

The Ten-Ten International News

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News items should be sent to the Editor. Technical articles and information on all 10 meter activities or news are welcome and solicited. All copy submitted must be typed, and sent on computer disk or E-mail. Suitable formats will be provided upon request.

Photographs are encouraged. Black and White or Color are acceptable. Include complete information on the back of each photo. Attach a label or other suitable paper to the back of the photo and write all information on the label, not the photo. If sending digital images, high resolution of a minimum 300 dpi must be used. Please do not send newspaper or digitally printed photos as they cannot be used.

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PLEASE MAIL ALL ARTICLES AND PHOTOS TO:

EDITOR Ten-Ten News

E-mail: editor@ten-ten.org

10-10 CHAPTER ACTIVITY REPORTS: Should be sent to the Chapter Coordinator
 ADDRESS CHANGES: All members should send address changes to the Data Manager

NOTE: 10-10 IS NOT RESPONSIBLE FOR POSTAL SERVICE DIFFICULTIES

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OFFICERS AND DIRECTORS

President

Dave Ruch, NF0J #19553 (2026)
 PO Box 1110, Elephant Butte, NM 87935
 (575) 495-9236 dave@nf0j.com

Past President

Mel Sojka, KD5DE #33513
 353 Atlantic Ave., Shreveport, LA 71150-2909
 (318) 286-2963 kd5de@ten-ten.org

Vice President/Secretary

Larry Berger, WA2SUH #00407 (2028)
 9 Nancy Blvd, Merrick, NY 01156-3119
 (516) 223-4611 wa2suh@aol.com

Treasurer

Keith Schlottman, KR7RK #63324
 6206 E. Pima St., Suite #2, Tucson, AZ 85712
 (520) 298-8488 keithschlottman@gmail.com

Directors

Stephen W Wagner, W7WHB #77836 (2028) - Daily Nets
 338 N Nevada Way, Gilbert, AZ 85298
 (480) 857-6518 w7whb@arrl.net

Martin Jordan, KB1MJ #67175 (2028) - QSO Parties
 146 Juniper Trace Parrish, FL 34219
 (941) 981 2687 KB1MJ@outlook.com

Mark Steele, KD2NOM #77569 (2028) - Publicity-
 1 Karen Court, Monroe Township, NJ 08831-4037
 (732) 213-0159 kd2nom@gmail.com

Marcus Lieberman, KM5EH #71103 (2026) - Awards
 2300 Hurley Dr. NW, Albuquerque, NM 87120-1013
 (505) 836-1724 buckml@lobo.net

George Davenport, KM4ODS #77504 (2026) - Publications
 201 Whitechapel Lane, Rockfish, NC 28376
 (910) 774-0444 km4ods@gmail.com

Chuck Dockery, N7UQ #72774 (2026) - Chapters
 112 S Rolling Meadows Dr. Wylie, TX 75098-5163
 (469) 829-5462 chuck@n7uq.com

General Counsel

Hugo Holland, KJ5SZ #77741
 10008 Bedlington Court, Shreveport, LA 71118
 No Phone dahugobrit@gmail.com

NET OFFICIALS

Chapter Coordinator

Chuck Dockery, N7UQ #72774
112 S Rolling Meadows Dr. Wylie, TX 75098-5163
(469) 829-5462 chuck@n7uq.com

Data Manager / Supplies

David Smith, K6RDK #65812
1349 Vernon Terrace, San Mateo CA 94402-3331
(650) 504-4962 membership@ten-ten.org

Editor 10-10 International News

Randy Mather, AJ7B #7675
9625 101st Ave NE
Arlington, WA 98223 editor@ten-ten.org

Historian

Phyllis Martin, K5PLH #77878
1855 Shady Lane Dr
Shreveport, LA 71118 Phillism06@gmail.com

Net Manager

Stephen W Wagner, W7WHB #77836
338 N Nevada Way, Gilbert, AZ 85298
(480) 857-6518 w7whb@arrl.net

QSO Party Manager/Certificate Manager

Dan Morris, KZ3T #41015
3162 Covington Way, Lenoir, NC 28645
(828) 728-5049 dbmorris315@gmail.com

IT Manager

Jeff Steinkamp, N7YG #65084
6765 E. Rosewood Cir., Tucson, AZ 85710
(520) 546-2290 n7yg@n7yg.com

Scholarship Manager

Larry Berger, WA2SUH #00407
9 Nancy Blvd., Merrick, NY 11566-3119
(516) 223-4611 wa2suh@aol.com

SK Manager/Social Media Manager

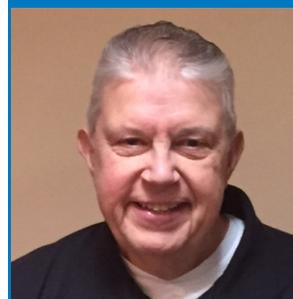
Mark Steele, KD2NOM #77596
1 Karen Court, Monroe Township, NJ 08831-4037
(732) 213-0159 kd2nom@gmail.com

Supplies Manager

Mel Sojka, KD5DE #33513
353 Atlantic Ave., Shreveport, LA 71150-2909
(318) 286-2963 kd5de@ten-ten.org

W6OI Station Trustee

Dave Ruch, NF0J #19553 (2026)
PO Box 1110, Elephant Butte, NM 87935
(575) 495-9236 dave@nf0j.com



From the Editor

Randy Mather, AJ7B
(#7675)

Happy New Year! I hope all is well with you and your year is starting out with many 10-meter contacts. I am definitely hearing more stations on the band and making more contacts now as we approach cycle 25 maximum.

First I want to thank Martin Jordan for helping the 10-10 International Net by volunteering to join the organization's Board of Directors. Another Board change is Larry Berger went from being a Director to being our Vice President. Many thanks to all the officers, directors and net officials who keep the net running and moving forward. Your efforts are appreciated.

My thanks go out to Jeff Steinkamp (N7YG, #65084), Mike Stutzer (KD0FDJ, #75393), and Ronnie Hull (W5SUM #2019) for providing articles to publish in this issue of the newsletter. Jeff provided a very extensive article on using the nanoVNA Network Analyzer. Part 1 is in this issue and part 2 will appear in a future issue. Mike recently operated our annual 10-meter Sprint in October and wanted to share with you his experience making contacts during that event. Ronnie supplied text and pictures of a party held by the Red River Valley Chapter where they honored Mel Sojka (KD5DE #33513) for his support of the chapter and the 10-10 International Net. Also thanks Ronnie for being our Vice President over the last four years.

On a personal note, we have had a few heavy wind storms in Washington. Although my beam hasn't been impacted, my 160 horizontal loop has had a couple of trees fall against it and bring down a couple legs of the loop. It actually pulled one corner of the loop with enough force that it broke the rope that was holding it up in a tree. I have to get a few hams from my club to come out and help remove the trees, reshoot the trees, and pull the corner back up. Just need some decent weather. A commodity that is hard to come by in January and February.

I have stood on this soap box many times, but I still ask for articles from you about any ham experience you would like to share with the rest of the membership. You help keep this organization alive and knowing more about what we experience in working 10 meters helps the membership. So keep those articles coming.

I wish you all the best in the new year and hope to make contact with you on 10 meters.

73

Randy - AJ7B #7675



From the President

David Ruch NF0J
#19553

Greetings from Elephant Butte in the high desert of southern New Mexico.

Winter is here! Is your amateur radio station ready? Winterizing your ham radio station involves preparing both your equipment and its environment to ensure it operates reliably during cold weather. Cold temperatures can cause metals (such as aluminum, copper, or steel) to contract. This slight contraction may alter the geometry of the antenna, potentially changing its resonance or impedance. While the effects are generally minimal, they could slightly impact the antenna's performance, especially if the antenna has tight tolerances for frequency or impedance.

Also watch for snow or ice accumulation that can add significant weight to the antenna, causing it to sag, bend, or even break, especially if the antenna is a large structure like a Yagi or a beam. Ice can also disrupt the fine-tuning of the antenna, affecting its radiation pattern or resonance. If the antenna system includes moving parts like rotators or telescoping elements, ice or snow could impede movement or freeze mechanical components, preventing proper operation.

Accumulation of ice and snow require more frequent inspections and maintenance of the antenna system during the winter months to prevent failures. Regularly removing ice buildup, checking connections for corrosion, and inspecting the antenna for physical stress are important maintenance tasks to ensure optimal performance.

Be very careful when working on your antenna system during winter. Ice can be very dangerous, so try not to fall. Cold temperatures can cause frostbite, so dress appropriately. If someone dares you to put your tongue on a frozen metal tower, do not do it. These recommendations come from someone who once lived up north. Take heed!

Having inspected everything, it is time to hunker down with a warm drink and fire up the radio.

As I write this, I just finished working the CQ Worldwide DX CW contest just finished. Ten meters was wall-to-wall with DX across the CW portion of the band. While I couldn't work the entire contest, I still managed 54 different DXCC entities on ten (only 35 on twenty). The band is open, so take advantage of it.

The always popular Winter Phone Ten-Ten QSO Party takes place on the first weekend in February. We'll be bringing our club callsign, W6OI, to the party. Look for W6OI between 28.305 and 28.495. For those collecting paper QSL cards, W6OI cards are available. And don't forget the daily (except Sundays) Ten-Ten net at 1800z on 28.380.

Since the early 1990s, Ten-Ten International has awarded college scholarships to amateurs around the world via the 10-10 Scholarship Foundation. I encourage you to consider donating to the foundation. Small donations are welcome, and I especially encourage those with lifetime memberships to get on board! Details about the 10-10 Scholarship Foundation and making donations are found in each issue of Ten-Ten International News. A history of the scholarship program by Larry Berger, WA2SUH, can be found in the October 2021 issue on page 10.

Best wishes for a healthy and safe 2025!

73
Dave NF0J #19553

NEW LIFE MEMBERS

11237	W7BID	Daniel L Parkin	ID
54090	KB5HXT	Michael A Delaney Sr	OK
63215	KD4MQY	Ronald R Black	NC
65878	WH6LU	Richard S Gardner	HI
69321	W5EPR	George E Elam Jr	TX
70452	K7DF	Thomas J Fagan	AZ
73519	NA2CE	Johnnie C Nance	NC
78344	N1HEX	Joseph A Silveira II	NH
78345	KQ4RHJ	Daniel A Letang	KY
78348	N5ZCW	Julius A Cline	LA
78354	KO4GQS	James M Locke	AL
78358	KA5PXE	Christopher P Walker	AL
78359	N6RAM	Ronald A Mahle	TX
78367	W4BZM	Michael R Behr	FL

10 Meter Beacons

As 10 meter operators one should be aware that propagation beacon frequencies are coordinated.

I would appreciate a message from anyone with thoughts of activating a beacon. wi5v.be@gmail.com

73 Dennis Stice WI5V #35806

IARU Region 2 HF Beacon Coordinator

<https://wi5v.net/author/wi5v>

10 METERS ON A BAD DAY

At one of the monthly meetings of the Boulder Amateur Radio Club, propagation maven Carl Luetzelschwab explained why 10-meter propagation is bad during the summer. But summer is gone. Oct. 10, 2024 provided an opportunity to test the band, by entering [the Ten-Ten International Net organization's](#) annual 24 hour "Sprint".

Oct.10 wasn't the best day to hold the Sprint. The [Space Weather Prediction Center](#) reported an S2 solar storm and massive G4 geomagnetic storm, associated with recent coronal mass ejections reaching the Earth. Unlike solar flares, CMEs are relatively massive things that only travel at around 1 million mph, plus or minus considerable amounts. So, the CMEs occurred a few days earlier (recall that our sun is 93 million miles away). In addition, the Thursday contest date kept some worker bees away, but I liked it because religious reasons preclude my participation before sundown on Saturdays.

When the band is open, my terrain advantage (300 vertical feet up a steep hill accessed by Middle Fork Road) and homebrew high-gain wire beam combine to provide up to 11 dBi gain to the East, with a low launch angle. This permits the QRP flea power to get out awfully well.

The contest started Wednesday at 6:00pm here, but by then the band had closed. By 9:00 am Thursday it was open. I worked hard for a couple hours until a passing CME slammed the door shut at 1647 UTC, as reported by the SWPC. I got back on around 1:00 pm to find it had reopened, and lucked on to the 10-10 club's daily net on 28.390 MHz. I was surprised to hear the very loud Mike V51MA serving as net control from Namibia. I contacted him and put him in my log. Nobody else on the net could hear me, so Mike must have a helluva station. As they say, his station "did all the work" for our QSO.

Other surprises awaited. A guy answered my CQ with a very garbled sound. After I told him, he tried again, but I still couldn't decipher his return call. Finally, he managed to make it barely discernible, whence he explained he was using a radio built in 1938!

For DX purposes, I am blessed with a low launch angle. But this wasn't advantageous in the largely domestic contest. Almost all my QSOs were to Hams on the East Coast. I had two closer, both in Ohio, as well as some in Pennsylvania. I missed all the folks in between here and there. Still, during the tough conditions I managed 74 contacts in around 5 hours of gainful operation. 16 of them had 10-10 memberships number handy, each of which earned 2 points. My 58 other contacts earned 1 point apiece. It'll be interesting to see if 90 points is enough to win the Zeroland SSB QRP class. It might if most of the good QRPers entered the CW or Digital class, as I suspect they did.

My trusty Ten-Ten Argonaut VI QRP rig earned its keep. By the end it was pretty

warm to the touch, despite the adorable 1 square inch muffin fan I taped over its roof vent to exhaust warm air inside it. Strong signal reports earned it some time off for good behavior.



The QRP rig (left) is used barefoot on 10 meters

Mike KD0FDJ, #75393



*Were you first licensed 25 years ago
and licensed today?*

**Then you should join the
Quarter Century
Wireless Association, Inc.**

To Join or Renew, Visit:
<http://www.qcwa.org/join-renew.php>

For more information, please contact:
om@qcwa.org



Chapter Coordinator

Chuck Dockery, N7UQ
(#72774)

GENERAL INFORMATION:

Information: I have access to make changes to the chapter website when you send changes or are asking for special announcements to chapters. As the chapter coordinator I only receive chapter reports from the individual chapters, I then place them in a digital folder after scanning, if necessary, then I copy those documents to the FTP server that Jeff N7YG has set up for that purpose. If club officials need any of that information you may contact myself or Jeff for access for copies of documents.

Chapter Reports: I now copy all reports and other correspondence received from chapters to the chapter folders on the FTP site. If anyone needs access or copies of files you can ask Jeff N7YG for assistance or ask me for a copy. Main point is I am no longer keeping hard copies of anything related to chapters. As chapter heads and coordinators, you should be utilizing the FTP site to store your information that can be accessed by an official should the need arise.

Important: Chapters request changes, I update the information to the website, please remember to purge your browser cache for you to see the updates. As updates happen, I may make an announcement and post it to the website so be sure and check there before contacting me.

Reminder: Please double check the TEN-TEN Net Guide to be sure your net(s) are listed correctly. If there are changes, be sure to let me know so I can update the list. Also, as I receive updates to your chapters I update the list on the website to reflect the latest correspondence. If you do not see the website updated after a couple days, be sure and wipe your cache in your browser so you have a clean updated page before visiting ten-ten.org.

Reporting: www.ten-ten.org/index.php/resources/ten-ten-documents/ten-ten-forms for a form to download or www.ten-ten.org/chapters/quarterly-report to fill out and submit electronically. Be sure to notify IT Manager Jeff, N7YG, before using this easy-to-use form so he can add you to the Chapter Management Group. If you do not have internet access, let me know and I will send you a blank form that you can copy and submit. A responsible chapter official must report to the Chapter Coordinator. This is done quarterly. If there

are no changes to the previous report, then the chapter can go on for up to a year without reporting. A report must then be made even though no changes have been made. These reports may be made via the U.S. Postal Service or via email. One of the reasons listed for termination of the chapter is failure to report four consecutive quarters (1 year).

CHAPTER NEWS:

Aloha Chapter: I received mail (Snail Mail) from Irene NH7PE with all 4 2024-chapter reports. Anyone copying Hawaii you are encouraged to check into the Aloha chapter net. According to Irene, Bob KB6EGA is calling the Net on a part time basis, helping the chapter out. She also reports that 10 meters has been open quite a lot and that folks are really enjoying the openings.

One Last Plea Branding Iron: I received an email from Werner DH1PAL of Germany informing me of the passing of Peter DL6DK. Peter was the CH and CM of the Branding Iron Chapter. We are now in need of someone to take over the Branding Iron Chapter. I hope someone will step forward for this is a long running chapter in this organization.

Chapters at Risk of Termination: (no report in over a year):. Route 66 CH/CM KA9ADD Larry (last report 07/2023). Speedway CH/CM W7CAR Dave, (Last report 10/23). If anyone has contact with any of these chapter heads or coordinators, please let them know we would like to see these chapters continue.

All chapters are asked to plan for succession of leadership. I can't stress this enough we have lost a few great chapters that cannot continue due to the record keeping not being shared. PLEASE, To aid in such planning, IT Manager, Jeff, N7YG, has been setting up FTP accounts on the 10-10 server where chapters can save their data. **All CH:** contact Jeff for the details if you wish to take advantage of this opportunity. This is a good idea even for the redundancy of record keeping and in the event of a tragedy. I know there is redundancy in this message, but it really needs to be stressed if you wish the chapters to continue.

If any chapters accept email upgrades, please let me know so I can create a new list. Thanks.

chuck@n7uq.com

[Chuck Dockery, N7UQ, #72774](mailto:Chuck.Dockery.N7UQ.#72774)
112 S Rolling Meadows Dr,
Wylie, TX 75098-5163

TEN-TEN NET GUIDE

As of December 1, 2024

DAY	ZSUM	ZWIN	Chapter Name	Location	Freq	DAY	ZSUM	ZWIN	Chapter Name	Location	Freq
SUN	1300	1400	Arlington	Arlington, VA	29200	WED	0100	0200	Houston SHOT	Houston, TX	28488
SUN	1400	1500	Neanderthal	Euskirchen, DL	28355	WED	0200	0300	10-Bar-X	El Paso, TX	28445
SUN	1900	2000	Oregon Trail	Dallas, OR	28330	WED	1400	1500	EU DX/Branding Iron/ Hanse	Bergkamen, DL	28355
SUN	1930	1930	North Georgia	Atlanta, GA	28415	WED	1600	1600	Mississippi 10 Meter Society	Palahatchie, MS	28410
MON	0100	0100	Arizona Desert	Phoenix, AZ	28445	WED	1930	1930	Route-66	Apopka, FL	28370
MON	0100	0100	Lonestar	Arlington, TX	28460	THU	0100	0100	Cow Town	Arlington, TX	28460
MON	0100	0200	Milwaukee	Milwaukee, WI	28365	THU	0100	0200	Gateway	St. Louis, MO	28650
MON	0130	0230	Bauxite	Benton, AR	28470	THU	0100	0200	Milwaukee	Milwaukee, WI	28365
TUE	0001	0100	Ft McHenry/Corner- stone/ Yodar Kritch	Arbutus, MD	28370	THU	0230	0230	Windfarms	Livermore, Ca	28485
TUE	0100	0200	CO Centennial/CO Frontier Gang	Lakewood, CO	28340	THU	0230	0330	Up the Crick	Eugene, OR	28450
TUE	0100	0200	City of Lights	Aurora, IL	28150 CW	THU	1930	1930	Speedway	Rainer, OR	28350
TUE	0130	0230	Bauxite	Benton, AR	28470	FRI	0001	0100	Ft McHenry/Corner- stone/ Yodar Kritch	Arbutus, MD	28370
TUE	0130	0230	City of Lights	Aurora, IL	28720	FRI	0001	0100	Possum Trot	Raeford, NC	28345
TUE	0300	0400	Bay Area	Hayward, CA	28475	FRI	0001	0100	Steamboat Plus	Shreveport, LA	28430
TUE	0430	0430	Aloha	Hilo, HA	28490	SAT	1510	1610	Louisiana Pelican	Baton Rouge, LA	28450
TUE	1500	1600	New Mexico Mud Ducks	Albuquerque, NM	28835	SAT	1730	1730	Tango	Buenos Aires, LU	28650
WED	0001	0100	Castle Craig	Meriden, CT	28375						
WED	0100	0200	Cincinnati Area Ten Tuners	Cincinnati, OH	28430						

ARTICLES

There is always a need for articles in the News. There have been a couple requests for Do-It-Yourself articles. If you have something you would like to see in print please feel free to submit it. The most popular articles seem to be those relating to antennas, DIY projects, and kit building. Send your submissions to editor@ten-ten.org.

10-10 Has One Official Daily Net
28.380 MHz
Net Starts At 1800z
Every Day Except Sunday
Listen And If You Can Hear Us Join IN!!!

10-10 NET CONTROL STATIONS

ALL NETS BEGIN AT 1800Z

Monday	Doc, WB6OJB	#70675	CA
Tuesday	Ray, K7CWS	#50288	AZ
Wednesday	(OPEN)		
Thursday	Mke, V51MA	#64688	NAMiBIA
Friday	Steve, W7WHB	#77836	AZ
Saturday	Augustine, WA4GQJ	#78026	FL
Alternate	Tim, K1IEB	#74965	TX
Sunday	NEVER ON SUNDAY		



DX News

Mike Davidson, N5MT
(#24949)

Welcome to the Winter DX season of the 10-10 News. Solar Cycle 25 is producing big sun spots giving us high solar flux levels. The highest flux this year was August 8th at 336 but last year on Feb 17th it was 343 which may be the record high for Cycle 25! These two big flux numbers may indicate a twin peak for Cycle 25. The high solar flux this year gave us some bad propagation during two QSO Parties. There are twenty-three DX reports below that you can check and see if you made it into your log and three future DX events for you to chase. Good luck hunting the DX. Happy Holidays.

The ARRL website hack on May 15th required professional help to fix damaged computer systems. Servers were hit and the DXCC awards function was broken. The LoTW login was back on-line by July 1st and all data were ok. However, the processing of DXCC awards began in late October. The info on their website said 3000 applications were waiting to be processed. I found an old list of DXCC applications from July 2023 to May 2024 by callsigns. I counted about 15,000 DXCC apps for this 11-month period. This info was available on their website in November.

The winter DX season is the best period for the USA to hear into Europe and the Pacific areas to get more DX into your logs. <http://hamgallery.com/W1JR/>. The ARRL 10 Meter contest on December 14-15th is by far the most popular contest. So, turn on your HF radio and find a new country and some new 10-10 members that second weekend of December.

USA east coast stations have been talking with Europe this past Fall. The Digi and CW QSO Parties were a poor 10-10 event due to disrupted propagation and results are posted on the 10-10 Website. Congratulations to Walt WB7UOF #29034 for his first place score in the October CW QSO Party. Thanks to Dan KZ3T #41015 for scoring and sending out the certificates for the QSO Parties. Remember, this is the 62nd anniversary for 10-10, so try to find members with a 62 in their 10-10 number and log them.

The fall months have been above average for Ten meter skip. You should have a goal to find new members on Ten and log them. Each week I read DX email articles and look for 10-10 members going places. But the past months, I have seen fewer members going places, maybe because of the heat and flu.

I have found only a few 10-10 members going to DX sites, so watch for them on the dates given and hunt for the new DX you may need. In the October 26-27th CQWW DX SSB contest, I talked with a few old 10-10 members on the air. <https://cqww.com/rules.htm>. Finding new 10-10 members to log is harder for me here in Louisiana since my vertical antenna is not as good as the 4-element beam I had at my previous station in Texas.

Countries Awards and 10-10 History: I am still collecting history on the past 10-10 presidents. There were no Countries Award applications submitted this past quarter.

GENERAL 10-10 DX REPORTED IN THE PAST QUARTER:

3D Rotuma Island. A DXpedition from November 15th to December 4th used callsign 3D2Z. Hal **W8HC** #12502 had to cancel his trip. They had 3 stations and 2 remote Ribs operated by young ham ops but no 10-10 by anyone.

4U United Nations NY. The UN station **4U1UN** #55555, in New York city, was heard once in November on CW and once on SSB in September. The beacon is always on 28200 MHz and the UN is the closest DX country for US hams!

4U Geneva. The UN in Geneva Switzerland, **4U1TU** #11111 was using FT4 on 10 Meters in late November.

I Italy. Elvira **IV3FSG** #54292 was back home in September on Digi. She went DXing to TL the Central Africa Republic in late November, see below.

<https://www.qrz.com/db/5U5K>

5A Libya. Abubaker **5A1A** #6922 used his new call 5A1AL for Libya only on FT8 this past quarter. His new call is not a 10-10 member so ask him for his old call and number if you talk to him.

CY9 St. Paul Island. A DXpedition to St. Paul was from August 26th to September 5th used callsign CY9C. The 10-10 members were: Mike **K9NW** #29804, Dan **W4DKS** #5395, and Larry **W0PR** #31559. Web: www.CY9C.net.

ET Ethiopia. Ken **K4ZW** #18573 was last at the club station in May. The club call ET3AA is not a member. So you must find Ken K4ZW when he visits back at the club.

FW Wallis & Futuna Isl. Al **K7AR** #2736 and W7AYQ were DXing on the island from November 16-29th. They then went to Figi for two more days of DXing as 3D2NB and started operating on December 1st.

K USA. Andy **AA5JF** #46516 was on Dauphin Island in late August and September 1st but I found no 10 meter reports and all were mostly CW.

KH0 Mariana Isl. Tom **KC0W** #67688 has used his new call KH0W from the island where he has been for five years. Reports for him in Oct/Nov were on CW. He hopes to erect a better hexbeam on the island.

KH8 American Samoa. A DXpedition to Am. Samoa by three ops was from September 2-16th using call KH8T. Don **N5DD** #32255 was the only 10-10 member, they setup two stations operating on CW, SSB and FT8.

LA Norway. Several ops using call LN8W in the CQWW CW contest and Tom **LA9GX** #25949 was the only member.

J6 St. Lucia. A big group of ops were at J62K in the CQ WW SSB October 24-27th. The 10-10 members: Bill **K9HZ** #2618, Dan **W0CN** #27026, Kyle **WA4PGM** #50763, and Steve **W0ZB** #37921. LoTW.

OA Peru. Ed **OA4SS** #10802 was last on Ten in May when he was on CW, around 28030-28018 MHz.

TL Central Africa Republic. A DXpedition into Africa by Elvira **IV3FSG** #54292 started on November 26th for 14 days using call TL8ES. No 10-10 members live in this country, so consider this a rare 10-10 DX country! LoTW.

UN Kazakhstan. Uwe **DL8UD** #70315 was on from September 11th to 13th using call UN/DL8UD. He was reported on 28385-390 MHz. **Another rare 10-10!**

V3 Belize. Scott **K5PS** #52535 used call V31CO from November 23-30th and he was in the CQWW contest.

V5 Namibia. Mike **V51MA** #64688, continues to help the 10-10 daily net on Thursdays, when he has propagation from Africa on 28380 MHz at 1800 UTC, except Sunday's. He is sometimes on CW 28025 MHz after 1900 UTC other days.

VP5 Turks & Caicos Is. Several ops using VP5M were in the CQWW CW contest. Two members were: Dennis **K2SX** #9023 and Vernon **AC0W** #71644 from November 23-24th.

VP6 Pitcairn Island. Miralda **VP6MW** #50434, was active this fall on FT4 28180 and some SSB around 28555.

XT Burkina Faso. A group of 14 ops were on from October 31st to November 10th as XT2MD. Two members were: Peter **DL2LAM** #54293 & James **KB2FMH** #77506. There were openings from Africa for several hours during their stay in Burkina Faso with lots of contacts. **This was a rare 10-10 DX site on SSB.**

Z6 Kosovo. Rene **DL2JRM** #69623 used callsigns Z68XX and Z66BCC in November, from eastern Kosovo. In the CQ WW DX CW Rene used call Z66BCC. Rene has more than 55+ countries to his DX credit so good luck on a new one. I have no idea how many times he may have used his 10-10 during his travels. He does not use LoTW. Good luck.

ZL7 Chatham Islands. Holger **ZL3IO** #22401, who lives in New Zealand, worked a lot at the ZL7DX Chatham contest station in October. Chatham Island

is 550 miles east of New Zealand. He wanted to improve the existing antennas at the site, and the power needed for the amps and radios. He was able too op during the CQ SSB contest in late October. His goal is to be ready for all DX contests but his first priority was for the CQWW DX CW contest on November 23-24th. Holger's daughter Xenia ZL4YL #77857, joined him for a week at the improved Chatham station. Xenia's call was used during that CW contest. Holger had to improve the power at the station so they can run two stations during contests. The old battery system runs for 12 hours. I suspect his goal for the new station is to have a 50 percent increase in scores for all contests in the DX winter season. **Note: Chatham had 10-10 activity in 1990 by Miki ZLOADN/HA8XX/SK #39935. But you must consider this a rare 10-10 location as there is not a 10-10 member living on Chatham!**

UPCOMING DX & NEW 10-10 ACTIVITY:

3D2 Figi. Al **K7AR** #2736 and Bob W7YAQ will DX from Figi on December 1-2nd, then come home. They just came from FW Wallis Island from a 15 day DX operation.

FJ St. Barthelemy. Phil **K2LIO** #7746 is now using call FJ4WEB but he has been off the island for a few months.

Last year he came back to the island in November for his Winter and Phil is the only 10-10 member on St. Bart.

N USA. The **Battleship IOWA** will be on the air from December 7-8th using a special call NEPM. They will be working split frequency out of the ham bands and not using their **NI6BB** #77115 callsign! No info if they will be on 10?

MISCELLANEOUS ITEMS & NOTES:

Ten-Ten Website: <http://www.Ten-Ten.org> .

Propagation forecast: <http://www.solen.info/solar/> , www.SolarHam.net and <http://ARRL.org/Propagation> .

More propagation: <http://dx.gsl.net/propagation/> .

DX Calendar: <http://www.dxwatch.com/> .

DX: <http://www.youtube.com/watch?v=k4dJcK-WVRw>. <https://Secure.Clublog.org/mostwanted.php><http://ebarc.org/pdf/dx-entity-history.pdf>

Ham Lookup various ways:

<https://Haminfo.tetranz.com/map> .

Ham LoTW users: <http://www.hb9bza.net/lotw-users-list> .

NEW: WM7D Solar Values:

<https://www.wm7d.net/hamradio/solar/> .

FT8 Fox/Hound Video:

<https://www.YouTube.com/watch?v=GcbtTKSRkus> .

Propagation: I expect the solar flux to range from about 170-300 this

Fall. The sun moved across the equator on September 22nd for the autumnal Equinox, and the Winter Solstice starts winter on December 21st for our shortest day of the year. Cycle 25 eleven-year cycle started five years ago on November 17, 2019 and sunspots are counted by looking at the Sun but the solar flux is measured at 2.8 GHz.

The monthly **max** solar flux was: Jan 196, Feb 208, Mar 209, April 227, May 233, June 203, July 242 and August 336, Sept 262, Oct 312 and Nov 260. Average 244.

The monthly **min** solar flux was: Jan 126, Feb 137, Mar 127, April 112, May 135, June 165, July 164 and August 204, Sept 154, Oct 162, and Nov 140. Average 148.

On December 1st, the solar flux was 204, the A index 11 and K index 1. There were many sunspots on the Sun over the past year to boost the solar flux higher. So far: Cycle 25 hit a high flux value of 343 on February 17, 2023.

The previous solar peaks were in 2014, 2001, 1989 & 1979. The USAF forecast for December 1st to Jan 14th has a range of 190-220 with average flux 210, which is down 47 points from the last quarterly forecast. The flux graph is showing no growth in the curve of the flux numbers the past three months, which may indicate a peak of cycle 25 has past.

My Prediction: Over the next four months, the best propagation on Ten could be: December 7-11th; January 2025 2-5th, February 1-4th, & March 1-4th.

The ARRL Ten meter contest is on December 14-15th , just a few days after my projected high for December 2024.

For the USA, expect a 20-50% chance of DX to Europe, Asia, South America or Pacific areas. Use the beacons on 28.175-28.300 MHz to tell if the band is open. If the band is closed for SSB, try using FT8 on 28074 for a QSO.

There were only two new DX members who joined in Sept to November:

Guyle **VA6VA** #78361 & Robert **VA7RLS** #78364 are the last two DX members that joined. David **KC1TLF** #78371 was the last USA member to join.

Thanks to the Daily DX by Bernie W3UR #25731 and the ARRL DX Bulletins. This 10-10 DX News edition is my number 132nd of DXing reports for the past 33 years!

DX news to: Mike Davidson, 26274 Whispering Pines Ave, Denham Springs LA 70726 USA Email: N5MT@aol.com.

DX IS! 73 Mike Davidson N5MT #24949

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SPECIAL PRESENTATION

On December 6, the Red River Valley Chapter of 10-10 presented a Plaque to Mel Sojka, #33513, Former President of 1010, for his outstanding service to 1010, The Red River Valley Chapter and the Amateur Radio Community.

Presenting the Plaque was Ron W5SUM #2019. 24 Chapter members were present for the presentation, but 3 failed to make the picture!

The award was presented at the Annual Shreveport Amateur Radio Association (SARA) Christmas party. Mel is on our board of directors.

I met Mel in the late 1970's. The Red River Valley Chapter had gone dark, but Mel took control and "Refloated" the boat. Its been a large and active Chapter ever since.

Mel, Thanks for all you do!

Ronnie W5SUM #2019
1010 Vice President



Mel Sojka receiving Plaque from Ron Hull



Red Valley Chapter members at 2024 Christmas Party

10-10 Scholarship Foundation Supporters

We encourage all of our members to support the 10-10 International Net Scholarship Foundation. Our goal has always been to fund our scholarships entirely through member donations. At the Scholarship Foundation meeting in June, the Foundation Board voted to guarantee the funding for three \$2000 scholarships this year. The Foundation was created in 2001 and is a qualified 501(c)(3) tax exempt organization and contributions are tax deductible. Why not consider a donation as a Chapter or an individual in memory of a fellow ham or loved one? This quarter Larry Banks, W1DYJ, #65485 donated in memory of his father Sam Banks WA1INL If you have an employer matching program, please let us know. If you haven't donated before, we want you to know that all donations are appreciated and they do add up. At the time you make a donation to your favorite charity, please consider a donation to the 10-10 Scholarship Foundation

If you make a donation of \$25 or more you are eligible to receive one of the historic 10-10 pins. As more and more members have told me not to send a pin and want the maximum amount of their donation to go to the students, if you have made a qualifying donation and would like a pin, please contact me at wa2suh@aol.com. To pay by credit card see payment information on our website or send your check to me or the Data Manager. Our addresses can be found on Page 27.

The members listed below became 10-10 Scholarship Foundation Supporters during the months of September, October and November and we appreciate their support.

Silver (\$100 to \$499)

W1DYJ Larry Banks..... 65485
 KD5HIP..... John Zumbro..... 71476

Bronze (Up to \$99)

WA2VZQ Kenneth Stier..... 60620
 K3LKS Bartley Smith 75834
 KQ4KGP Edward Moore 78350

10-10 SCHOLARSHIP APPLICANT INFORMATION

Each year the 10-10 International Net, through our non-profit corporation, the 10-10 Scholarship Foundation, funds three \$2000 scholarships, which have been administered on our behalf by the Foundation for Amateur Radio (FAR). It is suggested that every 10-10 member encourage qualified college-bound amateur radio operators to take advantage of this opportunity. Over the past 36

years, 10-10 has funded 133 scholarships valued at \$177,000.

Applicants must be licensed amateurs. There is no restriction on the course of study, but applicants must intend to seek at least an Associate Degree from a college or university. Non-U.S. amateurs and those seeking graduate degrees are also eligible, as well as students who study outside the United States. Details for applications will be provided on our website in early 2025 and in the Spring 10-10 News.

2025 Ten-Ten QSO Party Schedule

Event	Dates	Postmark
Winter Phone	Feb. 1-2	Feb. 10
Spring Digital	April 26-27	May 5
Spring CW	May 3-4	May 13
Open Season	June 7-8	June 16
Weak Signal	July 12-13	July 21
Summer Phone	Aug. 2-3	Aug. 11
Sprint	Oct. 10	Oct 18
Fall CW	Oct. 18-19	Oct. 27
Fall Digital	Nov. 8-9	Nov. 17
Anniversary (63)	Jan 1 - Dec 31	Jan 8, 2025
Meet the Volunteers	Jan 1 - Dec 31	Jan 8, 2025



Net Report

Steve Wagner, W7WHB
 (#77836)

Net Report for 3rd Quarter 2024

Monday Nets

DATE	TOTAL	NO 10X#
1-Jul	8	0
8-Jul	6	0
15-Jul	8	3
22-Jul	8	2
29-Jul	5	0
5-Aug	1	0
12-Aug	2	1
19-Aug	37	12
26-Aug	34	16
2-Sep	49	23
9-Sep	8	1
16-Sep	31	7
23-Sep	34	6
30-Sep	23	6

Tuesday Nets

DATE	TOTAL	NO 10X#
2-Jul	8	0
9-Jul	7	0
16-Jul	5	1
23-Jul	8	0
30-Jul	8	0
6-Aug	9	0
13-Aug	7	0
20-Aug	9	1
27-Aug	16	5
3-Sep	22	3
10-Sep	7	0
17-Sep	6	0
24-Sep	15	2

Wednesday Nets

DATE	TOTAL	NO 10X#
3-Jul	8	0
10-Jul	5	2
17-Jul	4	0

Thursday Nets

DATE	TOTAL	NO 10X#
4-Jul	7	3
11-Jul	5	1
18-Jul	4	0

Wednesday Nets (Cont.)

DATE	TOTAL	NO 10X#
24-Jul	4	1
31-Jul	7	0
7-Aug	19	10
14-Aug	4	0
21-Aug	15	3
28-Aug	34	16
4-Sep	25	11
11-Sep	16	10
18-Sep	25	5
25-Sep	27	7

Thursday Nets (Cont.)

DATE	TOTAL	NO 10X#
25-Jul	6	1
1-Aug	2	1
8-Aug	16	6
15-Aug	1	0
22-Aug	6	1
29-Aug	33	18
5-Sep	21	2
12-Sep	22	7
19-Sep	17	2
26-Sep	28	10

Friday Nets

DATE	TOTAL	NO 10X#
5-Jul	12	1
12-Jul	9	0
19-Jul	7	0
26-Jul	5	0
2-Aug	7	0
9-Aug	11	0
16-Aug	5	0
23-Aug	23	8
30-Aug	11	1
6-Sep	28	5
13-Sep	6	0
20-Sep	31	9
27-Sep	40	15

Saturday Nets

DATE	TOTAL	NO 10X#
6-Jul	5	3
13-Jul	8	2
20-Jul	8	4
27-Jul	4	2
3-Aug	14	4
10-Aug	5	1
17-Aug	6	0
24-Aug	25	11
31-Aug	21	6
7-Sep	22	9
14-Sep	20	4
21-Sep	24	6
28-Sep	26	8



QSO Parties

Dan Morris, KZ3T
(#41015)

2024 Sprint QSO Party

October 10, 2024

TOP TEN

CALL	10-10#	CTX W	CTX WO	TOTAL
1. DL8YBM	36109	50	231	331
2. K7QXG	5956	42	81	165
3. V51MA	64688	18	102	138
4. N5MT	24949	30	72	132
5. KD0FDJ	75393	16	58	90
6. KD5DE	33513	18	13	49
7. KD5ILA	77652	4	17	25
8. KO4OL	67730	1	17	19
9. KB0ARZ	48754	1	7	9
10. K5PLH	77878	4	0	8
10. KE6GFI	72985	2	4	8
10. WA2SUH	407	4	0	8

CALL AREA ORDER

CALL AREA 0

CALL	10-10#	CTX W	CTX WO	TOTAL
KD0FDJ	75393	16	58	90
KB0ARZ	48754	1	7	9

CALL AREA 2

CALL	10-10#	CTX W	CTX WO	TOTAL
WA2SUH	407	4	0	8
AC2ZZ	78198	2	0	4
NC2M	38720	1	0	2

CALL AREA 3

CALL	10-10#	CTX W	CTX WO	TOTAL
N3GTY	50585	0	1	1

CALL AREA 4

CALL	10-10#	CTX W	CTX WO	TOTAL
KO4OL	67730	1	17	19
KM4AEM	77309	0	3	3

CALL AREA 5

CALL	10-10#	CTX W	CTX WO	TOTAL
N5MT	24949	30	72	132
KD5DE	33513	18	13	49
KD5ILA	77652	4	17	25
K5PLH	77878	4	0	8
W5SUM	2019	3	0	6
AA5AH	78106	2	0	4
KM5EH	71103	2	0	4
KM5FF	50356	2	0	4

CALL AREA 7

CALL	10-10#	CTX W	CTX WO	TOTAL
K7QXG	5956	42	81	165
KE6GFI	72985	2	4	8

QRP

CALL	10-10#	CTX W	CTX WO	TOTAL
KD0FDJ	75393	16	58	90

MOBILE

CALL	10-10#	CTX W	CTX WO	TOTAL
N1WVQ	73256	3	2	8

GERMANY

CALL	10-10#	CTX W	CTX WO	TOTAL
DL8YBM	36109	50	231	331

NAMIBIA

CALL	10-10#	CTX W	CTX WO	TOTAL
V51MA	64688	18	102	138

LOW POWER

CALL	10-10#	CTX W	CTX WO	TOTAL
V51MA	64688	18	102	138
KD5DE	33513	18	13	49
KD5ILA	77652	4	17	25
KO4OL	67730	1	17	19
KB0ARZ	48754	1	7	9
K5PLH	77878	4	0	8
KE6GFI	72985	2	4	8
WA2SUH	407	4	0	8
W5SUM	2019	3	0	6
AA5AH	78106	2	0	4
AC2ZZ	78198	2	0	4
KM5EH	71103	2	0	4
KM5FF	50356	2	0	4
KM4AEM	77309	0	3	3
NC2M	38720	1	0	2
N3GTY	50585	0	1	1

HIGH POWER

CALL	10-10#	CTX W	CTX WO	TOTAL
DL8YBM	36109	50	231	331
K7QXG	5956	42	81	165
N5MT	24949	30	72	132

CLUB ENTRIES

CALL	10-10#	CTX W	CTX WO	TOTAL	OPS
DF0IA	68914	50	231	331	DL8YBM
NM5H	68588	30	72	132	N5MT
W5RRV	42114	18	13	49	KD5DE
WN5AIA	77623	3	0	6	W5SUM

2024 Fall CW QSO Party

Oct. 19 - 20

TOP TEN

CALL	10-10#	CTX W	CTX WO	TOTAL
1. WB7UOF	29034	36	51	123
2. KI4W	62657	14	39	67
3. KD5DE	33513	8	14	30
4. KZ3T	41015	7	15	29
5. NC2M	38720	7	9	23
6. WB6IZG	55393	6	6	18
7. AA1CX	46677	2	10	14
8. KG5SSB	77934	4	2	10
9. AJ7B	7675	4	0	8
10. WA2SUH	407	2	2	6
10. WA3JXW	4377	3	0	6

CALL AREA ORDER

CALL AREA 1

CALL	10-10#	CTX W	CTX WO	TOTAL
AA1CX	46677	2	10	14

CALL AREA 2

CALL	10-10#	CTX W	CTX WO	TOTAL
NC2M	38720	7	9	23
WA2SUH	407	2	2	6

CALL AREA 3

CALL	10-10#	CTX W	CTX WO	TOTAL
WA3JXW	4377	3	0	6

CALL AREA 4

CALL	10-10#	CTX W	CTX WO	TOTAL
KI4W	62657	14	39	67
KZ3T	41015	7	15	29

CALL AREA 5

CALL	10-10#	CTX W	CTX WO	TOTAL
KD5DE	33513	8	14	30
KG5SSB	77934	4	2	10
KM5FF	50356	2	0	4
W5SUM	2019	2	0	4

CALL AREA 6

CALL	10-10#	CTX W	CTX WO	TOTAL
WB6IZG	55393	6	6	18

CALL AREA 7

CALL	10-10#	CTX W	CTX WO	TOTAL
WB7UOF	29034	36	51	123
AJ7B	7675	4	0	8

CALL AREA 9

CALL	10-10#	CTX W	CTX WO	TOTAL
NK9Y	37014	1	0	2

QRP

CALL	10-10#	CTX W	CTX WO	TOTAL
NK9Y	37014	1	0	2

LOW POWER

CALL	10-10#	CTX W	CTX WO	TOTAL
WB7UOF	29034	36	51	123
KI4W	62657	14	39	67
KD5DE	33513	8	14	30
KZ3T	41015	7	15	29

LOW POWER (Cont.)

CALL	10-10#	CTX W	CTX WO	TOTAL
NC2M	38720	7	9	23
AA1CX	46677	2	10	14
KG5SSB	77934	4	2	10
AJ7B	7675	4	0	8
WA2SUH	407	2	2	6
WA3JXW	4377	3	0	6
KM5FF	50356	2	0	4
W5SUM	2019	2	0	4

HIGH POWER

CALL	10-10#	CTX W	CTX WO	TOTAL
WB6IZG	55393	6	6	18

CHAPTER ENTRIES

CHAPTER	LOGS	PTS
POSSUM TROT	2	96
STEAMBOAT	3	38
NM MUD DUCKS	1	4

CLUB ENTRIES

CALL	10-10#	CTX W	CTX WO	TOTAL	OPS
WN5AIA	77623	2	0	4	W5SUM

2024 Fall DG QSO Party

November 9-10

TOP TEN

CALL	10-10#	CTX W	CTX WO	TOTAL
1. KD5DE	33513	16	6	38
2. AJ7B	7675	17	1	35
2. KZ3T	41015	16	3	35
3. WA3GM	46927	12	9	33
4. N7WLC	63782	13	4	30

TOP TEN (Cont.)

CALL	10-10#	CTX W	CTX WO	TOTAL
5. N3GTY	50585	12	1	25
5. W2VTV	71275	11	3	25
6. KM5EH	71103	10	3	23
7. KA7IVB	36769	9	0	18
8. AA5AH	78106	8	1	17
8. W8IM	2173	8	1	17
9. KM5FF	50356	8	0	16
10. KA5VZG	46596	6	2	14

CALL AREA ORDER

CALL AREA 1

CALL	10-10#	CTX W	CTX WO	TOTAL
AA1CX	46677	2	0	4

CALL AREA 2

CALL	10-10#	CTX W	CTX WO	TOTAL
W2VTV	71275	11	3	25

CALL AREA 3

CALL	10-10#	CTX W	CTX WO	TOTAL
WA3GM	46927	12	9	33

CALL AREA 4

CALL	10-10#	CTX W	CTX WO	TOTAL
KZ3T	41015	16	3	35
W8IM	2173	8	1	17
KA5VZG	46596	6	2	14

CALL AREA 5

CALL	10-10#	CTX W	CTX WO	TOTAL
KD5DE	33513	16	6	38
KM5EH	71103	10	3	23
AA5AH	78106	8	1	17
KM5FF	50356	8	0	16
N5PTA	77891	4	2	10

CALL AREA 6

CALL	10-10#	CTX W	CTX WO	TOTAL
N7WLC	63782	13	4	30

CALL AREA 7

CALL	10-10#	CTX W	CTX WO	TOTAL
AJ7B	7675	17	1	35
KA7IVB	36769	9	0	18

QRP

CALL	10-10#	CTX W	CTX WO	TOTAL
W8IM	2173	8	1	17

NEW ZEALAND

CALL	10-10#	CTX W	CTX WO	TOTAL
ZL3TE	53431	3	3	9

LOW POWER

CALL	10-10#	CTX W	CTX WO	TOTAL
KD5DE	33513	16	6	38
AJ7B	7675	17	1	35
KZ3T	41015	16	3	35
WA3GM	46927	12	9	33
N7WLC	63782	13	4	30
N3GTY	50585	12	1	25
W2VTV	71275	11	3	25
KA7IVB	36769	9	0	18
AA5AH	78106	8	1	17
KM5FF	50356	8	0	16
KA5VZG	46596	6	2	14
N5PTA	77891	4	2	10
ZL3TE	53431	3	3	9
AA1CX	46677	2	0	4

HIGH POWER

CALL	10-10#	CTX W	CTX WO	TOTAL
KM5EH	71103	10	3	23

CHAPTER ENTRIES

CHAPTER	LOGS	PTS
POSSUM TROT	3	85
STEAMBOAT	1	38
CHIEF SEATTLE	1	35

CLUB ENTRIES

CALL	10-10#	CTX W	CTX WO	TOTAL	OPS
NZ4FF	77686	12	1	25	N3GTY

CHECK LOGS

CALL	10-10#	CTX W	CTX WO	TOTAL	OPS
KI5EWG	0	5	1	11	0
W4BZM	0	4	1	9	0

TEN-TEN AWARDS

To apply for any 10-10 Award, paid-up membership is mandatory. You are not required to send in proof as the Awards Manager has the current membership database. All contacts made for any award must be legal 10-10 contacts (a full exchange of Call, Name, QTH and 10-10 number from BOTH members). An application listing the rules for each award is available from the appropriate Awards Manager listed at the end of the award listings. Please send your request with a #10 (business size) envelope, self addressed and stamped with one unit of first class postage (or enclose one IRC for GB Award), to the Award Manager for the Award you are interested in obtaining. Please no phone calls to Award Managers for an application or list of rules. Contact requirements and rules for all Awards are available on the 10-10 website at www.ten-ten.org

TOP TEN HONOR ROLL

No.	CONTACTS	CALL	10-10#
1.	24600	WA5JDU	3017
2.	11700	K0PV	9902
2.	11700	N5XZ	4530
4.	11400	DL8YBM	36109
5.	10800	N1API	25468
6.	9800	N5DAS	35877
7.	8800	AC6FU	10937
8.	8200	K5FBS	48461
9.	8100	WB3FGU	16728
10.	6500	LU1BJW	39329

COUNTIES AWARDS

1000

NO.	CALL	10-10#
34	KZ3T	41015

1400 COUNTIES

NO.	CALL	10-10#
10	W1API	25468

TOP TEN CLUB

No.	CONTACTS	CALL	10-10#
1.	4400	K6MQ	71487
2.	3700	DL0X	75555
3.	2100	W8PGW	74726
3.	2100	VE4WSC	50470
5.	2000	W1NRG	29650
6.	1300	WB2HIW	38770
7.	1200	NM5MD	72385
7.	1200	W4MNM	75450

VP AWARDS

BASIC AWARD

NO.	CALL	10-10#
3374	WB0IZO	11197

800 Bar

NO.	CALL	10-10#
33	KB5UNX	64337

AWARDS MANAGERS

BAR 100-900..	Dan Morris, KZ3T #41015	3162 Covington Way, Lenoir NC 28645	(828) 728-5049	dbmorris315@gmail.com
Bar 1000+	Rob Cromer, KE0MIZ #77647	12932 Palamino Place, Wellington, CO 80549	(970) 692-4421	rdcromer@rccomps.net
VP Bar	Thomas Cole, KI5ELV #77743	3238 Wagner St., Shreveport, LA 71108	(318) 617-0562	ki5elv@yahoo.com
VP WAS	Charles (Chuck) Dockery, N7UQ #72774	112 S. Rolling Meadows Dr. Wylie, TX 75098	(469) 829-5462	chuck@n7uq.com
VP Lucky 13	Dan Morris KZ3T #41015	3162 Covington Way, Lenoir NC 28645	(828) 728-5049	dbmorris315@gmail.com
WAC	Kevin Gilot, NZ1I, #72759	50 Cindy Lane Mystic, CT 06355-1404	(860) 572-6086	kevinemtid@tvconnect.net
Counties	Mark Tatlor Murphy, KC4HIT #57488	PO Box 936, Conover, NC 28613-0936	(336) 561-3630	kc4hit@gmail.com
Countries	Mike Davidson, N5MT #24949	26274 Whispering Pines Ave, Denham Springs, LA 70726	(713) 417-4727	N5MT@aol.com
CW	Lee Zalaznik, KI6OY #50948	334 Olivina Ave., Livermore, CA 94551-6137	(925) 455-0361	lee.zalaznik@sbcglobal.net
Digital	Jeff Steinkamp, N7YG #65084	6765 E. Rosewood Cir., Tucson, AZ 85710	(520) 546-2290	n7yg@n7yg.com
Mobile	Paige Butler, W0FLZ #48658	21922 36th Ave NW, Stanwood, WA 98292	(425) 308-5561	w0flz62@gmail.com
OM/XYL	Marcus Lieberman, KM5EH #71103	2300 Hurley Drive NW, Albuquerque, NM 87120-1013	(505) 836-1724	buckml@lobo.net
WAS	Eva Donaldson, WB0CON #53964	12933 W Montana Drive, Lakewood, CO 80228-4244	(303) 989-0475	wb0con@comcast.net
WPX	Ed Bryant, KM5FF, #50356	9001 Sunbow Ave SW, Albuquerque, NM 87121-8851	(505) 934-2100	elbble@gmail.com
GB Counties	Mike Crawshaw, G4BLH #18446	35 Edward Drive, Clitheroe, Lancashire, England BB7 1EF	No Phone	g4blh@zen.co.uk

An Introduction to the nanoVNA

Jeff Steinkamp, N7YG, 65084

One of the most versatile pieces of test equipment every amateur radio hobbyist needs in their arsenal of test equipment is a Vector Network Analyzer (VNA). Up until recently, one of these instruments was out of reach for most due to the staggering prices for these devices, even on the surplus market. A commercial VNA can run between \$50,000 and over the \$200,000 price mark, even on the surplus market. With the advances in chip technology, firmware and software, VNA's for the hobby market are now available at reasonable prices. The nanoVNA is one of such devices and it is being produced under an Open-Source licensing agreement for both the hardware and the software that drives it.

A Vector Network Analyzer, VNA, is an instrument that measures network parameters of electrical networks, such as antennas or antenna systems, filters, individual components, etc. The VNA sends a known signal (an electromagnetic wave of known magnitude and frequency) into a device under test, DUT, and measures how much of that wave reflects from the device (reflection) and how much transmits through the device (transmission). The VNA captures both magnitude and phase of the reflected wave from the DUT or magnitude and phase of the wave that has passed through the DUT.

When measuring one port devices, such as an antenna or individual components, the VNA transmits a signal of known magnitude and frequency from its Port 1 into the DUT and measures magnitude and phase of the reflected signal from the DUT on the same port, VNA Port 1 (S11).

When measuring two port devices, e.g. filters, the VNA transmits a signal of known magnitude and frequency from its Port 1 into the DUT and measures the magnitude and phase of the signal passed through the DUT to the VNA's other port, Port 2 (S21).

All other "measurements" are calculated in the VNA based on measurements of the magnitude and phase of the reflected and transient signal.

While the accuracy of a nanoVNA is not at the level of commercial devices that have been calibrated to a known standard, they have been tested against professional devices and have been found to be within an accuracy tolerance of less than 2%, from the data and testing I have read up on. For hobbyists work this will meet our demands quite nicely.

When it comes to the nanoVNA and its Open-Source development, there are a number of these devices, from various producers on the market today. The two current lines that I would recommend are the nanoVNA-H series and the nanoVNA-F series. Either device can be ordered with a 2.8-inch screen or a 4.3-inch screen. I have seen some of these being advertised with larger screens, but they can become quite pricey. The difference between the H and the F is the hardware/firmware and who is maintaining that firmware. The H has more advanced features than the F models, but only a very few hobbyists would require those advanced features. I have two devices, a 2.8 inch H model and a 4.3-inch F-V2 model and those are pictured below in Figures 1 and 2. How I ended up with two is a long story, but the condensed version is don't order on Amazon without a proper set of reading glasses.



Figure 1. 2.8 inch nanoVNA-H

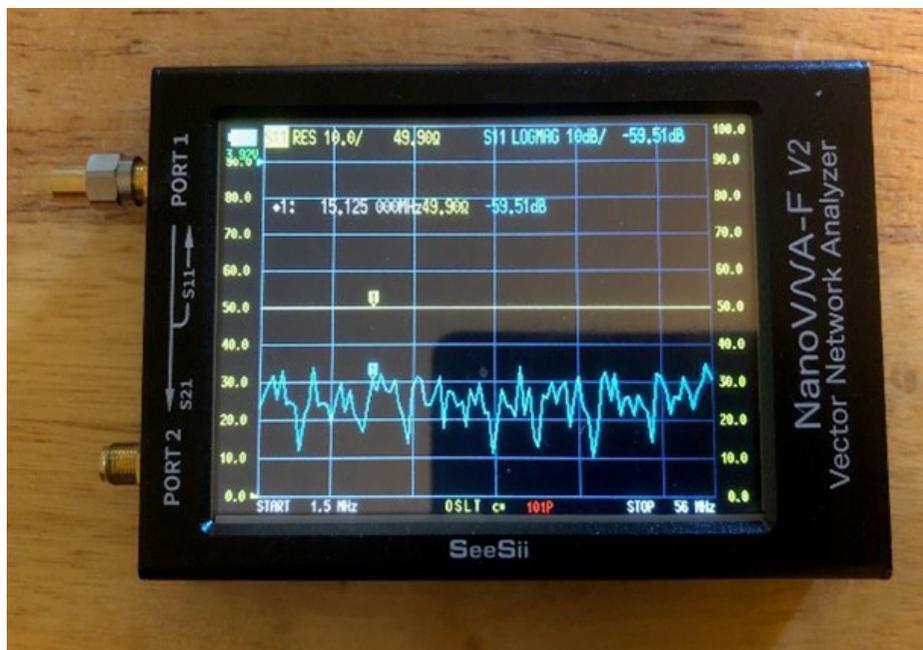


Figure 2. 4.3 inch nanoVNA-H

I did get my VNA's from Amazon, but a simple Google search will reveal a number of outlets selling these on line ranging from \$50 to well over \$200. Pay particular attention to the upper frequency limit of the device. Some of the older devices have a hardware limit of 900 MHz, while newer models will range anywhere from 1.3 GHz to 6.3 GHz. Both of my devices have an upper limit of 3 GHz.

When selecting a seller, be cautious of using any of the Chinese resellers as the after sales support is almost non-existent. Tmeu, AliExpress and Bandgood are a few.

The 2.8-inch nanoVNA-H is in figure 1 and the 4.3-inch nanoVNA-F V2 is in figure 2. For the most part I use the F Model unless there are some advanced Smith Chart settings I need, and so far, that need has not occurred.

This particular device is made by Sysjoint and they do have a website to download the user guide and the Quick Start Guide with the Menu Map for the device.

https://www.sysjoint.com/index.php?tpl=product_detail&pid=11&uid=17&id=65&sno=1&list=2&lang=en

Compared to other devices, these documents are put together quite well and are very easy to understand. I would recommend you search out whatever device you purchase and obtain the menu map and a user guide for that device so you will have local reference to it. You can print the menu map and store that with the device.

All of these devices can be connected to a Windows desktop computer that has nanovna-saver installed. You will find that here: <https://github.com/NanoVNA-Saver/nanovna-saver/releases>

The current version, 0.6.4, has a binary built for Linux that is also available at the page listed above. We will discuss using the computer with the nanoVNA in a later installment.

Before we get started there are some very important things to remember about these devices. The SMA connectors on these devices are fragile and if you apply too much weight or mass to these connectors, you could damage them. You should have received 2 small SMA extension cables. Connect these to each of those ports and leave them connected all the times. When large adapters such as BNC, UHF or Type N are connected, these cables will make sure you do not place undue stress on these connectors. SMA connectors do have a torque specification of 8 in/lbs. or 0.9 N/m. You can find an appropriate SMA Torque wrench on Amazon for around \$30

With the majority of our radio equipment sporting UHF connectors, you will need an SMA-UHF adapter set and these can be sourced on Amazon and other outlets. If you have devices with BNC and N connectors, I would recommend

picking up a set of those adapters also.

With all of these adapters, and cables, a suitable storage solution is also called for.

The box in Figure 3 is an \$8.00 fishing tackle box I found at Walmart. I also have my tinySA along with the SW-33 power meter and the 20-watt DC-1.5 GHz dummy load. I have all the adapters sorted along with the calibration devices and associated cables. I even attached the menu map so it is easily referred to.

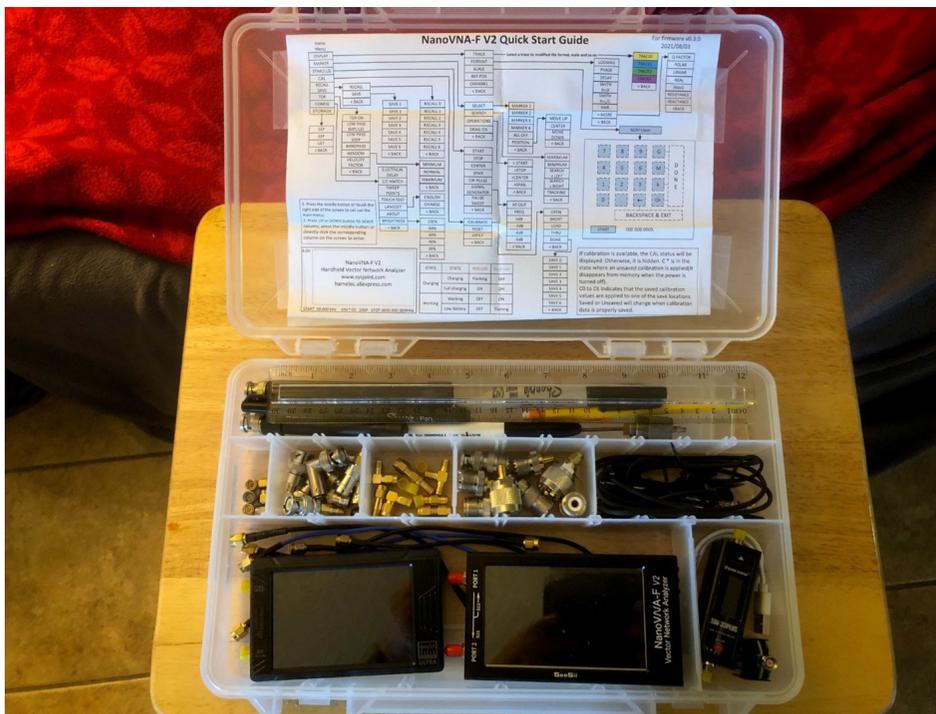


Figure 3. nanoVNA-H Storage Box

When you first receive your new nanoVNA, you will need to charge it. Plug the USB charging cable into any USB port on a computer or a USB Charging cube and the other end into the USB-C port on the device. It will take a few hours to completely charge the battery. At this time, if you have not already connected the two short extension cables to the two ports on the device, connect and tighten them.

To ensure accuracy of your measurements with the nanoVNA, you must perform a calibration of the VNA at the point it connects to the Device Under Test (DUT). That will be at the SMA connectors on the device, or if you have the two small extension cables connected, the calibration will be at the open end of those.

This calibration is referred to as the SOLT calibration, Short, Open, Load, and Through. Each calibration must have a defined frequency range for that calibration. While the VNA can cover 100 KHz – 3GHz, calibrating the VNA for that whole spectrum is not useful especially if you have a VNA that only computes 101 data points. Depending on the model of the VNA, it will have between 5 – 7 memories to save and recall these calibrations. Breaking these up into usable segments will provide much better resolution for different parts of the spectrum and your general use. A good plan might be as follows:

1. 100 KHz-130Mhz Covers HF and 6 Meters
2. 130 MHz- 400 MHz Covers 2 and 1.25 Meters
3. 400 MHz – 900 MHz Covers GRMS, 70m 23 and 13 cm
4. 900 MHz – 3 GHz (6GHz) Covers the rest of the spectrum

Before we start a calibration, we want to setup the VNA to define the 4-trace formats that we will normally use along with a start and stop frequency. The 4 trace we will display are Resistance, LOGMAG, SWR and the Smith Chart (R+L/C). Everything is accomplished through the touchscreen menu. You can use the supplied Guitar Pick, the Stylist or your finger. Do not use the point on a pencil or ballpoint pen as these could damage the touch screen. To access the menu, touch the screen anywhere along the right side of the screen. To hide the menu, touch in the center of the screen.

The first thing we will do is set the start and stop frequencies. Tap the screen to open the menu.

1. Start Frequency: Tap Stimulus -> Start -> Enter 100k.
2. Stop Frequency: Tap Stimulus -> Stop -> Enter 130M.
3. Tap <Back.

Tap on CONFIG -> Sweep Points -> enter 301 or the maximum number of sweep points the VNA will handle. If you are using a nanoVNA-H, that setting is under STIMLUS.

Now we will setup each of the trace parameters. Tap Display -> Trace. Trace 0 – 3 will be highlighted and with a check mark to indicate the trace is enabled. One Trace will have a boxed A to indicate that is the active trace. You can make any trace active by taping the trace. You can make any trace inactive by taping the trace twice until the highlight disappears.

In figure 4, we have trace 0 selected as active and the other three traces are enabled. We will now set the format for trace 0, which in this case we will set to resistance.



Figure 4. nanoVNA-H Trace Selection

Tap <BACK -> Format -> More -> Resistance.

Tap <BACK -> <BACK Then TRACE and activate Trace 1.

Tap <BACK -> Format -> LOGMAG.

Tap <BACK -> Then TRACE and activate Trace 2.

Tap <BACK -> Format -> SWR.

Tap <BACK -> Then TRACE and activate Trace 3.

Tap <BACK -> Format -> Smith R + L/C.

Now on to the calibration. Anytime you do a calibration, you must clear out whatever is the current calibration that is being used. Tap on CAL -> RESET. This does not affect any calibrations you have previously saved.

Locate the 3-calibration screw on connectors that were include with the VNA along with the barrel connector. Keep these close at hand as they are very easy to lose, especially in a rust-colored carpet! If the CAL menu is still open from the previous step, Click on CALIBRATE to get the calibration menu.

Everything will be performed on the S11 port, either directly on the SMA connector on the VNA or at the end of the pigtail. If you are using the pig tail, insert the barrel connector.



Figure 5. nanoVNA-H Trace Selected

Place the open calibration connector at the end of the pig tail then tap OPEN. When that calibration is completed, SHORT will be highlighted. Remove the OPEN and install the SHORT. Tap SHORT. LOAD will highlight. Remove the SHORT and install the LOAD. Tap LOAD. If your VNA has an ISOL calibration, Tap it. THRU will highlight. Remove the load and connect the two pigtails together using the barrel connector so that S11 and S21 are connected. Tap THRU. When the calibration is complete, tap DONE. Save this calibration to the first save location. This will be the calibration that is recalled each time the unit is powered up.

To store additional calibrations based on a different range of frequencies, start back where we cleared the current calibration and set the new frequency span and repeat this calibration and save this into one of the other 6 save locations for easy recall.

To recall any of the saved calibrations, Open the menu and click on RECALL and select the calibration you need.

At this point it is probably prudent to review the owner manual that came with the VNA or download the manual from the internet. Go through it, cover to cover so you have a basic idea of what the device is capable of. There is also a plethora of videos out there for your viewing pleasure on anything having to do with a nanoVNA. Some of these are extremely excellent productions while others are not so great. But they all reach their objective in conveying information. Some of these will get down in the weeds with technical jargon and some high-speed mathematics, but there are times when you will have to perform some basic math.

To close out this introduction, we will evaluate a dummy load, two to be exact, followed by an evaluation of a random, unmarked length of coaxial cable all using a nanoVNA. I have already calibrated this VNA to the specifications from elsewhere in this discussion.

Every ham should have at least one if not more dummy loads for various frequency ranges. But just how accurate is that load? For this discussion we will evaluate a Ten-Tec Model 209 and a SURCOM 405. The 209 is advertised as 50 ohms, 300 watts for 30 seconds. The 405 is 20 watts peak from DC-1 GHz with an advertised SWR of less than 1.15. The 209 I've had since the mid 80's and I do not have a data sheet for the device and unfortunately because this is so old, Ten-Tec no longer has any data on it either.

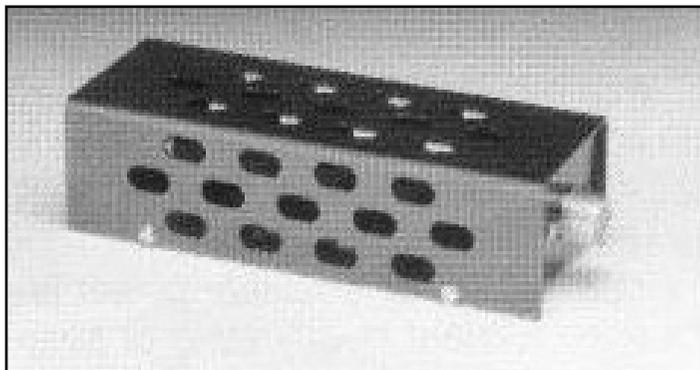


Figure 6. Ten-Tec 209 Dummy Load

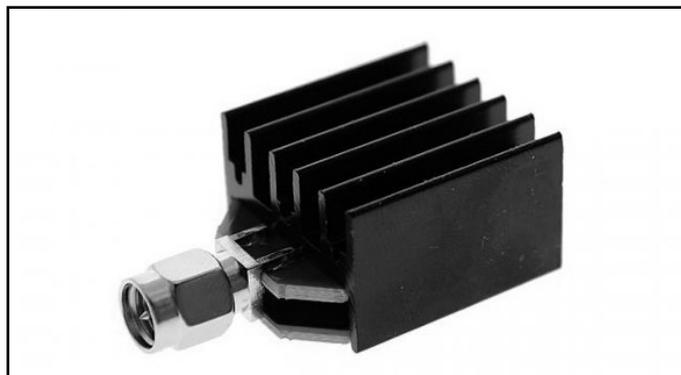


Figure 7. SURCOM 405 Dummy Load

For this evaluation we will turn off two of the traces and leave just the S11 R (resistance) and the S11 SWR traces visible. We will also recall the 100K – 130M calibration.

I have connected the 209 to the VNA via the pigtail and a SMA to UHF adapter.

Figure 8 is the display of this load.

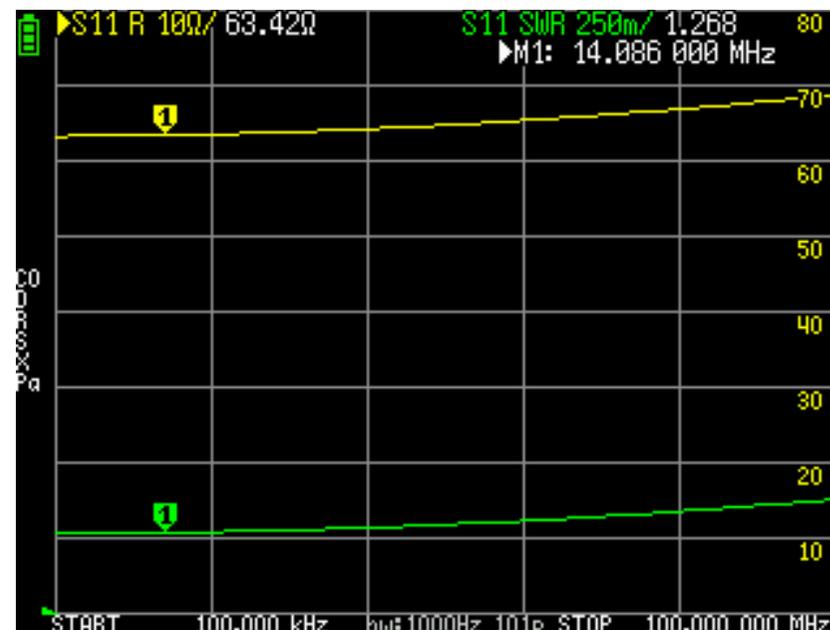


Figure 8. Display with Ten-Tec 209 Dummy Load

The Marker labeled 1 is at 14.086 Mhz. The resistance is reading 63.4 ohms with the SWR at 1.268.

We can see the SWR and the Resistance increase to almost 70 Ohms at 100 MHz with a SWR of almost 1.4.

For a 50 Ohm dummy load that should have a tolerance of not more than 5% or +/- 2.5 ohms, this load is not even close.

I suspect that due to its age and the material used for the resistive element, age has taken its toll.

I would not use this dummy load in everyday practice, although in a pinch it could work as long as you understand the induced SWR and resistance.

The SURECOM 405 load is much better with a constant resistance of 49.2 ohms and an SWR of 1.014.

Checking this at 900 MHz the resistance was 48.12 ohms with the SWR at 1.046

At 1 GHz, which is the upper limit of this device, the resistance is 48.17 ohms and the SWR is 1.059.

Above 1 GHz, the reading started to get a little flakey and showing some signs of reactance properties.

The 405, although limited to 20 watts peak power, is a suitable load for QRP



Figure 9. Display with SURCOM 405 Dummy Load

rigs and most HT's. The Ten-Tec 209 will be retired as a museum piece and I will rebuild it using the same technology as the 405 to handle 300 watts, intermittently.

To conclude this introduction, we will evaluate some coax cable. Many of us have a stash of unknown and unmarked coax cable of various sizes. Without something that tells us what the part number of the cable is, we have no way of knowing the cable impedance, the velocity factor of the cable, or how much loss we can expect from the cable. As long as we know the physical length of the cable in meters, using the nanoVNA, we can calculate the velocity factor, the cable impedance and read the cable loss. You will need to have an accurate physical measurement of the cable. If you do not have a metric tape measure, then determine the cable length in inches and multiply that value in inches by 0.0254 for its length in meters. Do not assume that just because a cable has UHF type connectors that it is 50-ohm cable. UHF, BNC and N connectors can be purchased in either 50 or 75-ohm impedance values.

To determine the velocity factor of the cable, we will measure the free space distance for one wavelength along the cable then divide the actual length by that free space length for the velocity factor.

The cable impedance is easily determined by taking the square root of the cable's inductance divide by the cable's capacitance at the cables 1/4 wavelength frequency (+/- 90 degrees on the Smith Chart).

Cable loss can be determined with a through measurement between S11 and S21 and looking at LOGMAG values along the frequency domain.

Many of us have unknown coax cable just sitting around without any identifying marks on them. If you know the physical length of the coax, we can determine the velocity factor and the impedance using the nanoVNA with a bit of basic mathematical calculations. We'll start with the velocity factor of the cable.

For this discussion, I am using a 10-foot length of RG8 Mini coax from Radio Shack that I have laying around. Record the physical length of the coax in meters – 3.048 meters in this case.

Hook one end of the coax to the S11 port and leave the other end open. Power on the VNA and it should come up with the parameters you stored in save location 0. Turn off all the trace except the purple one which is trace 3. If this is not already formatted to S11 Phase, then call up the menu and do the following -- tap back until you get to the top-level menu. Tap Display then Format S11 then tap Phase. Tap Back then if Channel is not reading S11 (REFL), Tap it to toggle it to S11. You will have a display that looks like a sawtooth. See figure 10.

The peak of each of the Sawtooth's represent a resonance point. The frequency difference between two adjacent peaks is the 1/2 wavelength frequency of this coax in free space with the end of the cable left open.

Tap on marker, then Select Marker and turn on Marker 2. Move marker 2 until it is at the top of peak 3. Tap on Marker 1 to make it active and move it to the first peak. You can do this with the stylist, the Frequency Jog control, or use the Marker search function. The difference between these two frequencies (75.924 Mhz) is one full wavelength in free space. If we divide that into 300, we get the free space length of 3.95132 meters. To obtain the velocity factor divide the physical length by the free space length. $3.048 / 3.95132 = 0.771$ or 77.1%. I have been unable to locate any data for this cable, but this velocity factor seems to be reasonable.

Cable impedance can easily be calculated if we know the cable inductance and capacitance at a 90-degree point around the Smith chart. This will equate to a 1/4 wavelength of the full wave frequency we calculated earlier. The formula for inductance is:

Where Z_0 = impedance in ohms

L = inductance in henneries

C = capacitance in farads

Disconnect any connection to the S21 port so the coax is open at one end. Turn off all the traces with the exception of the Phase and the Smith Chart. Make sure the Smith chart is displaying L/C. Run the marker to the frequency of the first peak from the left of the display. Set your stop frequency so it is greater

than the frequency of the display. In this case I set it for 20 MHz.

Figure 11 is what you should see with the cable open. Jog the frequency left or right to get the Phase angle as close to -90 degrees as possible. Make a note of the capacitance, 334 pF in this case. Short the open end of the cable and you will see the display in Figure 12. Jog the frequency to get the Phase angle as close to + 90 degrees. Make note of the inductance. 866 nH. We can now plug the numbers into our equation from above and solve for the impedance.

If your cable does not have connectors, then you will have to fabricate a small cable with a SMA on one end and the other end attached to some small, insulated alligator clips. You can do this with a small 12 – 18 inch SMA pigtail and cutting that cable in half and installing the alligator clips. Keep the exposed connection as short as possible. You will have to perform your calibration with these cables. You will need to have a 50ohm load resistor for the load part of the calibration. You can purchase a few packages of 51 ohm 5% resistors in the ¼ watt variety and test each unit you find the one that is as close to 50 ohms as possible and save that as a load resistor.

NOTE: At this stage of my writing, I had an issue with the H model where the firmware got scrambled so I have to reload that when I can get an updated copy. For the rest of this discussion, I will be using the F Model.

Finally, we are going to measure the loss through the cable. All coax cable will have some loss that is determined by the physical diameter of the cable, the dielectric, the frequency and length of the cable. This becomes quite important when dealing with long lengths of cable and higher frequencies.

To measure the cable loss, connect one end of the coax to S11 and the other to S21. Setup the VNA to display one trace and format that as LOGMAG and the CHANNEL for S21 (THRU). Set the scale for 0.5.

I set 3 markers to read the loss at frequencies along the domain. At 14.4 MHZ we have a loss of 0.13 dB for 10 feet of coax. At 52 MHz, that loss is twice at 0.26 dB and up at 130 MHz, that loss for 10 feet is now 0.47 dB. For 100 feet of cable, you can multiply each of those loss figures by a factor of 10.

As you can see, this cable is pretty lossy and I would not consider using this cable for a 100 foot run above 15 MHz. I did check this 10 foot cable at 445 MHz which is part of the 70cm UHF ham band and the loss was 1.18 dB which is a 23.8% loss in signal just in 10 feet of cable! At 100 feet, this cable would exhibit close to 12 dB of loss and that amounts to a 93% loss in signal, just in the cable.

As a comparison, I have a 25 foot length of what I believe to be RG8 and possibly another “fine” Radio Shack Tandy product as seen in Figure 14.

At 14.389 MHz, this cable has a loss of 0.26 dB. If I use the KV5R online coax calculator, it shows a loss of only 0.168dB for 25 feet of RG8. This coax does

not meet the standards for RG8. According to the data sheet for RG8, for 100 feet of coax at 150 MHz, the loss is 2.25. So, at 25 feet that loss should be approximately 0.562 dB and we can see that at 130 Mhz it is 1.14 db. Tandy was never known for their “quality” coax.

The VNA's can perform a multitude of other measurement and as the firmware is updated and improved so are the accuracy of these measurements. In the next installment, we will discuss the desktop software that can interface to the VNA, how to update the firmware, the TDR function, determining the inductance of a self-wound inductor, and adjusting a 10 meter band-pass filter I will be constructing between now and then.

Here are some useful links you can add to your library:

Absolute Beginners Guide to the nanoVNA

(https://www.ten-ten.org/NanoVNA/Absolute_Beginner_Guide_NanoVNA_v1_6.pdf)

NanoVNA Manual

(<https://www.ten-ten.org/NanoVNA/NanoVNA-manual.pdf>)

NanoVNA-F V2 Portable Vector Network Analyzer User Guide V2.0

(https://www.ten-ten.org/NanoVNA/NanoVNA-F_V2_Portable_Vector_Network_Analyzer_User_Guide_V2.0.pdf)

Desktop Software Links

Nanovna-saver Works with all nanoVNA models

(<https://www.ten-ten.org/NanoVNA/nanovna-saver.zip>)

NanoVNA-App Works with all H models and some F models

(<http://www.ten-ten.org/NanoVNA/NanoVNA-App-Setup-v1.1.209-OD18.exe>)

If you are using Linux or a Raspberry Pi, then nanovna-saver is available and there is binary built for x86 and x64

<https://github.com/NanoVNA-Saver/nanovna-saver/releases/tag/v0.6.4>

If you are a Mac user, then nanovna-saver can be installed after you install MacPorts.

Meet The Volunteers

A year-long event to find and make contact with all of the people who devote time to keep 10-10 an active organization!
The goal? Make contact with each of the following volunteers during 2025

AJ7B, Randy.....	Editor	N3GTY, Bill	Committee Member
G4BLH, Mike	Awards - GB	N5MT, Mike.....	Awards - DX
K5BKT, Peg	Committee Member	N7UQ, Chuck,	Awards - VP WAS
K5PLH, Phyllis.....	Historian	N7YG, Jeff	IT Manager
K6RDK, Dave	Data/ Membership Manager	NF0J, Dave	President, W6OI Trustee
K7CWS, Ray	Net Control	NP2MR, David.....	Committee Member
KC4HIT, Mark	Awards - Counties	NS6X, John	Committee Member
KD2NOM, Mark	Director	NZ1I, Kevin.....	Awards – WAC
KD5DE, Mel.....	Past President / Supplies Mgr	VA7GY, Garry	Committee Member
KE0MIZ, Rob.....	Awards - 1000+	V51MA, Mike	Net Control
KG5RJ, Greg.....	Committee Member	W0FLZ, Paige	Award - Mobile
KI5ELV, Thomas	Awards - VP Bars	W0HLO, Harlan.....	Net Control
KI6OY, Lee	Awards-CW	W5DJT , David	Committee Member
KJ5SZ, Hugo	General Counsel	W5SUM, Ronnie.....	Vice President / Secretary
KM4ODS, George	Director	W7WHB, Steve.....	Director
KM5EH, Marcus	Director	WA2SUH, Larry	Director
KM5FF, Ed.....	Awards-WPX	WA4KUP, Brad	Committee Member
KR7RK, Keith,	Treasurer	WB0CON, Eva	Awards – WAS
KZ3T, Dan.....	QSO Party Manager	WB6OBJ, Arnold.....	Net Control
N1API, Al	Committee Member		

RULES FOR THIS EVENT AVAILABLE AT WWW.TEN-TEN.ORG IN THE QSO PARTY HANDBOOK

THE AMATEURS CODE by Paul M. Segal, W9EEA (1928)

The Radio Amateur is:

CONSIDERATE..... never knowingly operating in such a way as to lessen the pleasure of others.

LOYAL..... offering loyalty, encouragement and support to other amateurs, local clubs and the American Radio Relay League, through which Amateur Radio in the United States is represented nationally and internationally.

PROGRESSIVE..... with knowledge abreast of science, a well built and efficient station, and operation beyond reproach.

FRIENDLY..... with slow and patient operation when requested, friendly advice and counsel to the beginner, kindly assistance, co-operation and consideration for the interests of others. These are the hallmarks of the amateur spirit.

BALANCED..... Radio is an avocation, never interfering with duties owed to family, job, school or community.

PATRIOTIC..... with station and skill always ready for service to country and community.



Silent Keys

Mark Steele, KD2NOM
(#77596)

It is with sorrow that we note the following Ten-Ten members who are now Silent Keys. We extend our sincere condolences to the families and friends of those SK members whose calls and Ten-Ten numbers will forever be kept in the records of the Ten-Ten Net.

10-10#	Call	Name - City, State
01099	W3IWG	Edward P. Hensel - Pickerington, OH
02126	N1AP	Anthony J. Penta - Medford, MA
06142	K9ZO	Ralph A. Bellas, Jr. - Stanford, IL
08198	WB4RER	Donald F. Schneiter - Louisville, KY
10073	K8GIM	Edward J. Nemecek - Lorain, OH
11764	WA5YON	Nuel C. Vandagriff - Lake Kiowa, TX
11768	WB5FWI	Charles W. Kenworthy, Jr. - San Antonio, TX
12335	K0RGR	William F. Osler - Rochester, MN
12416	WA4AGD	Gerald F. Perry - Atlanta, GA
12432	K4JYS	William A. Stewart - Smithfield, NC
14584	K6PLR	Grant H. Shorten - San Diego, CA
15924	KG0KD	Bernt G. Houghland - Richfield, MN
17355	KC7SMB	Ronald I. Ruby - Bend, OR
18145	W7HCO	Charles L. Scofield - Billings, MT
19320	W4FLA	Sherman Leifer - Boynton Beach, FL
19327	NP2B	John J. Ellis - The Villages, FL
19936	K3UIN	Ronald E. Andrzejewski - Middletown, DE
20895	K8BLL	Charles A. Robertson - Benton Harbor, MI
22359	KB9ES	Harold R. Hodges - Edelstein, IL
22625	K0HH	Edgar R. Pietzschke - Jonesburg, MO
22996	WD8ECC	Kenwood D. Elliott - Jackson, MI
23059	WD4FRC	Raymond J. Coker, Jr. - Knoxville, TN
23666	N5DBM	Kenneth A. Stepp - Edmond, OK
24893	N8ACQ	Jack Katona - Princeton, WV
25431	K1BXC	Daniel L. Burbank - Tolland, CT
25435	N2HX	Philip E. Landry - Bennington, VT
26065	K4ZHK	Alva W. Messimer - Johnson City, TN
27508	WD5ABK	Ray G. Mosteller - Albuquerque, NM
28470	WD5BJT	Charles H. Otnott, III - Gulfport, MS
28539	K8JBR	Gary L. Barnhart - Millersburg, OH
31184	K9JIG	Denis B. Christopherson, Sr. - De Pere, WI
32680	K6GFJ	Ross W. Forbes - San Jose, CA
34833	WT2TT	Thomas W. Hickey - Tampa, FL
36024	W6DJF	David J. Fuerstenberg - Vallejo, CA
37215	WJ5O	William H. Hays - Montgomery, AL
38019	KB5JJ	Arthur F. Graf - Austin, TX

10-10#	Call	Name - City, State
38657	WA1NGA	William C. Hummel - Merrimack, NH
38759	NA2R	John M. Sawina - Barnegat, NJ
40578	K2CZT	Donald B. Schultze - Palm Bay, FL
45878	VE4CW	Ross M. Elliott - Victoria, BC
46150	WD4CJQ	Jean Cook - Gilbert, SC
46953	N3GEO	William J. Erikson - Hampstead, MD
48451	AB5IQ	Doyle E. Pflueger - Paducah, KY
48682	KD5JET	Wendell D. Allen - Iowa Park, TX
48715	N0KDB	Ruth Bartholomew - Sullivan, MO
49840	N8HRZ	Charles R. Solinger - Niles, OH
51097	NF0S	Gary G. Sundquist - Williston, ND
55254	KK0M	David A. McQueen - Walnut Creek, CA
57400	AA4ZK	Samuel N. Kirkland - Petersburg, VA
59790	KC4YEA	Richard T. Kopf - Charleston, SC
60079	KB5POZ	Francis A. Stains - San Antonio, TX
62504	N7GTW	Laverne L. Anderson - Spokane, WA
62769	N2OOJ	Orrie H. Smith - Midland Park, NJ
64033	KK9DX	Corneliu M. Topala - Waynesboro, TN
64103	N6DNM	Douglas J. Mecham - Seattle, WA
65791	WA0PWS	Daniel J. Andrea - Elmont, VA
67228	KE4JSL	Jack L. Mims - Augusta, GA
68478	N1KRC	Paul R. McNulty - Westborough, MA
69682	KD4JOB	Walter N. Hunter, Jr. - Trenton, NC
70747	KB9PDF	Linda L. Albright - Centerville, IN
72842	K1MRH	Barbara A. Rice - Randolph, MA
72851	K4VET	William E. Greene - Richfield, NC
74492	W8RQE	Marvin E. Dworkin - Durango, CO
74569	W7JY	Geald L. Lillie - Eugene, OR
76330	AE7GP	Gary Pierce - Tucson, AZ
76687	NL7S	Robert J. Engberg - Wasilla, AK
77742	KG5HLB	Paul M. Smith - Baton Rouge, LA

Thanks to Lee - K2HAT - #76138 for his efforts in helping me keep the sk column as up to date as possible.

Mark 73, KD2NOM #77596

ARTICLES

If you have a Ten-Ten related adventure/experience you think would be good to share with the other members of the Ten-Ten International organization, please send your story to editor@ten-ten.org.

WOULD YOU LIKE TO JOIN 10-10?

Here is what you need:

1. You must hold a valid amateur operator license.
2. Your valid amateur operator license MUST authorize or qualify you for unsupervised transmitting operations in the ten meter amateur band under your own personal call sign.
3. You must make contact with ten members of 10-10 and submit a log listing all contacts, their 10-10 number, call sign, name/handle (as received on the air), date of contact, and QTH (state/province/country). The contact form and membership application is provided on the page that follows.
4. You must remit dues for one or more year's full membership. Fee schedule and payment information can be found in Section 2 of the page that follows.

TYPES OF MEMBERSHIPS

To become a member either fill out the form on the following page and mail to the Data Manager at the indicated address or go on-line to the 10-10 web page, www.ten-ten.org and follow the links from 'membership' to 'application' and select membership category.

Primary Membership

Primary membership is available with yearly dues, although there is a special incentive available when you pay for three years at once.

Family Membership

Family membership consists of a primary member and one or more family members who qualify as a 10-10 member (has made the necessary 10 contacts) and who reside at the same location and postal address. Family memberships run concurrently with that of the primary member. Add \$5.00 for each additional family member for each year. Only the primary member will receive a copy of the 10-10 News.

Life Membership

Life membership is available and may be paid in one lump sum or spread across two or three years. For information refer to the "Life Membership Application" form on the web or contact the 10-10 Data Manager.

Senior Life Membership

Senior life membership is available to anyone who is currently 65 years of age or older. Payment can be made as one lump sum or within a one year period. For information refer to the "Life Membership Application" form on the web or contact the 10-10 Data Manager.

Family Life Membership is no longer available

Club Membership

Club membership is available to any Amateur Radio Organization which holds a valid Amateur Radio License. Application must be made by the club trustee. Dues are the same as the Primary member. No family or life memberships are available. Clubs have all the same rights and privileges as primary members except the right to vote in elections.

Electronic Membership

Electronic Membership is available to anyone who qualifies for any of the types of membership listed previously. Electronic membership means that all communications, including the 10-10 NEWS, from 10-10 to the qualifying member will be conducted via email distribution. The exception to this policy is when a member qualifies for a certificate from either one of the various QSO Parties or from one of the Awards programs.

MEMBERSHIP RENEWALS

Either fill out on the following page the top half of Section 1, including your 10-10 number and Section 2 and mail to the Data Manager at the indicated address or go on-line to the 10-10 web page www.ten-ten.org and follow the links from 'membership' to 'renewals' and select the membership category.

DATA MANAGER SERVICES

Call/Name/Address Changes

All changes are to be sent to the 10-10 Data Manager. Please include your address label (or a copy) with necessary corrections. This also can be accomplished at www.ten-ten.org using the membership/update link.

All payments may be made by Check, or Money Order. Due to banking regulations Credit Cards cannot be accepted for merchandise. Membership Services and Scholarship Donations can be made via credit card using the secure shopping cart at www.ten-ten.org

Mail to:

**Data Manager, 10-10 International Net, Inc.
1349 Vernon Terrace
San Mateo, CA 94402-3331**

SCHOLARSHIP DONATIONS

Donations to the 10-10 Scholarship Foundation are encouraged by our members to help fund three \$2,000 10-10 Scholarships to be awarded. For donations of \$25 or more you are eligible to receive a current year's lapel pin as a thank you gift. To pay by credit card, see the payment information on our website. Your check should be made payable to the 10-10 Scholarship Foundation and sent to the Data Manager (address shown above) or the Scholarship Manager:

**Larry Berger, WA2SUH
10-10 Scholarship Manager
9 Nancy Blvd.
Merrick, NY 11566-3119**

TEN-TEN QSO PARTY RULES

5.2 10-10 QSO PARTIES

10-10 QSO Parties are events that are held for fun and to meet old, new and prospective members around the world. The rules listed here are for all general QSO parties. The Spirit of 76 and Open Season QSO Parties are specialty events and do have additional rules. The Anniversary and Meet the Volunteers are year long contact events.

5.2.1 WHO IS ELIGIBLE?

QSO Parties are open to all amateurs with operating privileges on the 10 meter band, however, logs will be accepted only from active members as of the date of the event with the following exception: Open Season event logs will be accepted from all amateurs. Other logs received will be handled as check logs. Check logs are used to validate (check) other logs, but do not qualify the sender for any awards. A QSO Party contact log submitted by an Amateur that intentionally submits erroneous contact information to cause errors on membership applications and awards will be considered an invalid log. Ten-Ten will not accept any log of contacts from an Amateur who had his or her membership/1010 number revoked.

5.2.2 WHEN ARE THE QSO PARTIES?

There are currently nine QSO Parties held throughout the calendar year:

Winter Phone - held on the first full weekend in February
0001 UTC Saturday through 2359 UTC Sunday.

Spring Digital - held on the last full weekend in April.
0001 UTC Saturday through 2359 UTC Sunday.

Spring CW - held on the first full weekend in May.
0001 UTC Saturday through 2359 UTC Sunday.

Open Season (PSK) - held on the first full weekend in June
0001 UTC Saturday through 2359 UTC Sunday.

Weak Signal - held on the second full weekend in July - 0001 UTC Saturday through 2359 UTC Sunday.

Summer Phone - held on the first full weekend in August.
0001 UTC Saturday through 2359 UTC Sunday.

Sprint - a 24 hour event held on October 10th (10-10).
0001 UTC through 2359 UTC.

Fall CW - held on the third full weekend in October.
0001 UTC Saturday through 2359 UTC Sunday.

Fall Digital - held on the second full weekend in November.
0001 UTC Saturday through 2359 UTC Sunday.

5.2.3 FREQUENCY AND MODES

Direct unassisted contacts only are permitted. Repeater, Satellite, IRLP, Echolink, or any other similar type of assisted contacts are NOT allowed. Based on the appropriate band plan for the country of operator, CW QSO Parties should be operated in the CW area of the 10-meter band and operated using CW only. Digital QSO Parties should be operated in the digital area of the 10-meter band and operated using Digital modes only (RTTY, PSK, etc). Phone QSO Parties must be operated in the PHONE area of the 10-meter band and may be operated using any approved method (SSB, FM, AM). The SPRINT utilizes all operating modes in the 10-meter band.

5.2.4 ENTRY CLASSIFICATION

Entrants may submit a log in ANY of the following classifications:

QRP: Includes single station operators and can also include OM/XYL teams or any families or groups of people using individual call signs and 10-10 numbers. CW/Digital/RTTY operations max 5 watts and Phone operations max 10 watts during the entire event.

LOW POWER: Same as QRP listed above except that output power for CW/Phone/Digital/RTTY operations is max 150 watts during the entire event.

HIGH POWER: Same as QRP listed above except that output power for CW/Phone/Digital/RTTY operations is greater than 150 watts during the event.

CLUB: A Club must have a valid club station license issued by their National Licensing Authority and must have an active 10-10 membership. Club entries must list the call, name and 10-10 number (if any) for all operators using the club call. Club operations will take place at one location using one set of equipment. Operators entering under a club entry may also enter an individual log for contacts made using their own call sign.

MOBILE: A mobile applies to car, truck, RV, motorcycle, boat, airplane or other mode of transportation. Use of a base station antenna, amplifier or commercial power is not permitted. Operation while your vehicle is parked across a county line, occupying two counties, counts as two counties and two contacts. Marine and aeronautical mobiles must be able to establish counties of operation. Safety is paramount while operating mobile. If you are unable to park near multiple county lines due to safety issues (i.e. on a bridge, on a freeway, etc.), please move to the closest area which would provide the best operating conditions and still be able to give out multiple counties. Duplicate entries are allowed when working in multiple counties. In addition to the normal log information provided the County Worked from and County worked must also be included. Mobile stations will receive awards within their own category and will not be included in the individual sections or Top Ten in the World. **Mobile entries will only be accepted for Winter & Summer Phone and 10-10 Sprint QSO Parties.**

5.2.5 TRANSMITTER INFORMATION

An operator may operate mobile, portable or fixed. If they change their exchange QTH during the QSO Party, the operator must show same in their log. The operator may enter a log from one call district, province, or DX country. Multi-transmitters (two or more transmitters operating simultaneously, sharing one call sign) are NOT permitted in any QSO Party. No matter your physical location, your QTH is the location of the transmitting antenna.

5.2.6 EXCHANGE

10-10 members send call sign, name, 10-10# and QTH (State, Province or Country). If received exchange does not have a 10-10#, then record a zero (0) in the log.

5.2.7 QSO POINTS

Two (2) points are awarded for contacts WITH a 10-10 number. One (1) point is awarded for contacts WITHOUT a 10-10 number. Duplicate entries should be retained in log and show a zero (0) for points. Any log showing 10% or more errors may be handled as a check log. A station may be counted only once regardless of mode except during certain specialty events.

5.2.8 CHAPTER SCORE ASSIGNMENT

Any entrant who is a chapter member may assign his/her score to that chapter. QSO Party chapter scores for the Sprint and Open Season may not be assigned.

TEN-TEN QSO PARTY RULES

5.2.9 QSO PARTY ENTRIES

Logs shall be forwarded to the QSO Party Manager as identified in the 10-10 NEWS or on the 10-10 web site. It is strongly suggested that logs be sent as soon as possible after the close of the event. It is also recommended that DX logs should be sent AIR Mail to insure they are received in good time. Any logs received with a postmark date AFTER the deadline date will be handled as a check log. Any logs received more than 8 days after the entry deadline, regardless of postmark, will be discarded. LOGS MAY BE SENT VIA Email to tentencontest@ten-ten.org. Q95 files are not a proper format nor are they readable, therefore, they will not be accepted.

5.2.9.1 ENTRY DESCRIPTION

Entries must contain a Cover Sheet, Log and Dupe Sheet as described here: COVER SHEET will list the Event Entered, Entry Classification, US Call Area (W0-W9 or DX Country), Chapter Score Assignment (if any), number of contacts and points with 10-10#, number of contacts and points without 10-10#, and total contacts and points claimed. LOGS must be listed in date/time order and list UTC Date, UTC Time, Call, Name, 10-10# (zero (0) if none), QTH and Contact Point Value. A DUPE SHEET is required for any logs exceeding 50 contacts. It may be either a list of all calls contacted in call sign order or hand entered on a dupe sheet grid.

5.2.9.2 ENTRY DEADLINES

Entries for all QSO Parties listed EXCEPT the Sprint shall be postmarked no later than 8 calendar days (this will always be a Monday) after the close of the event. Entries for the Sprint (held on 10/10) shall be postmarked no later than October 18th, unless that day falls on a Sunday or holiday, than the postmark deadline shall be October 19th.

5.2.10 QSO PARTY RESULTS AND AWARDS

QSO Party results will be posted on the 10-10 web site about 15 days after the closing deadline for the event and also printed in the 10-10 NEWS in the appropriate issue. Awards will be issued by the certificate manager for Top Ten Individual scorers in the World, the top individual scorer in each US Call Area (W0-W9), each DX Country, and for top QRP, LOW POWER, HIGH POWER, CLUB, MOBILE and CHAPTER. Electronic certificates will be sent to the 2nd and 3rd place scorers in these categories.

5.2.11 ANNIVERSARY and MEET THE VOLUNTEERS EVENTS

These events run from January 1 0001 UTC to December 31 2359 UTC. In the Anniversary event, entrants may submit a log of contacts with members that have the anniversary year contained in their membership number. Example: 2022 is the 60th anniversary year of 10-10 International Net, Inc. Contact with members containing a "63" in their membership number (i.e., 72063, 69635,66354, 63136, 00637) would count toward the event. Each year the anniversary number changes, making a new group of members the focus of the event and promoting the use of the 10-meter band. All general rules are applicable with the following exceptions: During the calendar year (January 1 through December 31) make legal 10-10 contacts with 10-10 Number, Date, Call Sign, QTH with members containing the anniversary year in their membership number as described above.

In the MEET THE VOLUNTEERS event, entrants may submit a log of contacts with members listed in the 10-10 NEWS as being a 10-10 volunteer. One contact per volunteer is permitted, regardless of mode of contact. In both events, contacts must be made on the 10-meter band with any legal mode (AM, SSB, FM, PSK, CW, etc.). All submitted logs

must contain only one entry for each 10-10 number contacted. Contacts MUST be listed in 10-10 number order and each entry must list the 10-10 Number, Date, Call, Name, QTH and Mode, in that order. These events are for Individual entries as described in section 5.2.4 and certificates will be awarded for the TOP Ten, however all entrants will be listed in the 10-10 NEWS.

Logs MUST be postmarked no later than January 8th of the year following both the Anniversary and Meet the Volunteers events. Only members in good standing (with dues paid) are allowed to submit logs.

5.2.12 WEAK SIGNAL QSO PARTY (WSQP)

This event was added to help promote digital activity on the ten-meter band. The event in no way affects or modifies the policies for other scheduled Ten-Ten events. All weak signal modes for this event include: FT/JT/JS8/JS8CALL and any future weak signal mode. No repeater, cross-mode or cross-band contacts allowed.

FT4 (28.180)	FT8 (28.074)
JT65 (28.076)	JS8/JS8CALL (28.078)

Entry categories: QRP – Maximum 10 watts output.

Low Power – Maximum 150 watts output.

Exchange: 10-10 members should send call sign, name, 10-10# and QTH (ST/Prov/Country). Received exchange should include normal exchange for FT/JT/JS8/JS8CALL modes and for extra points name, QTH and 10-10#. Scoring will be 1 point for contacts without a 10-10 number and three (3) points for contacts with a valid 10-10# exchange. NO MULTIPLIERS! All other normal rules apply. Logs shall be forwarded to the QSO Party Manager.

5.2.13 10-10 SPRINT (October 10) QSO PARTY

An award will be issued for working all 10 USA Call Districts.

5.2.14 W6OI SPECIAL EVENT

This event has been CANCELED.

5.2.15 FOR MORE INFORMATION

Current information about 10-10 and upcoming 10-10 QSO Parties and events are always available on the 10-10 web site. Cover sheets, logging forms and dupe sheets are also available for downloading or printing at <http://www.ten-ten.org>. Any unanswered questions regarding the QSO Party rules may be forwarded to the QSO Party Manager.

10-10 QSO PARTY COVER SHEET

QSO Party *(select one):*

- WINTER PHONE SPRING CW SPRING DIGITAL 10-10 SPRINT
 SUMMER PHONE FALL CW FALL DIGITAL WEAK SIGNAL

Contest Exchange:

Callsign: _____ Name: _____ 10-10#: _____ QTH*: _____
** if operating FROM mobile, enter number of counties operated from in QTH field - counties must show in log*

Entry Information:

Name: _____

Mailing address: _____

City: _____ Zip: _____

State/Province/County: _____

Your e-mail address *(for contest questions only)*: _____

Call Area (W0-W9) or ARRL DX Country you operated from: _____

Chapter Assignment, if any *(not valid in Sprint)*: _____

Entry Type *(check one only):*

- LOW POWER HIGH POWER QRP MOBILE
 CLUB *(if Club station, please list all operators below this line)*

Claimed Score:

Contacts WITH 10-10 number: _____ X2 = _____

Contact WITHOUT 10-10 number: _____ X1 = _____

Total Contacts: _____ Total Pts: _____

Submitting Logs:

MAILED ENTRIES: All submissions must contain this cover sheet (or reasonable facsimile), the log in UTC Date/Time order, and a dupe sheet in callsign order or in grid format (if more than 50 contacts).

Mail to Dan Morris, KZ3T, 3162 Covington Way, Lenoir NC 28654, USA

EMAILED ENTRIES: All submissions can be in most formats and must additionally include all information from this cover sheet either in separate summary or as summary at head of log. Many contest programs do this for you. Dupe sheets are **NOT** required with an e-mail entry. **Q95** formats **ARE NOT** acceptable.

EMAIL to: tentencontest@ten-ten.org.

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