started at a later time. For in-person exams, it is one session point count for the entire days exams in one setting.

### **13.2. Appearance**

You need to be as professional as possible—both in appearance as well as demeanor. Many times we are the candidates's first contact with the hobby, so please dress appropriately when performing as session lead. It's not necessary to dress in a suit and tie. However, a nice button-up shirt or a golf shirt with a ham-related logo looks great. Do not show up on the Zoom screen looking as though you just "fell out of bed" or have not combed your hair or bathed in a week. If that is your style, then it might be better to allow others to lead. There are still things you can do.

### **13.3. Language and behavior**

#### **13.3.1. When Applicants are Present**

To ensure fairness and integrity in the examination process, all communication during exams must be conducted in English. This policy applies to all proctors, administrators, and applicants present in the examination room during the exam session. From the moment applicants enter the exam area until they leave, all verbal and written communication must be in English. Proctors are required to deliver all instructions and announcements clearly in English and address any applicant questions in English to ensure consistent information for all.

Applicants must communicate exclusively in English while in the examination room to prevent misunderstandings or unauthorized information sharing. Violations of this requirement will result in warnings or potential disqualification. Proctors will monitor the examination environment to maintain integrity and prevent any unauthorized exchange of information. Use of profanity or street language is strictly prohibited.

By adhering to this policy, we aim to create a fair and secure examination environment for all participants. Thank you for your cooperation and understanding.

### **13.3.2. Outside Applicant Processing Times**

At all PARC events and during any VE Session, it is essential to respect everyone in the room, including males, females, children, individuals of various religions, clergy, and others who do not appreciate profanity or street language. Such language is considered highly offensive and is strictly prohibited. Additionally, off-color remarks that could be offensive or create a hostile environment should not be used under any circumstances. We are committed to maintaining a respectful and inclusive atmosphere for all participants. Thank you for your understanding and cooperation in upholding these standards.

### **13.3.3. Member Behavior**

At all PARC events and during any VE Session, it is crucial to display professional behavior and respect towards everyone present. Any form of bullying or attempt to embarrass another VE will not be tolerated. Those found engaging in such conduct will receive a warning and may be asked to leave. We are dedicated to creating a respectful, inclusive, and supportive environment for all participants. Thank you for your cooperation in maintaining these standards.

## **13.4. Joining PARC Team Groups**

PARC Radio & Technology Volunteer Examiners comprises multiple team groups. When a volunteer examiner joins PARC, they are not automatically assigned to any specific team group. Currently, the TW and SS team groups are open to all PARC members, who are welcome to volunteer whenever they are available.

There are many other team groups with varying hours from early morning until midnight, every day of the week. However, please note that joining these team groups requires an invitation. Unlike the TW and SS sessions, which feature large availability and multiple breakout rooms, other team groups operate with a single-room model and limit participation to invited VEs only. This approach aims to create a less intimidating environment for applicants.

All team groups are looking for individuals who present themselves in a kind, caring, and professional manner, always wearing a smile in front of the applicants. Remember to turn off your video if you feel emotions that are not positive and exciting. Always present a positive image with your words and expressions when on video.



Therefore, please refrain from joining sessions uninvited. If you are interested in joining other team groups, indicate your availability in the white circle and offer your services. If a team group has openings and you have been an active member for more than 30 days, you will likely receive an invitation.

### 13.5. Verbal Communications During Session

- **Refrain from verbal interjections during sessions unless requested by the facilitator.** Use Telegram or VOIP for communication to avoid confusion.
- **Respect the facilitator's pace.** Allow them to manage the session independently, even if they are new. Trust that they will ask for help if needed.
- **Use Zoom reactions to get the facilitator's attention,** such as indicating "NO".
- **In critical situations:** If the facilitator overlooks important points like:
  - "Are we happy with the room scan?"
  - "Is the team okay with the computer?"
  - Entering the Team ID and PIN screen

And they do not check Telegram, simply say, "Please check Telegram," and wait for further instructions before saying anything else. Give them a chance to respond. At the point of "Start \_\_\_ Exam." You can say "HOLD" if the matter has not been addressed by the facilitator.

### 13.6. Scoring

NOTE: For score posting, the normal format please follow this example:

<b>Marty Ringham</b>	<b>15YO ARRL</b>	<b>10:42</b>	<b>KT</b>	<b>31/35</b>
<b>NAME</b>	<b>AGE SQ</b>	<b>TIME</b>	<b>ELEMENT</b>	<b>SCORE</b>

**AGE:** If a YOUTH add the Age after the name

**SQ:** Answer to Survey Question

- Referral
- Repeat
- Online Search
- ARRL
- hamstudy.org
- Ham Radio Prep

**TIME:** From Start to Finish and Sign

**ELEMENT:**

- KT = Element 2 Technician
- AG= Element 3 General
- AE = Element 4 Amateur Extra

**SCORE:** Number/ out of possible 35 or 50

### 13.7. Zoom Setup as a PARC Member

We are immensely proud of our accomplishments as a team. Our success is due to the dedication of each member, and we want everyone to feel proud of being part of our esteemed club. Over time, we grow close and support each other like family. Being a member of PARC is more than just being a Volunteer Examiner; it means helping and caring for one another.

To show your connection with PARC, we encourage you to use our logos on your clothing, QSL cards, and other items. Additionally, we ask that you set up your Zoom account using the personalized PARC profile image provided to you. This image should be your Zoom profile picture, displaying your callsign. This uniformity helps us recognize you as a valid member, allowing us to admit you to sessions swiftly and preventing accidental removal.

For better identification, we suggest creating a separate Zoom account using your callsign (e.g., callsign@yahoo.com or callsign@gmail.com). Label your account name as "VE Firstname Callsign" so it automatically appears correctly every time you log into a session. This reduces the need for manual name changes and ensures that both fellow VEs and applicants can easily identify you. Thank you for your cooperation and for showing your PARC pride.

### **13.7.1. PARC Personalized Profile Image**

While many aspects of our guidelines are optional, the use of the PARC Personalized Profile Image is required for all PARC members when proctoring exams. This unified visual presence provides a consistent and professional appearance to the applicants, giving them confidence and comfort in knowing that everyone in the room is an authorized part of the exam team. Below is an example of the PARC Personalized Profile Image that will be provided to you upon your completion of PARC Training and joining PARC and the VE Team. It will include your Callsign and show to the applicant when your video is turned off during the exam and at other times.:



### **13.7.2. PARC Zoom Wallpaper**

The use of the PARC Zoom wallpaper is mandatory for all PARC members when proctoring exams. This unified visual presence provides a consistent and professional appearance to the

applicants, giving them confidence and comfort in knowing that everyone in the room is an authorized part of the exam team. Below is an example of the PARC Zoom wallpaper that will be provided to you upon expressing your interest in joining PARC and the VE Team:



### **13.8. Zoom Session Activation and Admission Times for VE's and Applicants**

We have an established procedure for the admission of applicants for KJ4PJE exams. The schedule applies to Tuesday night, Wednesday night, Saturday morning, and Sunday night sessions. Below are the detailed instructions to ensure everyone is on the same page:

#### **13.8.1. Session Start Times**

The Zoom session will begin as early as one hour before the first applicants exam time. The Zoom session will start no later than 15 minutes before the exam, barring any internet/system issues.

#### **13.8.2. Applicant Instructions on Expected Start Time**

Applicants receive an email instructing them to join 45 minutes early to test their equipment. After testing, applicants can pause until we bring them into the Zoom session. If prior applicants finish faster than expected, new applicants are informed they may be offered an opportunity to test early.

#### **13.8.3. VE Instructions on Expected Start Time**

Under no circumstances will a KJ4PJE exam start earlier than 15 minutes before the first applicant scheduled exam time. This allows VEs (Volunteer Examiners) to chat or prepare as needed. Those not interested in chatting should join about 15 minutes before the first exam to be ready.

### 13.8.4. Participation

This procedure ensures that everyone who wants to participate knows when to join. We aim not to exclude anyone interested in being part of the exam session.

### 13.8.5. Applicability

These instructions only apply to KJ4PJE exams. Other sessions (DP, LN, GM) follow their team leads' expectations.

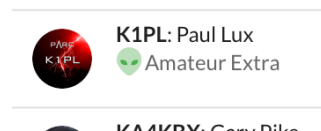
### 13.8.6. Team Group Communication

It is strongly recommended that team leads post on Telegram when they have applicants ready. This allows others a chance to confirm their anticipated participation, ensuring no one is left out. Thank you for understanding and adhering to these procedures. This ensures everyone has the same expectations.

## 13.9. Exam Tools Setup as a PARC Member

We provide comprehensive training for all our VEs on the proper use of Exam Tools, ensuring the process is manageable and not overwhelming. You can learn and progress at your own pace, whether that means advancing quickly or taking your time, even if it takes months or years. We value any level of help you can provide, and no contribution is too small.

We also ask that you set your profile image on Exam Tools to your personalized PARC profile image. This helps us easily identify authorized helpers with full access, as well as observers or non-members. Your profile image on Exam Tools should resemble the example shown below:



### 13.10. Quiet Hours

Please limit use of the Telegram communications medium (Red Circle) to emergencies or during exams only, between 7:00 AM and 11:00 PM. Many team members monitor the (Red Circle) Telegram Group 24/7, even while sleeping or working, to provide urgent assistance if needed. Only use (Red Circle) between 7:00 AM and 11:00 PM for issues during exams that require immediate attention and cannot be addressed through another medium.

### 13.11. Comments and Suggestions

We value every member's input and suggestions. If you encounter any queries or uncertainties not addressed in the VE Team Manual, please don't hesitate to raise them. We are committed to enhancing our operations, and your input is crucial to this goal. Whether it's clarifying existing

procedures, exploring alternative approaches, or addressing outdated practices, we welcome your contributions to our collective improvement.

Our objectives are to maintain the integrity of exams, promote the hobby in the best possible light, and foster a welcoming and enjoyable environment for our entire community. If you have any questions or ideas that align with these principles, please share them. Together, we can ensure that our team continues to thrive and serve its members effectively.

Additionally, remember that efficiency and professionalism are highly appreciated by all parties involved in the exam process.

### **13.12. Be Professional and Courteous when Proctoring**

Remember—even though we are volunteers, we need to be professional, courteous and as accommodating as possible. Don't take any actions that might open yourself up to liability. For example, avoid directing an inexperienced person to make changes on their computer that might cause them to feel that their computer was damaged or they lost data.

When dealing with unprepared or ill-equipped candidates, bear in mind you may be keeping other candidates waiting as well as wasting the time of the other examiners in the session.

Do your best, but do not go too far.

Welcome aboard.

**This is a working document and will have updates in the future.**

**If you find anything that could use more explanation, we are happy to add it. Please email us the information at [parcve@yahoo.com](mailto:parcve@yahoo.com)**

## 14. Appendix

### 14.1. Frequently Asked Questions

#### Frequently Asked Questions

##### 1. How do I schedule an exam?

Online Exams: Go to the “SCHEDULE” tab above. Then select a TIME SLOT for your exam.

In-Person Exams: Follow the instructions to email and request an in-person exam session by going to the “IN-PERSON VE TESTING” tab above.

##### 2. When will I receive my CSCE?

Online Exams: Within 48 hours by email.

In-Person Exams: At the time of successful completion of an exam element.

##### 3. When will my callsign be issued by the FCC?

The normal process is 3 to 4 weeks. However, we process electronically, which result is new license and upgrades occurring within 5-7 business days under most situations.

##### 4. When will I receive a link to my exam session?

Ham Exam Links are emailed within 48 hours of selecting a time-slot and payment. If you register within 48 hours, continue to check your email, registrations are only done once a day. Be sure to check your spam or junk folder at least 8 hours prior to your exam. This registration link is where you complete the registration to get your FRN and complete your Form 605 as required by the FCC. This must be done in order to be admitted to the exam.

##### 5. Can I take more than one exam in a session?

Online Exams: We have a limit due to the Zoom System Sessions and being able to give as many people the opportunity to take an exam as possible. With advance request it is possible to provide additional elements. There is a requirement for your practice pass percentage, time per element, and availability of multiple time-slots that are back to back on a given day.

In-Person Exams: Yes, provided you do not take too long on the first exam and/or you request multiple exams in advance from the exam team.

##### 6. What payment methods do you accept?

Online Exams: We only accept payment by PayPal. The payment has to be made prior to registering for the exam or your session may be deleted without notice. It is a great help if you are able to request an invoice by email from the exam team in advance. Please use your PayPal or checking account and not a credit card if possible.

In-Person Exams: All applicants must bring \$15.00 exact change in cash. No checks or credit cards for in-person sessions.

##### 7. Can I find out which questions I missed?

Online Exams: No, we do not have this information available to candidates.

In-Person Exams: No, it is against the rules for us to disclose any information other than the number you missed on your exam.

**8. I have special needs; can you provide a verbal exam?**

Online Exams: Yes, A VE specified by the Exam Team can read the questions off of video a maximum of two times per question. You must request this type of exam in advance and complete your exam within thirty minutes.

In-Person Exams: Yes, A VE selected by the Exam Team can read you the questions and answers. You must complete your exam within one hour.

**9. Can someone I know read the exam to me?**

NO! This is absolutely prohibited. No one may be present during your exam that is not a VE or taking an exam.

EXCEPTION: children under 13 may have one parent observe at a distance.

**10. I cannot use an on-screen calculator. I have special needs that prevent me from doing so. Can I use scrap paper or a manual calculator?**

Online Exams: No, you must use a basic on-screen calculator app. If you are unable to do so, you must take an in-person exam. Online exams are a convenience and are at the discretion of the VE Team. There is no requirement to provide any accommodations, as all team members are all volunteers. If any requirement is too difficult for you to perform, you will need to seek out an in-person exam.

In-Person Exams: You are permitted a single piece of blank paper which is provided by the exam team and a basic calculator with no memory or special functions.

**11. Will you give an online exam to a person who is not a citizen of the USA?**

We only give exams to persons who possess proper photo ID issued by the US Government or a state of the USA. This ID must be a state issued driver's license, a state issued non-driver's license, or a US Passport. Any ID used must have been issued within the last five years. Up to ten years if an unexpired Star ID or unexpired passport (must have your valid current residential address, no business, mail service, or non-residential addresses). Non-US Passports are not accepted for online exams. Citizenship is not a requirement. For persons under 18, they may present two forms of ID from the ID list as long as a parent or guardian with one of the three forms of ID above is present and identifies themselves and the minor. Do NOT schedule an exam if you do not have the proper ID. Failure to provide the above required documents will result in the exam session being terminated without any refund.

**12. I do not have a cell phone with a camera, can I still take an exam online?**

You must have a second device with a camera that will be placed to view your computer screen, keyboard, and your hands for the entire exam session. Some people have been successful using an iPad as their second device. However, it is up to the discretion of the exam team if the placement and view of the second device is acceptable. If you do not have a second device, you will need to find an in-person exam session for your exam. **TWO DEVICES WITH THE ZOOM APPLICATION AND A CAMERA THAT WILL BE USED FOR THE DURATION OF THE EXAM ARE REQUIRED!**

**13. Can I use an iPad or notebook for my computer to take my exam?**

Online Exams: No, we require a camera view of your face for the duration of the exam. These devices typically shut off the camera when sharing the screen and that is not acceptable. You must use a laptop or desktop that has a camera in the center of the screen looking at your face as well as the second camera device to the side.

In-Person Exams: Yes, as long as it can be determined there is no assistive software on the

device, you may be permitted to use your device at the exam. This is at the discretion of the exam team.

**14. My exam session time has passed, and I am still in the waiting room, what should I do?**

Be patient, if you are in the waiting room, that means you have received a link and are on the schedule. Some people take longer than others and can cause the online sessions to run behind. Rest assured that you will be brought into the exam session as quickly as the exam team can get you in. Also, this is a good time to make sure your devices are named properly. If the exam team does not see your name on your device, you will not get admitted until everyone else has been tested, if at all. Watch the “chat” in Zoom for messages. Use this time to review our website or study.

**15. I cannot figure out how to rename my devices, what should I do?**

You cannot rename your devices from the waiting room. You will need to go to the zoom website and sign into your account. Change the first and last name to reflect your name. Then add “computer” or “phone” after your last name in the last name field. Save and remain logged into your zoom account. Now go back to the email and click on the link. You cannot rename devices once you are in the waiting room. You have to rename your devices before you join the session. You do this in your profile. Understand that you must use the Zoom application which you must download. You cannot run Zoom in a browser. To rename your devices, you can follow these instructions at these links to complete the process:

<https://support.zoom.us/hc/en-us/articles/201363203-Customizing-your-Profile>

**16. I paid for my exam, but I got a non-payment notice by email, what should I do?**

Either PayPal did not process your payment or your name and email on your PayPal payment do not match your name or email on your exam application/registration. You will need to request an invoice and we will include your name on the subject line.

**17. I have signed up on the waitlist, but I have not received any communication. What should I do?**

First, go to our website at [parcradio.org](http://parcradio.org) and click on the schedule tab at the top of the page and look for an available time slot. If you still cannot find a time slot, send an email to <mailto:vetesting@yahoo.com> and inform us of dates that you are available to take an exam and if you prefer morning, afternoon, or evening.

**18. I need accommodations to take my exam, how can I arrange accommodations?**

Online Exam: We can provide reading of questions to the visually impaired. Outside of that, you will have to contact the Exam Team to see if there is anything they can do. You will still have to meet ALL of the requirements and standards of the online exam as specified on this website. Online exams may not be for you if you require accommodations. you may need to seek and test at an in-person exam.

In-Person Exam: Reasonable accommodations can usually be provided with restrictions based on the location of the exam and at the sole discretion of the exam team. All VE's are volunteers and are under no obligation or requirement to provide any exam that they are uncomfortable or unwilling to perform.

**19. Is there a time limit for the exam?**

Online Exam: Yes, online session limitations are limited to a maximum time of 30 minutes which includes your setup time and the reading of our procedures. However, the average person can



take an exam in about 10 minutes.

In-Person Exam: Yes, most exam teams are at an exam session for up to one hour. Anything beyond that should be requested of the exam team in advance. Since the Exam Team members are volunteers, it may not be possible to have enough VE's available beyond the one-hour time frame. This will vary by exam session.

**20. What are donations for?**

The Donation Link is not a requirement or a request for registering for exam sessions. The link is on all pages of our website for those that want to contribute to the operation of our group. Donations are used to build equipment, teach radio classes, provide internet, subscriptions, power, training and other operations of the club. While we do use a lot of this money for infrastructure to conduct online exams, that is not all it is used for. Neither club is supported by funds from any school or group. The funding is completely provided by members donations and the donations of others in the ham community. Remember, there is no request to make a donation as a requirement to take an exam. Any donations are greatly appreciated and are totally independent of our testing activities which we provide as a way to help the amateur radio community.

**21. I have never used Zoom; do I have to download Zoom to my devices?**

Yes! The Zoom app must be downloaded and run. You cannot run Zoom from a browser/website for the exam.

**22. Do I have to have an FRN?**

Online Exam: Yes! The FRN is required for online exams. The FRN is a federal number that is issued by the FCC and requires you to verify your identity.

In-Person Exam: No, at an in-person exam you can provide an SSN on your application.

**23. Do I need my PIN for the exam?**

No! We only want to see your driver's license unless you are under 18. If you are under 18, please see the ID requirements under rules on the online exam page.

**24. How many forms of ID do I need for the exam?**

We only want to see your driver's license unless you are under 18. If you are under 18, please see the ID requirements under rules on the online exam page. If you do not have a US State Driver's License, please see the identification requirements on the online testing tab.

**25. How do I get an automatic upgrade to General?**

The only credit available past the grace period is for those who held Technician Class license before March 21, 1987. Proof of that will get you credit for Element 3, per 97.505(a)4. You will need to take and pass the Technician exam (Element 2). If the credit is applicable, your new license will be a General class license.

**26. Can I use a mouse or external keyboard?**

No! You will not need them, and they are not allowed. To navigate the exam, you will use the keys A, B, C, and D on your keyboard to select the correct answer on the question. This will not only answer the question, it will automatically advance to the next question and light it up for you to answer. The question will be bottom justified to make sure you can see any schematics which would appear above the question. The small amount of adjustments is easily done using a trackpad. If you are using a PC, of course you can use the mouse for that portion of setting up your exam.

**27. What happens if I miss my exam timeslot?**

Please respect the time of the volunteer examiners along with any candidates that are waiting to take their exam after you. If you need to reschedule, please email us as soon as possible so that someone else may be able to take that slot. If you fail to show or do not email at least 24 hours in advance, your session will be marked as a no-show.

**28. How do I test my Zoom settings?**

You will need to download the Zoom application and set up your profile. Then test your video and audio using these procedures at this website: [Testing Procedures](#)

After making sure you audio and video settings are correct and working, go to Zoom Test to test your equipment in Zoom using this link: [Zoom Testing](#)



## 14.2. Legend of codes used in Exam Tools

### SESSION TABLE:

C = Cancelled

D = Detailed read, Deep scan of computer (not req'd) and room check performed (Start with ID)

E = Equipment Concerns

F = Full Read required, no instructions have been given. Applicant was passed through without any instructions or checks performed.

I = Instructions given in a group read (basic read - no scan or equipment setup - thorough scan needed) (Start with ID)

P = Need Phone Number

R = Initial instructions given and room scan performed. Team will need to check ID and computer. If any member of the team so desires, they can request an additional room scan.

S = Detailed instructions have been given, room has been scanned, verified ID is present, and set up the computer for the exam. NO Deep Scan (Task Manager etc...) has been performed (and it is not required unless the team has a suspicion or other reason to request one.) Team should be able to check ID and start with a screen share.

T = Difficult Applicant

TTT = Difficult Applicant w/ Attitude Problem

RC = Repeat Customer

RA = Repeat Attempt

ME = Multiple Exams

KT = Technician Element

AG = General Element

AE = Extra Element

Y = Youth (without number means get age)

Y:14 + Youth with age

YC = Youth must have parent in room! (12 and under)

DEC = Decoy exam - not a real applicant

HHH = LAST RESCHEDULE from multiple issues

### Exam Header:

KJ4PJE: PARC - REMOTE Online Testing Session - SS - GREGORY SUNDERLAND

Team Identifier: PARC EXAMS Online / In-Person – Team Group – Applicants First Middle and Last Name

Team Group Starts with an O### then it is an Online Team code.

Team Group Starts with an I### then it is an In-Person Team code.

Team Group Contains an SMTWF then it is a day of week code.

### **14.3. Exam Session Scripts**

#### **14.3.1. Short Script Instructions**

**ATTENTION: All VE's please mute your microphone at this time.**

**Before we begin, we want to bring your phone into the session. Is your phone and iPhone or something else?**

**(If it is an iPhone ask them to click on cancel)**

**(If it is something else, ask them to click on your image, not any of the selections in the dialogue box)**

1. This is a timed exam, so you will need to complete the test without any interruptions.
2. You agree to keep attention on your computer screen at all times. Don't let your eyes wander to other parts of the room and don't leave your seat during the exam.
3. You are not allowed to read any questions or answers out loud and you cannot talk to yourself.
4. You must remove any drinks, snacks, papers, or anything else that might distract you including vapes and tobacco products.
5. You cannot have any visitors or pets in the room, so please close and lock all doors.
6. Since you cannot use scrap paper or manual calculators, you can use an on-screen calculator app.

**Do you want to use a calculator app?**

**(If there are multiple applicants, ask them to raise their hands)**

7. Please move the calculator app all the way to the left side of your screen.
8. You should only have on your screen the calculator app and the zoom app. All browsers, emails, notifications, and notes must not only be closed, but they have to be shut down and quit completely.

**\*STOP HERE FOR MULTI-CANDIDATE INSTRUCTIONS - BEGIN BELOW FOR INDIVIDUAL READING OF INSTRUCTIONS\***

#### ***IDENTIFICATION***

1. Please hold your driver's license up to the camera on your computer screen close and steady.
2. Flip it around to the back side.
3. Put that in your back pocket or a drawer, out of view along with any other papers or documents.

***Please start recording now.***



1. We need you to verify that you have read the website instructions and agreed to the following terms:
2. That you will share your entire screen.
3. For the exam session will be recorded and stored.

4. And if the Exam Team suspects a possibility of cheating, they will terminate your exam, the exam fee will be forfeited, and you will be barred from taking any future online exams?
5. Please answer with a yes or no.

### **ROOM SCAN**

1. Now take your cellphone, change to your rear camera, not your selfie camera. Stand up behind your chair about 2 to 5 feet if you can. Point your camera toward your computer and scan the area holding the phone horizontal.
2. Now hold your phone vertically. While standing in the same spot, make a 360 degree turn without stopping in the same direction with your camera.
3. Please turn your phone back horizontal and set the phone where it views your monitor, keyboard, and hands.

### **SCREEN SHARE**

1. On the laptop press the "SHARE SCREEN" button at the bottom of the screen. It is the green button.
2. Then press the "SHARE" button in the bottom right hand corner of that dialog box. It is the blue button.
  - **For a Mac computer:**
    - \* DO NOT READ \* Look across the task bar for any dots under the applications. - -
    - The only apps that may have a dot under them are the finder, Calculator, and Zoom apps.
    - Look at the top left corner of your screen for the apple, click on the apple. Now click on force quit which is about the fifth item down.
    - Hold your command key and click all items other than finder, calculator, and zoom. Then click force quit.
  - In the [menu bar](#) (bar across the top) on your Mac, click [Control Center](#) 
  - In Control Center, click the Do Not Disturb icon 
  - The Do Not Disturb icon appears in the menu bar to indicate Do Not Disturb is on. To close Control Center, click anywhere on the desktop.
- **If using a PC:**
  - \* DO NOT READ \* Look across the task bar for any bars or lines under the applications. The only apps that may have a line under them are the Calculator and Zoom apps.
  - Go to the bottom right-hand corner of the screen and look to the right of the time and date. You are looking for a text balloon, it may or may not have a number on it, and right click on it. Then click focus assist followed by clicking priority only.
  - Right click on the task bar to open Task Manager.
  - \* DO NOT READ \* (If this fails click CONTROL-SHIFT-ESCAPE all at once) Make sure all applications are closed except the ones we are using.

3. \* DO NOT READ \* Make sure all apps and processes are quit except for zoom and a calculator app.
4. Move the calculator to the left side of the screen.
5. Open the browser and narrow it down so that it fits between the calculator app and the zoom app. The exam is only 3 to 4 inches wide so narrow it down now.
6. Type in the URL bar at the top of the browser "EXAM.TOOLS" and press enter.
7. Click on the "I UNDERSTAND" button in the green bar at the bottom.
8. **\*IF IN DARK MODE\*** Click on the black/white moon in the bottom right corner.
9. Select "JOIN EXAM SESSION".
10. On the top line type the callsign "KJ4PJE".

### **START EXAM**

**\* DO NOT READ \* Have them position the bottom edge of the browser below, "Exam history" and above, "No exams have been taken". This position will ensure they get the schematics with the questions.**

1. After you verify your information is correct please click "START \_\_\_\_ EXAM"
2. To select your answers for the questions, simply press the "A", "B", "C", or "D" keys on the keyboard. This will not only mark your answer, it will also automatically advance to the next question and light it up. The questions will be bottom justified because some questions have schematics above them.
3. In the top right corner, you will see the number of questions remaining. Please move your mouse pointer up to that spot now.

**Verify they put the mouse pointer on top of the word remaining.**

4. You will not use your mouse or trackpad anymore for the exam.

### **\*READ ONLY IF USING A CALCULATOR\***

5. If you need to use your calculator, you may use the mouse, but then you will need to click on the word remaining to refocus to the exam page and begin using the letters again.
6. When you have answered all of the questions, that will change to a gold "GRADE EXAM" button. After you finish, press the gold GRADE EXAM button without any further prompting from us, and that will give us your score.
7. We will now turn off all of our video and audio so that we don't distract you. However, you must keep both of your devices active throughout the exam.
8. GOOD LUCK! You may begin!

### **FINISH EXAM**

1. Please click the "GRADE EXAM" button and we will get your score.
2. Click on the "FINISH AND SIGN FORMS" button, that is the gold button.
3. Click on "FINISH AND SIGN"
4. Now scroll to the bottom of the page and type your full legal name on the line below the red sentence where says "FULL NAME OF SIGNER".
5. Now scribble your signature into the "SIGN HERE" box.
6. Once you have finished with your signature, click on "SIGN DOCUMENTS", the green button below the box.
7. Click on "FINISH SESSION".
8. Click on "LOG OUT"

9. We will now stop recording and sharing your screen.

**POST EXAM INFORMATION**

1. We will be emailing you a CSCE. On that CSCE there are instructions on how you can go online and get your callsign. (or upgrade) It will be available online by the end of next week.
2. We encourage you to join the ARRL and get involved in your local radio club when you can.
3. Thank you for taking an exam with us. We would welcome you or your friends to a future exam. We look forward to hearing you on the air soon.
4. You are now free to leave the meeting. You can click the red "LEAVE" button in the bottom right corner of your screen to leave the session.
5. **73!**

### **14.3.2. Break out Room Pre-Read Script**

#### **Break out Room Pre-Read Script**

- This is a timed exam, so you will need to complete the test without any interruptions.
- You agree to keep attention on your computer screen at all times. Do not let your eyes wander to other parts of the room and do not leave your seat during the exam.
- You are not allowed to read any questions or answers out loud and you cannot talk to yourself. Mouthing the words, even if no sound is coming out, will void the exam.
- You must remove any drinks, snacks, papers, or anything else that might distract you including vapes and tobacco products.
- Make sure you remove any earpieces, headphones, hats, and show us that you are not wearing a watch on either wrist.  
**\*PAUSE AND VERIFY NO WATCHES ON EITHER WRIST\***
- You cannot have within your testing area view any additional monitors, speakers, phones, radios, electronic devices, smart speakers, documents, books, external keyboards, external speakers, external mouse, paper, or other smart devices.
- The exam will not work on a Chromebook, pixel book, iPads, notepads, tablets, or phones.
- You must be using a current OS system and either Safari, Firefox, Chrome, New Edge, or Brave.
- You cannot have any visitors or pets in the room, so please close and lock all doors.



- Since you cannot use scrap paper or manual calculators, you can use an on-screen calculator app. If you would like to use a calculator app please raise your hand for me now.

**(If there are multiple applicants, ask them to raise their hands)**

- Please move the calculator app all the way to the left side of your screen. Put your calculator in standard/basic mode and make it as small as possible.

### **Is anyone using a Mac computer?**

Look across your task bar for any dots under the applications. The only apps that may have a dot under them are the finder, Calculator, and Zoom apps. You MUST use force quit to close any extra apps. Look at the top left corner of your screen for the apple, then the fifth item down is force quit. Give me a thumbs up when you have completed this task.

**\*PAUSE AND VERIFY THEY FOUND IT\***

Hold your command key and click all items other than finder, calculator, and zoom. Then click force quit. Give me a thumbs up when you have completed this task.

**\*PAUSE AND VERIFY THEY FOUND IT\***

Please create a new folder on your desktop and move all of the icons into that folder. Give me a thumbs up when you have completed this task.

**\*PAUSE AND VERIFY THEY FOUND IT\***

In the top on your menu bar you will see a left and right switch which is called the “Control Center”, please click on it and turn on Do Not Disturb for one hour. Give me a thumbs up when you have completed this task.

**\*PAUSE AND VERIFY THEY FOUND IT\***

### **Is anyone using a PC?**

Look across your task bar for any bars or lines under the applications. The only apps that may have a line under them are the Calculator and Zoom apps. You will also need to go to the bottom right-hand corner of the screen and look to the right of the time and date. You are looking for a text balloon, it may or may not have a number on it, and right click on it. Then click focus assist followed by clicking priority only. Give me a thumbs up when you have completed this task.

**\*PAUSE AND VERIFY THEY FOUND IT\***

Right click on the task bar to open Task Manager. (If this fails click CONTROL-SHIFT-ESCAPE all at once) Make sure all applications are closed except the ones we are using. Give me a thumbs up when you have completed this task.

**\*PAUSE AND VERIFY THEY FOUND IT\***

Right click in a blank area on your desktop, then click, “View”. Uncheck, “show icons”. Give me a thumbs up when you have completed this task.

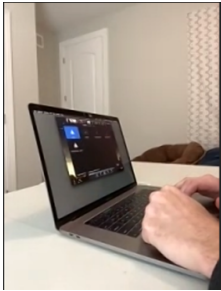
**\*PAUSE AND VERIFY THEY FOUND IT\***

- You should only have on your screen the calculator app and the zoom app. All browsers, emails, notifications, and notes must not only be closed, but they have to be shut down and quit completely.

- Turn on Do Not Disturb on your phone. **\*PAUSE AND VERIFY THEY FOUND IT\***
- Show us your that you have your driver's license available. **\*PAUSE AND VERIFY\***  
Keep that handy to show to the exam team when you go into your room for your exam.
- Please understand that you will only use the keys on the keyboard to take the exam. You will only be clicking the keys A, B, C, or D to select answers. You can NOT move your mouse, trackpad, or cursor during the exam.
- We will now put you back in the waiting room while we prepare your exam and your room for the test. Please have your ID ready to show to the examiners in your room. They will also require that you have a place to set your phone so that it views your computers monitor and keyboard. Take this time to remove any items or cover them with blankets or towels. You should also read over the rules again at [parcradio.org](http://parcradio.org). See you back in just a few minutes.

## 14.4. Images

The view we want:



We are concerned about seeing the monitor and keyboard along with both of their hands. We also want the view to be back toward the egress door with either the computer camera or the second device camera as shown above.

The breakout room button:



You will need to click on this button to select a breakout room to join. This may be automatic the first time. If you leave the breakout room at anytime you will need to click here to find the options to re-join the breakout rooms.

Approved Wallpaper:



Customized Thumbnail:



After you are a regular team member, we will create you a customized thumbnail. The thumbnail will have your callsign that will be shown every time you shut off your video. This is added to Zoom in your profile as your profile image.

## **14.5. Prohibited Background Applications and Programs**

12VPN  
Adobe Connect  
AetherPal  
AIM  
AirVPN  
Alfaview  
Ammyy  
Anonymizer  
AnyDesk  
AnyMeeting  
AnywhereTS  
Apple Remote Desktop  
Apple Remote Software  
Apple Screen Sharing  
AppliDis  
Asana  
Astrill  
AT&T Connect  
Banana-VPN  
BeAnywhere  
BigBlueButton  
BlackBerry Messenger  
Blacklogic  
Bluejeans  
BolehVPN  
BT Guard  
Buffered VPN  
CactusVPN  
Cendio ThinkLinc  
Chrome Remote Desktop  
Cisco WebEx  
Citrix XenApp/Presentation Server/MetaFrame/WinFrame  
Conference XP  
ConnectWise  
ConnectWise Control  
CryptoStorm  
CyberGhost  
DameWare Remote Everywhere  
Discord  
eBuddy XMS  
Element  
Ericom Connect

ExpressVPN  
Facebook Messenger  
Facebook Messenger Rooms  
FoxyVPN  
Free2SurfVPN  
Fuze Meeting  
Gadu-Gadu  
Genesys Meeting Center  
Ghostpath  
Glance  
GO-Global  
Google Hangouts  
Google Meet  
GoToAssist  
GoToMeeting  
GoToMyPC  
GoTrusted  
Goverlan Systems Management (Goverlan Reach Remote Control)  
GoVPNGo  
Goverlan  
GTS-VPN  
HappyVPN  
HCL Sametime  
Hide.me  
HidelPVPN  
HideMyAss  
HighSpeedVPN  
Hike Messenger  
Hotspotshield  
HP Remote Graphics Software (RGS) / ZCentral Remote Boost  
IBM Director Remote Control  
IBM Sametime  
ICQ  
iMeet  
iMessage  
IMVU  
I'm InTouch  
InterCall Unified Meeting (IUM)  
Internetz.me  
IPVanish  
IRC (protocol)  
IronSocket  
ISL Light Remote Desktop  
Ivacy VPN

Jami  
Jitsi Meet  
Keypard  
Kik Messenger  
KRDC  
LeafyVPN  
Line  
Lifesize  
Livestorm  
LogMeIn  
ManageEngine Remote Access Plus  
MicroVPN  
Microsoft Live Meeting  
Microsoft Remote Desktop  
Microsoft Teams  
Mikogo  
Mullvad  
MXit  
Netop Remote Control  
NetSupport Manager  
Netviewer  
NordVPN  
Norton WiFi Privacy  
NX technology (NoMachine)  
omNovia Web Conference  
OpenMeetings  
Open VPN  
Oracle Secure Global Desktop Software/Sun VDI  
Overplay  
Paltalk  
Parsec  
Perimeter 81  
PowWow365  
PrivateInternetAccess  
PrivateWiFi  
Proxpn  
Proxy.sh  
Proxy Networks  
PureVPN  
QVD  
Radmin  
rdesktop  
RealVNC Connect  
Remmina

Remote Desktop Manager  
Remote Utilities  
RemotePC  
RTC  
SaferVPN  
ScreenConnect  
Sh3lls  
Shellfire  
Signal  
SimpleVPN  
Skype  
Skype for Business  
Slack  
SlickVPN  
SmallVPN  
Snapchat  
SolarWinds Wake-on-LAN Tool  
Speedify  
Splashtop  
SSH with X forwarding  
StarLeaf  
Steganos  
StrongVPN  
Suissl  
Sun Ray/SRSS  
SunVPN  
Surfshark  
SwissVPN  
SwitchVPN  
Symantec pcAnywhere  
SysAid  
TeamViewer  
Techinline  
Telegram  
Tencent QQ  
Teradici  
Thinc  
Timbuktu  
TigerVNC  
TightVNC  
TorGuard  
TorrentPrivacy  
TrueConf  
TunnelBear



TurboVNC  
TUVPN  
UltraVNC  
UsaIP  
UTunnel VPN  
VenueGen  
VersaVPN  
Veyon  
Viber  
VideoMost  
Vinagre  
VNC Server  
VPN.ac  
VPN4all  
VPNaccounts  
VPNace  
VPNGeeks  
VPNintouch  
VPNPrivacy  
VPNReactor  
VPNSecure  
VPNTunnel  
VyprVPN  
WaselPro  
Webex  
WeChat  
WhatsApp  
Windows Live Messenger  
WizIQ  
WorldVPN  
X11vnc  
X2Go  
x2x  
Xfire  
XMPP (Protocol used by multiple clients)  
Xpra  
Yahoo! Messenger  
Yuuguu  
Zoho  
Zoho Assist