

# WRTC 2022

## Competition Rules

1. Contest Period The WRTC 2022 competition will be held concurrent with the IARU 2023 HF Championship. Start: Saturday July 8th, 2023 12:00 UTC (14:00 local) End: Sunday July 9th, 2023 11:59 UTC

2. Frequencies / Bands Only the 3.5, 7, 14, 21, and 28 MHz bands may be used. All participants must comply with the frequency regulations of the Italian "Ministero delle Imprese e del Made in Italy". Contestants must not operate outside of the allocated ham-radio bands and should follow the band plans recommended for IARU region 1(<http://www.iaru-r1.org/index.php/spectrum-and-band-plans/hf>) .

3. Modes of operation CW and SSB.

4. Language Only English language and common international abbreviations may be used when operating either SSB or CW.

5. Contest Exchange

5.1 WRTC stations must send signal reports plus ITU zone (Italy is ITU Zone 28). A complete exchange must be sent and logged for each valid QSO.

5.2 Apart from 5nn no other abbreviations are allowed when sending the exchange either on SSB or CW. Operators must say 5-9 28 on SSB resp. 5nn 28 or 599 28 on CW. Further cut numbers such as enn28 are not allowed. Operators may increase the speed of the exchange up to a maximum of 50 WPM. Voice recorders are allowed to send the exchange on SSB.

6. Valid QSOs : Each callsign may be worked once on CW and once on SSB per band. Cross-band or cross-mode QSOs are not allowed.

7. QSO Points : Each valid two-way CW or SSB QSO is worth the following QSO points:

CW QSO Points Within Europe 2 Outside Europe 5

SSB QSO Points Within Europe 3 Outside Europe 6

8. Multipliers

8.1 The total number of DXCC countries plus IARU member society HQ stations on each band will count as multipliers, once per band regardless of the mode. IARU officials represent a maximum of four multipliers per band (AC, R1, R2 and R3).

8.2 IARU member society HQ stations and officials do not count for DXCC country multipliers.

9. Score : The final score will be:  $\text{Score} = (\text{Total number of multipliers}) \times (\text{the sum of QSO points})$ . After adjudication the Judging Committee will calculate the final score for all entries based on Cabrillo logs submitted.

10. Champions : The WRTC 2022 Champion will be the team with the highest score.

11. Special Awards :

- The WRTC 2022 SSB Leader will be the team with the highest QSO total on SSB.
- The WRTC 2022 CW Leader will be the team with the highest QSO total on CW.
- The WRTC 2022 Multiplier Leader will be the team with the highest total number of multipliers.
- The WRTC 2022 Accuracy Leader will be the team with the lowest percentage of callsign/exchange errors.

As WRTC is a mixed mode contest, to apply for Single mode Special Awards a minimum of 35% of the total number of QSOs must be made in another mode.

# WRTC 2022 Station Hosting

All sites are hosted from local rural farmhouse, two double room with bathroom and air conditioning are reserved from the OC for 2 nights. One Bedroom is for the competitor and shack ( some sites have a different room to host the shack ), the second one is for referee and Site Manager in a twin bed room. The check in will be Friday 7 July, check out the 9 July about 15.00 local time ( 13.00z ). Despite previous WRTC's the competitors can spend all the Friday night in the site, familiarizing with low bands. If some Team wan't to back to the HQ, they need to managing transports with the Site Manager.

Follow meals are included :

- Friday Dinner ( Spirits not included )
- Saturday Breakfast
- Saturday Light Lunch ( Spirits not included )
- Saturday Light Dinner ( Spirits not included )
- Sunday BreakFast
- Fruit & Water

## Station Description

This document describes the equipment that will be provided to teams for WRTC2022. All competitors will be located in the same geographical region with similar topography. Competitor locations will be separated by a minimum of 2,000 meters.

WRTC2022 will be an Antenna Field Day style competition. Equipment that will be installed by the organizers at each site:

- 11m mast tower with an Yaesu antenna rotator and control unit
- LZ Antenna 20/15/10 m with one feed line (50 meters of M&P Ultraflex 7) and PL-259 male connector.
- MomoBeam 40 m Inverted-V dipole with feed line (50 meters of M&P Ultraflex 7) and PL-259 male connector
- MomoBeam 80 m Inverted-V dipole with feed line (50 meters of M&P Ultraflex 7) and PL-259 male connector (dipole ends can be changed manually to get best VSWR on CW or SSB segment)
- WRTC2022 Two-channel Power Monitor: The OUTPUT power monitor acts on forward power only, which may be greater than the actual transmitted power when the SWR > 1:1. In order to transmit 100 Watts to an antenna off the resonant frequency, an external tuner may be used to bring the SWR down and avoid premature triggering of the power monitor
- 2 x 1 meter coax jumpers, PL259 on each end for connecting Power Monitor
- 5 Port Ethernet switch incl. connection cables
- 2 x 6-outlet 230 VAC power outlet strips (see also <https://en.wikipedia.org/wiki/Schuko>) \*
- 2 electric lamps ( were needed)
- 2 electric fans (were needed )
- 1 larger table( supplied from host ) (2.m x 0.75m each)
- 3 chairs

# Radio Station SETUP

1.1 Each participating WRTC team must bring everything needed for their station except items listed in Station Description.

1.2 Each WRTC 2022 station will have two radios – Radio A and Radio B.

1.2.1 Radio A and Radio B can each use only one antenna connector. This means that every transmission and reception must go through a single antenna connector of that Radio. No external receive antennas are allowed. External band-pass filters are allowed in the receive line if desired.

1.2.2 Use of any sub receiver in radios that are so equipped, is not allowed. This includes diversity receiving. Radios are not allowed to receive on two frequencies simultaneously. For a two channel (or multi-channel) radio (which has sub-receiver or parallel reception capabilities), which allows reception of signals on different frequencies simultaneously, the sub-receiver (or that parallel reception) must not be used. If the sub-receiver is technically required to operate the bandscope/waterfall, then technical means (e.g. mono headphone adapter) need to assure that no audio of the subreceiver can be utilized.

1.2.3 Operators are allowed to share audio between Radio A and Radio B. Each operator may listen to the other operator's radio and vice versa.

1.2.4 Both Radio A and Radio B are allowed to transmit. The contest is a full Two-Operator TwoTransmitter type operation. The only limitation is that each radio must transmit on a different band regardless of mode (e.g., if Radio A is on 15M SSB, Radio B is not allowed on 15M SSB or 15M CW during the same time).

1.2.5 Spectrum scopes (pan adapters) are allowed provided that they are used solely for spectrum visualization. The spectrum scope may be built-in to the radio or be a separate device. It may be connected to the radio or PC-A/B with the following limitations:

1.2.5.1 The only output from the spectrum scope can be video, i.e. it can show current or past signal strength (spectrum, peak hold or waterfall). Other demodulation, analysis or decoding, e.g. for the purpose of content analysis, CW-decode, station identification, Skimmer, etc., is not allowed.

1.2.5.2 The spectrum curve may be displayed in any suitable device, including the PC-A/B monitor screen.

1.2.5.3 Additional computers or an attached control console may be used for SDR signal processing.

1.2.5.4 The spectrum scope can be used to control frequency (e.g., tune Radio A/B).

1.2.5.5 If a remote control console or additional computer is used, then signal demodulation may happen in one and only one device (either the main radio or the control console). The control console must be within the provided site and only be controlled by one – and only one – of the operators.

1.3 All radios must be commercially manufactured transceivers, meeting all manufacturer specifications.

1.4 Each team is allowed to have two backup radios. The backup radios may only be used in case of malfunction of the main stations' radios and with approval of the referee.

1.5 Radio A and Radio B are each limited to 100 watts (KEY DOWN in CW, single tone in SSB) maximum power output. The power will be measured by a peak power monitor provided by the WRTC 2022 Organizing Committee. The monitor has two detectors which must be connected directly to Radio A's and Radio B's respective antenna connectors. The power monitor acts on forward power only. Any devices connected after the detectors must not amplify the transmitted signal. All transmit- and received signals of one radio must pass the power detector of that radio. No bypassing of the detector is allowed.

1.6 Band-pass filters are allowed for both Radio A and Radio B. External antenna tuners are allowed for all antennas. These devices must be connected after the power detector. Any power losses from these devices may not be compensated for in any way.

1.7 The audio must be isolated so the referee may listen to either channel or both at the same time. The team may provide headphones for the referee or the referee may bring his or her own. In either case, it is the team's responsibility that the referee can monitor both radios continuously. If the referee uses his or her own headphones, it must not interfere with the team's audio in any way. The audio output should be terminated in a 3.5mm headphone female jack for the referee to plug into. If desired, the referee may bring an audio switch box to choose Left/Right or Both audio channels, and/or an AUDIO AMPLIFIER.

1.8 The teams must provide an audio output for both radios for use by the referee. This may be in parallel with the recording device described in rule.

1.9. The teams must provide the equipment for recording the WRTC contest operation, including both the received and transmitted audio of Radio A and Radio B. With this equipment the teams must generate the audio recording described in section 15. The recording must be uninterrupted and comprehensive for the entire period of operation. A separate PC or a RECORDING DEVICE is allowed for this purpose, but may not be networked to PC-A or PC-B in any way. Operators are not allowed to review the recorded audio except for troubleshooting purposes while under the referee's supervision.

1.10 Teams may adjust the length of the 80M antenna to move its resonance from the low end of the band to the SSB portion or back. This may be done by shorting or opening a connection at the ends of the 80m-dipole. This action can be done also during the event. The center, the length of the various sections and ends of the antenna must not be moved. This adjustment must be made while standing on the ground. No climbing of the antenna structure or other objects is permitted. In the case of a failure of the wire antenna(s), only the WRTC support staff is allowed to repair it. It is not allowed to move the antenna ends without explicit permission from the WRTC 2022 Organizing Committee.

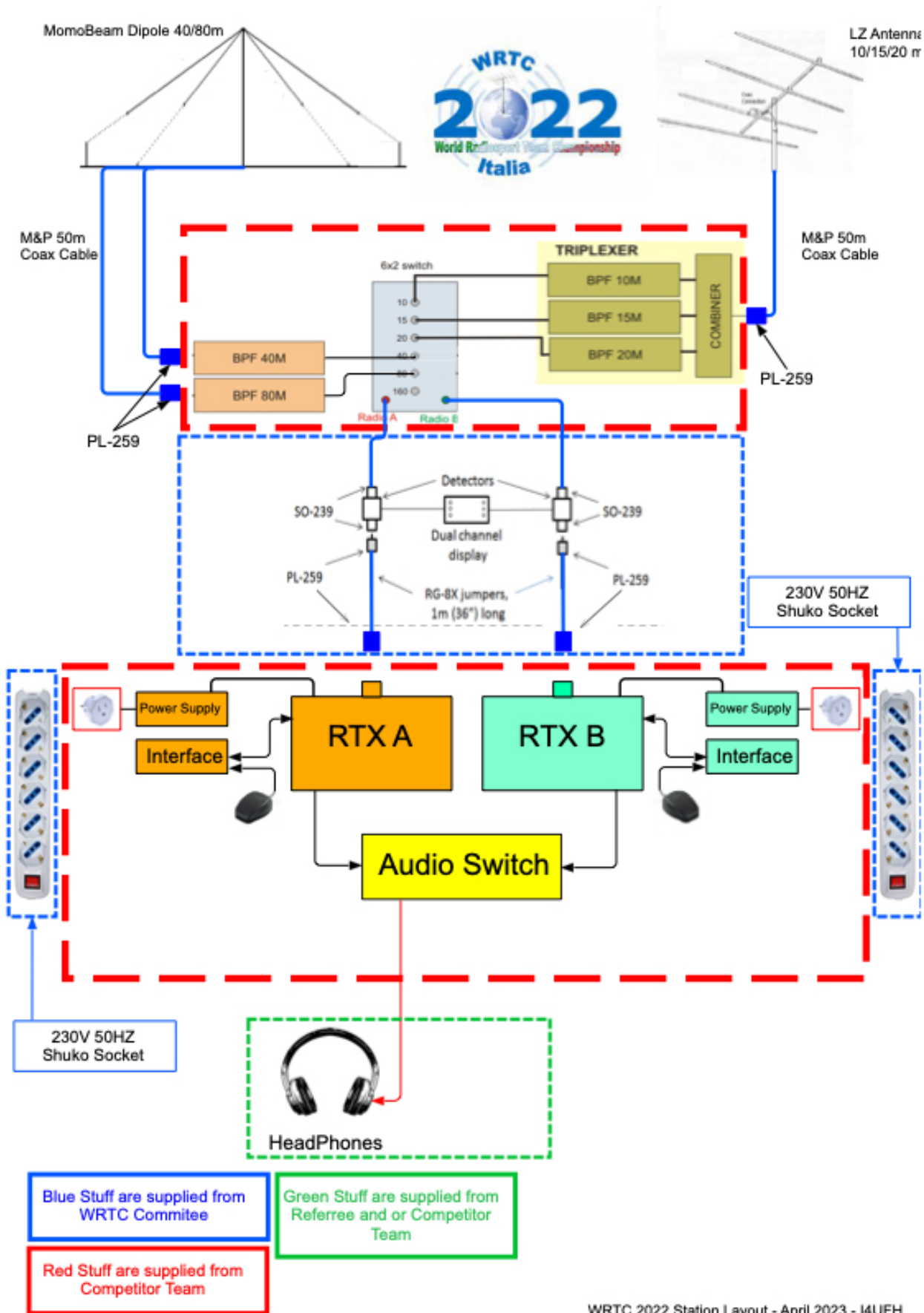
1.11 Participants are not allowed to change or cut antenna coaxial cables provided by the organizer. All such cable lengths must remain unchanged. Any filters or other devices allowed as previously described must be connected after the entire length of cable provided.

1.12 Before the competition the Teams are allowed to use third party technical support to organize and install the station as well as to install and test software or other permitted devices and peripherals. The support team must leave the site area by 11:30 UTC on Saturday, July 8th, 2023 at the latest.

1.13 During the competition the Referee may permit repair of any equipment or antennas reported damaged during the operation. This can be done by the operators or by the WRTC support staff only. No third party is allowed in the operating area at any time during the competition.

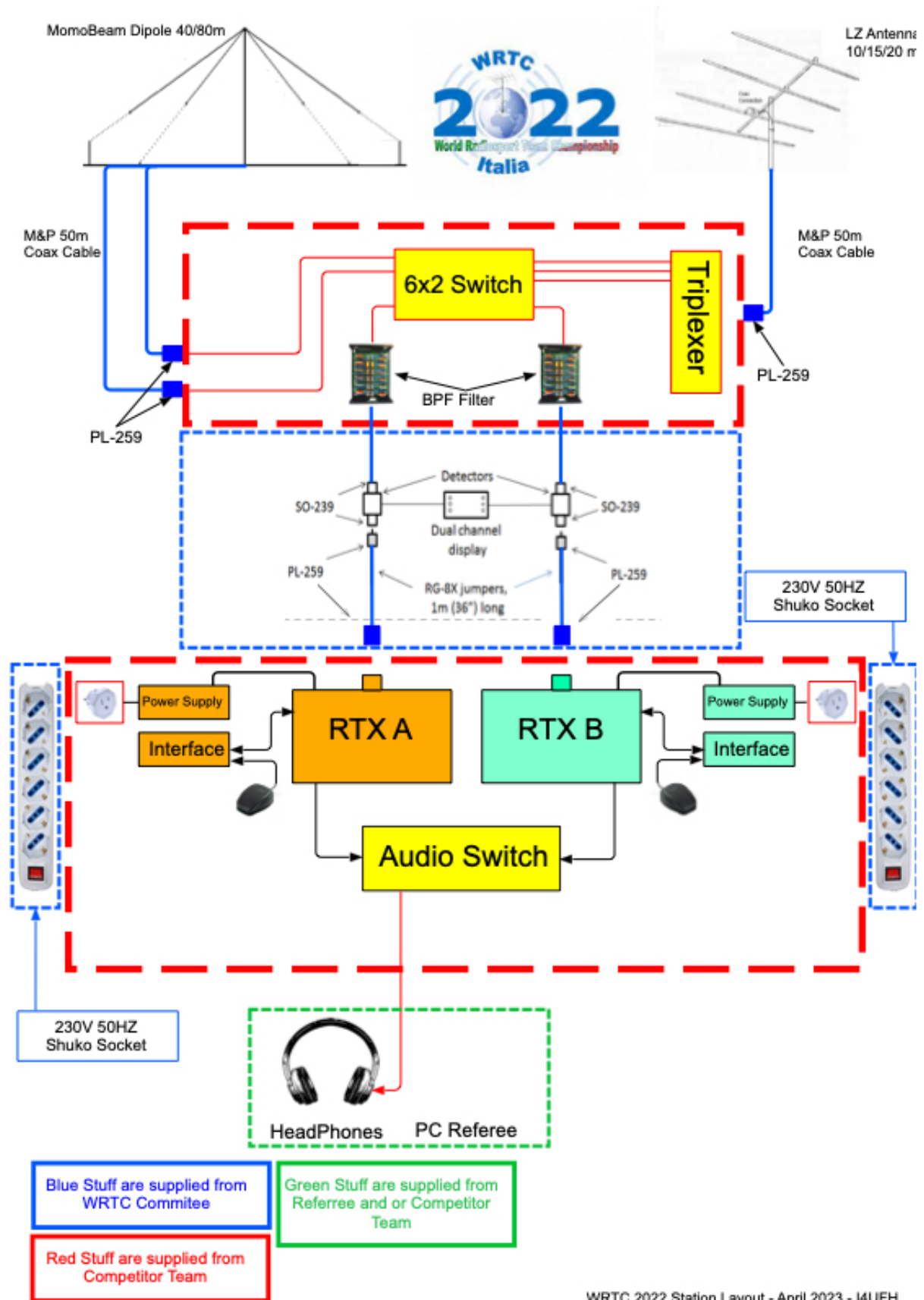
1.14 All equipment used by any team must be located inside of the Site (except antennas and cables). Participants must stay in the Site and/or designated control area from Saturday, July 8,2023 at 11:45 UTC, until Sunday, July 9th, 2023, 12:30 UTC.

Each Competitors Team need to supply the detailed block diagram, to supply to the referee that will take charge to verify that the proper wiring has been made. See the follow basic Example as starting point.



WRTC 2022 Station Layout - April 2023 - I4UFH

## Basic Example #1



WRTC 2022 Station Layout - April 2023 - 14UFH

## Basic Example #2

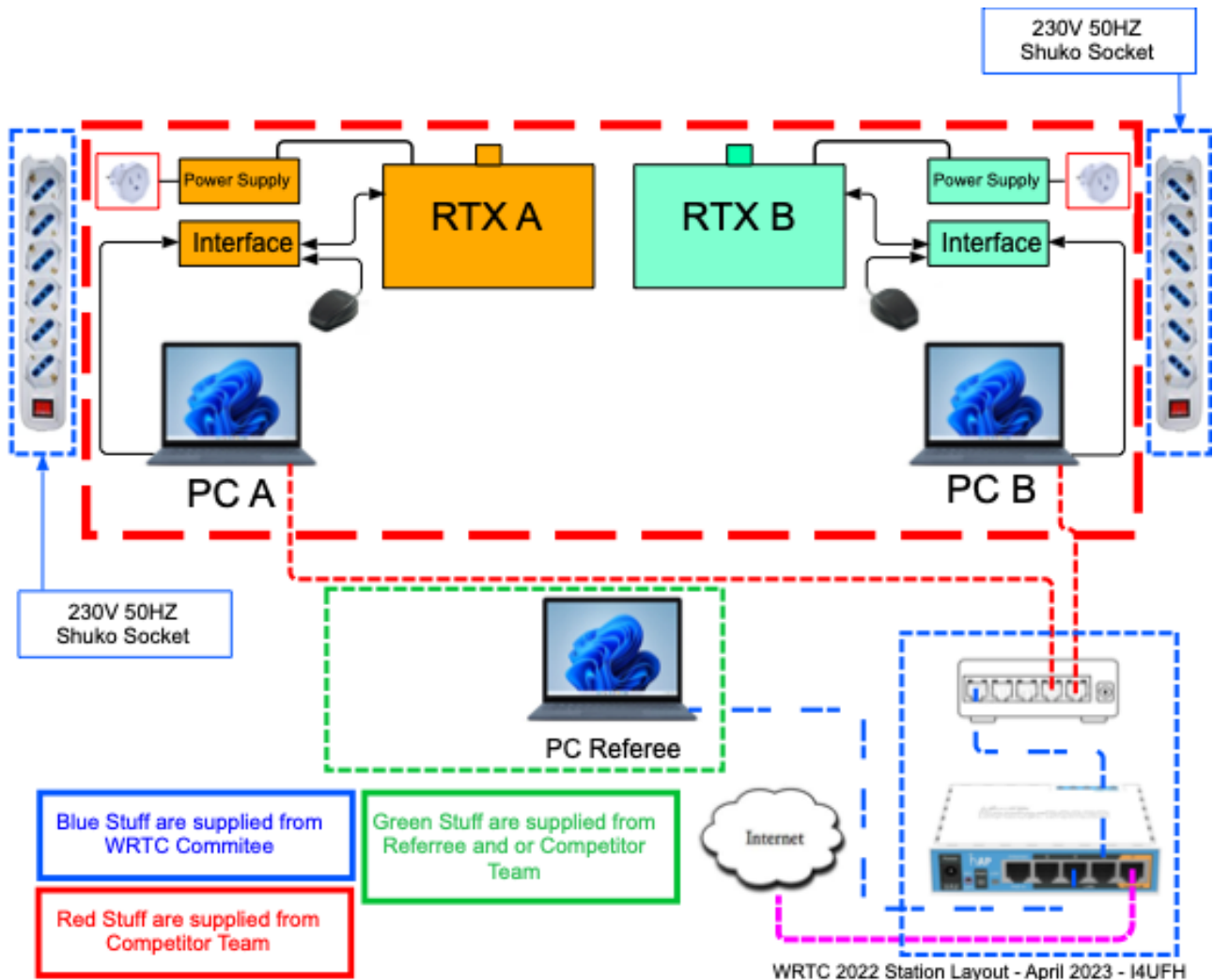
# Computer Station SETUP

1.1 Three networked PCs are allowed (PC-A at Radio A, PC-B at Radio B PC-C Referee.). The PCs should be named PCA and PC-B (or similar) within the team's logging software before the contest begins. No wireless connections are allowed from the PCs except for wireless keyboards resp. mice. No Wi-Fi or Bluetooth network connections are allowed. Network connections between logging computers must utilize the Ethernet switch provided by the WRTC 2022 Organizing Committee or a larger switch supplied from the Competitors. Each team will provide three straight Ethernet cables to connect PC-A and PC-B an PC-C to the Ethernet switch.

1.2 The computers of the competitors cannot use any other software other than logging software and spectrum curve software.

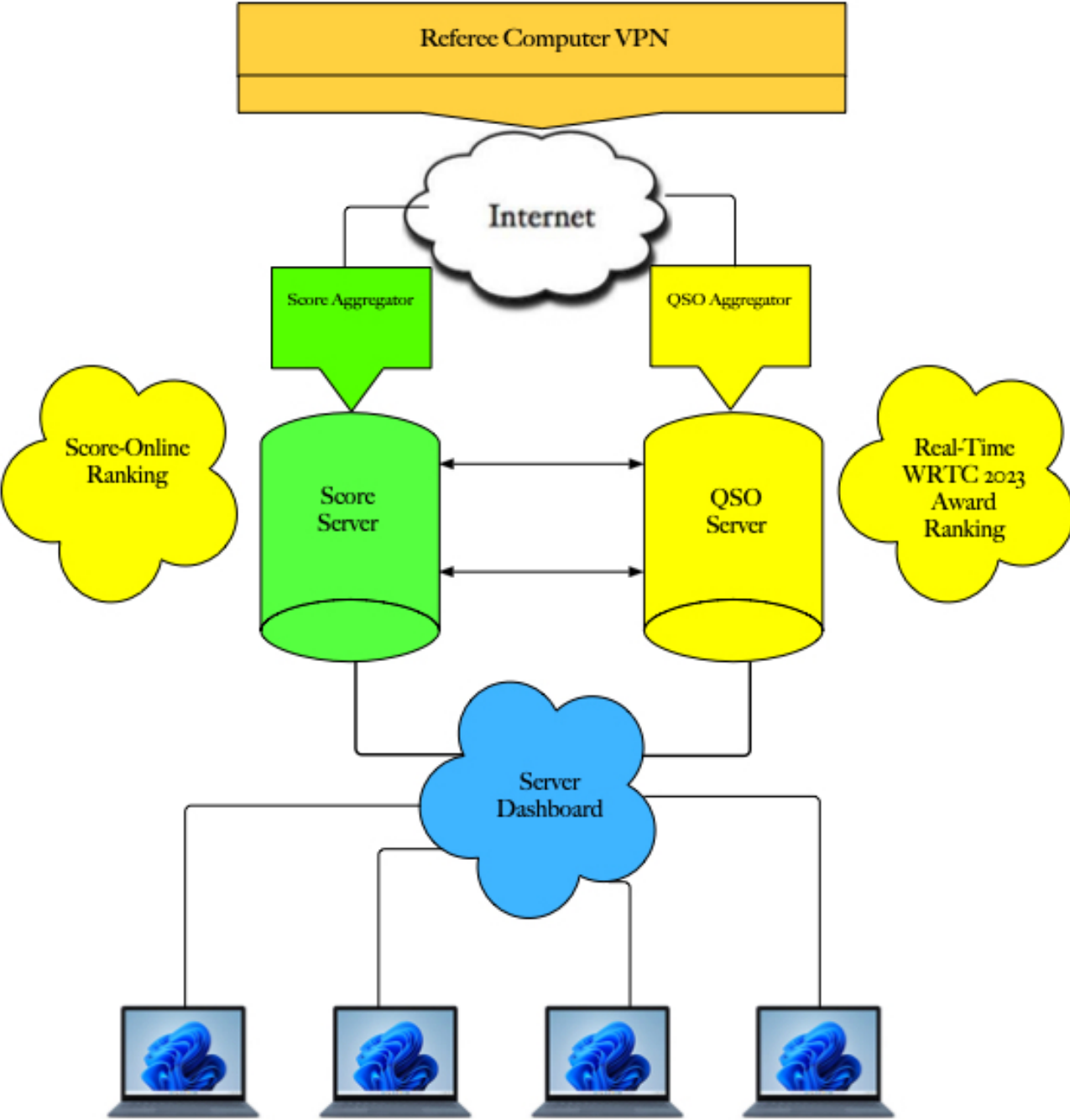
1.3 The referee computer cannot use any other software other than logging software, in read mode only, were available, and the UDP Broadcast Collector ( available for Windows and OSX ). The use from the referee of this computer must not interfere with the Log, no QSO editing is allowed. We expect correct behavior based moral integrity of each referee.

The referee computer is the gateway between the Competitors Network, the Score online and QSO Aggregator Server.



(Please Read Bottom Addendum)

# HQ Server Block Diagram



HQ Judge Committee PC



# Special Rules and Disqualification

1.1 WRTC 2022 stations must be QRT for at least 15 minutes prior to the contest start (by 11:45 UTC). The receiver volume of both radios must be turned fully off and no monitoring or transmitting is allowed within this 15-minute timeframe. The radios may be left powered on.

1.2 The operators are not allowed to intentionally identify themselves (i.e., revealing their own callsigns) before or during the contest or reveal their team identity in any way. Any attempt to do this such as by radio, telephone, SMS, internet, email, etc., may result in immediate disqualification. Requesting QSOs (e.g., setting schedules with special identification procedures in any way) before the contest period is strictly forbidden.

1.3 Operators may request QSOs with any station on another band/mode. All requests must be made during the contest period with no other attempt to reveal the team's identity. All requests can only be made on HF CW or SSB, and by no other means.

1.4 Use of DX spotting (e.g., Packet, Web, etc.), skimmer or any other spotting and supplementary information network is not allowed. Operators are not allowed to receive any assistance to learn the callsign or exchange of any station other than by tuning the radio and listening by human ears.

1.5 The use of any callsign database or the 'Super Check Partial' tool is not allowed. If the logging software incorporates this kind of feature, it must be disabled. The logging computer(s) may display a 'Check Partial' list based only upon the callsigns already worked during the contest.

1.6 The WRTC teams should work all callers without regard to nationality or different viewpoints.

1.7 Mobile Phone are not allowed in the shack. All the Mobile devices need to be collected at 1130z from the Site Manager, who will take care until the end of the contest. Using any kind of mobile device may result in immediate disqualification.

1.8 The WRTC Contest is the equivalent of the Ham Radio Olympic Games. To maintain the spirit and credibility that his name implies, it should take a high level stand about how the teams should behave on the air. The Judging Committee may disqualify a team that commits any of (but not limited to) the following actions:

- Violation of the rules of the contest.
- Unsportsmanlike conduct.
- Taking credit for excessive unverifiable QSOs or unverifiable multipliers.

1.9 WRTC stations should not encourage "cheerleading", i.e. QSOs in which supporters make QSOs with only a favored team or exclusively spot that team on the DX-cluster. Cheerleading should be actively discouraged by the competitors and abuses through the use of cheerleading may result in QSOs being removed from logs as deemed necessary to assure a fair competition. (see addendum below)

1.10 The decisions of the Judging Committee are final.

2. Callsign Allocation: The callsigns assigned to the competitors will be selected from special calls in a "to be determined" series. The process of assigning calls and stations will be a random draw on Friday, July 7th, 2023 before the contest. The competition callsigns will be given to the teams by their referee at the station 15 minutes before the contest at 11:45 UTC on Saturday, July 8th, 2023. Team members are not allowed to know the callsign before this time.

## 3. Logging

3.1 Computer logging is required.

3.2 Each WRTC 2022 team must submit its log file in Cabrillo format to their referee until 12:30 UTC on Sunday, July 9th, 2023. In addition the log needs to be provided in the source-format of the logging-software (e.g. wt4-Files for win-test).

3.3 All competitors are allowed to use any logging programs compliant with the follow basic rules:

- Generating a Cabrillo output according to Cabrillo-standard.
- Disabling the use of any callsign DATABASE, Master.DTA or the 'Super Check Partial' .
- Broadcast Score for real time scoring :

○ ( <https://contestonlinescore.com/blog/online-scoring-xml-specification/> )

- QSO UDP Broadcast for Real Time QSO Collection : ( [http://dxlog.net/docs/index.php/Additional\\_Information - UDP Broadcast section](http://dxlog.net/docs/index.php/Additional_Information_-_UDP_Broadcast_section) )

Broadcast Score and QSO Broadcast are in charge of the Referee Computer.

The team is solely responsible to ensure the software conforms to WRTC 2022 standards as defined in these rules.

The Cabrillo log needs to assign the transmitter id "t" according to Cabrillo-standard, i.e. by two different parameters "0" and "1" to identify the radio used for the QSO. For instance Win-Test needs to be configured in M/2 with Overlay WRTC. Other logging programs need to be configured similarly to indicate the radio. Details of the Cabrillo-format can be found on :

o ( <http://wwrof.org/cabrillo/cabrillo-qso-templates/> )

3.4 In any case, it is the sole responsibility of the competing teams to create Cabrillo-compliant code with the software used in the contest. The Committee does not assume any responsibility for the conversion of log data into Cabrillo format.

#### Recording

4. After the contest, each team must provide to the referee a continuous stereo audio recording of Radio A and Radio B on one of the following storage devices: • USB2 compatible device (USB flash memory, USB hard drive) • CD/DVD disk The recordings should be separated into two audio files, one for each radio. Recordings may be established in one of the following two formats: • Two (2) separate files, one for each radio. • One file with each radio on a separate channel.

4.1 The Judging Committee has the right to remove any claimed contacts not found in the recordings. Upon demand the teams must additionally provide the associated player, e.g. if non-standard audio formats are used.

**Disclaimer: In the event of force majeure or the occurrence of an event beyond control, the WRTC2022 Organizing Committee might implement changes, deletions or additions to the event and its rules. Additionally the WRTC 2022 Organizing Committee reserves the right to change the ruleset for technical, administrative or legislative reasons. These changes may be implemented upon short notice.**

# Operators allowed Activity

| <b>17.1 RADIO</b>  |  |
|--|--|
| <b>RADIO A</b>   | <b>RADIO B</b>   |
| <ol style="list-style-type: none"> <li>1. Allowed to transmit</li> <li>2. Main receiver reception</li> <li>3. Sub-receiver reception is not allowed</li> <li>4. VFO A and VFO B transmit</li> <li>5. A triplexer should be used on the triband antenna to provide 10/15/20 meter antenna inputs. See special triplexer section in the station description.</li> <li>6. Allowed to use band-decoder</li> <li>7. Allowed to use audio and RF filters</li> <li>8. Can share audio with Radio B</li> <li>9. Must share audio with Referee</li> <li>10. Can be replaced by backup Radio (in case of failure)</li> </ol> | <ol style="list-style-type: none"> <li>1. Allowed to transmit</li> <li>2. Main receiver reception</li> <li>3. Sub-receiver reception is not allowed</li> <li>4. VFO A and VFO B transmit</li> <li>5. A triplexer should be used on the triband antenna to provide 10/15/20 meter antenna inputs. See special triplexer section in the station description.</li> <li>6. Allowed to use band-decoder</li> <li>7. Allowed to use audio and RF filters</li> <li>8. Can share audio with Radio A</li> <li>9. Must share audio with Referee</li> <li>10. Can be replaced by backup Radio (in case of failure)</li> </ol> |

| <b>17.2 COMPUTER</b>  |  |
|---|--|
| <b>COMPUTER A</b>   | <b>COMPUTER B</b>  |
| <ol style="list-style-type: none"> <li>1. May be interconnected with Computer B</li> <li>2. Allowed to key Radio A only.</li> <li>3. Can exchange messages with Computer B</li> <li>4. Voice and CW keyers are allowed</li> <li>5. Super Check Partial is not allowed</li> <li>6. Log must be converted to Cabrillo format</li> </ol> | <ol style="list-style-type: none"> <li>1. May be interconnected with Computer A</li> <li>2. Allowed to key Radio B only</li> <li>3. Can exchange messages with Computer A</li> <li>4. Voice and CW keyers are allowed</li> <li>5. Super Check Partial is not allowed</li> <li>6. Log must be converted to Cabrillo format</li> </ol> |

### 17.3 OPERATOR

| OPERATOR A  | OPERATOR B  |
|---|---|
| <ol style="list-style-type: none"><li>1. Operator of Radio A</li><li>2. Operator A can change position (chair) with Operator B at any time</li><li>3. Allowed to populate the band-map</li><li>4. Can exchange messages with Operator B</li><li>5. Must share audio with the Referee throughout the contest</li></ol> | <ol style="list-style-type: none"><li>1. Operator of Radio B</li><li>2. Operator B can change position (chair) with Operator A at any time</li><li>3. Allowed to populate the band-map</li><li>4. Can exchange messages with Operator A</li><li>5. Must share audio with the Referee throughout the contest</li></ol> |

1. Conditions of entry By submitting an entry in the WRTC Contest the competing teams confirm that:
2. The rules of the contest have been read and understood and they are bound by them;
3. They operated within the limitations of all rules stipulated;
4. They agree to make the log and the audio recording, as well as photo and video material of its operation prepared by the organizer available to the general public at the sole discretion of the WRTC Organizing Committee;
5. All actions and decisions of the WRTC Judging Committee are official and final.

Frequency allocations in Italy for the amateur radio service are assigned by the "Ministero delle Imprese e del Made in Italy" and are listed on this website: [www.mise.gov.it](http://www.mise.gov.it). As Italian laws are only written in Italian language, an extract of the relevant frequency allocations is provided here: Frequency range 3,500 – 3,800 kHz 7,000 – 7,200 kHz 14,000 – 14,350 kHz 21,000 – 21,450 kHz 28,000 – 29,700 kHz II. IARU Region 1 band plan The IARU region 1 band plan is a recommendation for all radio amateurs how to use the bands, as revised at the Interim Meeting Vienna 2016, effective 01 June 2016. The latest version can be found on the website of the IARU: <http://www.iaru-r1.org/index.php/spectrum-and-band-plans/hf> III. Poor Signal Policy The transmit signal quality needs to follow standard engineering practices. The judging committee reserves all measures in case of excessive bandwidth in order to stop the interference.

# WRTC Addendum

## Unsportsmanlike cheerleading

WRTC has a strict code of conduct that all participants are expected to adhere to. This includes conducting oneself in a fair, sportsmanlike, and respectful manner towards other competitors, the contest organizers, and the rules of the event. Unsportsmanlike cheerleading, from the worldwide community following an intentionally identify by competitors, selection of predefined frequencies at defined time, transmitting false or misleading information, or engaging in any other behavior that violates the rules or spirit of the contest, is considered a serious breach of the code of conduct and can result in disqualification.

The cheerleading issues, has been more or less present at all the last WRTCs since early days. In the last events, everything was evolved, different approach to identify the operators was acted, different geographical areas, and less low band activity, due the difficult to overcome the Oceans with low power and small dipole antennas, has forcefully hidden, the cheerleading effects.

New challenge are now on the horizons, 5 band almost open over 24 Hours, European locations, a Continent with high density of different country, new communications media, RBN clusters, and smarter teach operators, are all great new challenges to look for a way to minimize cheerleading effects over the final ranking.

The WRTC 2022 Organizer Committee had taken seriously these subject in the last years, a long analyze of previous Logs available as Public Log has been taken. Crosschecking of WRTC Logs and All the more that 5000 Logs available on line, has detected, some anomalies, that obviously couldn't be found in the next 24 hours after the end of the WRTC contest, due lack of time, logs, and proper tools.

We had evaluated several solutions to minimize or reduce these effects, but all the actions applied after the contest ends, are ineffective, no one can proof any of sophisticate's methods applied to be recognized, after the event has happened, even enforcing the Referee to pay attention about that.

For that reason, the WRTC 2022 OC with the great contribution of our IT Team, has developed a experimental, and complex tools, to identify in real time if there are some anomalies in the logs, and notify to the on field referee to take care about that, during the event.

Basically, all the WRTC Stations will have a 3th PC networked with the Competitor PC that will allow the Referee to better follow the QSO flow, in read only mode, if available on the used software, and connected to a VPN that will broadcast all QSO to a QSO Aggregator redundant server and the Score to the Score on Line server.

The Judge Committee, that have some institutional activity during the event, as visiting the Teams site to look at the competition progress, will have one more duty to take in charge, to observe a dashboard of information that can visualize some anomalies in a visual graphic way if something is wrong. I.E.: high number of QSO's with the Countries of the two Operators, frequently QSY to predefined frequency, QSO Patterns between bands, or other useful indicators. These alert will allow the Judge Committee to have a real time tool that will help to identified anomalies, to notify at the on-field referee, and at the end, following, the WRTC 2022 rules, apply if needed penalties.

## **SSB Spots**

This network allows also to ensure that the SSB QSO are detected in the proper manner. After three QSO on the same SSB frequency a Spot is generated, to insure a fair and equal spotting of the Team Callsign in SSB mode. CW spots are not needed due a large RBN network available all over the world.

## **Real Time Award WRTC 2022**

This real time QSO aggregator, allow also to generate a provisional real time ranking of the WRTC 2022 Award, devoted to all the user that want to grab the 1st place in the several available awards ranking . I.E. the fastest 100 QSO with WRTC Station worked all bands, the fastest Single Band Worked All WRTC2022 station and so on.

The QSO aggregator Server technologies has been proofed and tested during the last WRTC 2022/2023 Award with up 600 QSO/min and over 2.5 Mil QSO We expect for this WRTC up to 400K QSO overall.

All this technology involved, will sure could have some glitch, and as experimental, the Organization Committee, will not use the received QSO as final QSO for a score and ranking calculation. The logs, that will be used for final scores and ranking, are always the Cabrillo LOG supplied to the referee at the end of Contest.

We expect to have minimal failure during the event, even if for any reason the VPN has a failure, that cannot fix remotely, there will not a Real Time analyzes, but the Contest can proceed without any issue, and or penalization.