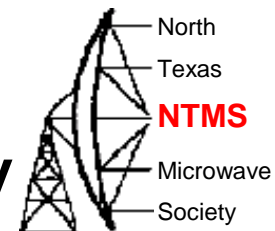


Welcome to The North Texas Microwave Society

August 3, 2019



- **Introductions**

- **Program**

ARRL 222 MHz and Up Distance Contest Aug 3rd and 4th

ARRL 10 GHz and Up Contest Aug 17th and 18th and September 21st and 22nd

W5LUA “show and tell” on 122 GHz transverter

KC4YOE – Programmable Synthesizer

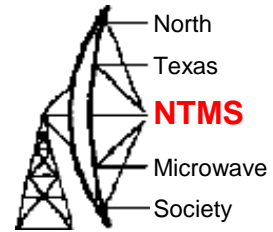
Any other “show and tell”

What projects are you working on?

Preparations for Microwave Update Oct 3rd, 4th and 5th

- **Business Meeting**

NTMS Yahoo Group



Email to w5lua@sbcglobal.net for an invite

YAHOO! GROUPS

Search Conversations Search Groups Search Web

AI 99+ Mail

A personalized news stream
Get the App

Groups Home
LP-PAN 10
TestEquipTrader 29
ntms

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Manage My Groups

Create a Group +

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Search Groups

Search Web

AI 99+ Mail

North Texas Microwave Society

Restricted Group, 15 members

Conversations Photos Files About More

About Group [+ Join Group](#)

8 messages added in the last 7 days

Group Description

Email reflector for the North Texas Microwave Society (NTMS). Dedicated to promoting activity, the state of the art in equipment design, and the exchange of ideas and technology for the amateur bands above 902MHz.

Group Website

ACTEMRA[®] tocilizumab For moderate to severe RA

WOULD HAVE. COULD HAVE. DID.
Ami asked her doctor about Actemra

CLICK HERE to learn more

Scroll for Important Safety Information

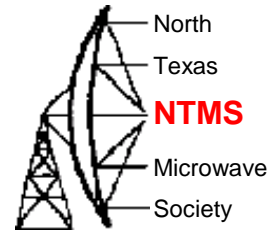
anti-inflammatory drugs (NSAIDs), corticosteroids, or methotrexate.

Tell your doctor right away if you see any of these side effects: fever, stomach-area pain that does not go away, or if you see a change in your bowel habits.

Changes in blood test results

Windows taskbar with icons for Internet Explorer, Firefox, Chrome, VLC, File Explorer, Task Manager, Skype, OneDrive, PowerPoint, and system tray.

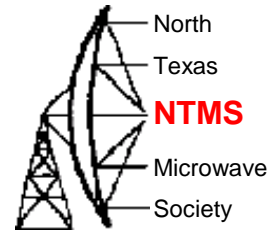
Remaining 2019 NTMS Meeting Schedule



- Church September 7th
- MUD October 4th & 5th
- Church November 2nd
- Church December 7th

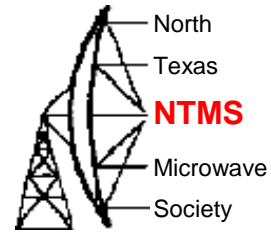
We meet at the St Barnabas
Presbyterian Church
1220 W. Beltline Rd, Richardson, TX
75080
From Noon to 4 PM

NTMS Sunday Night NET



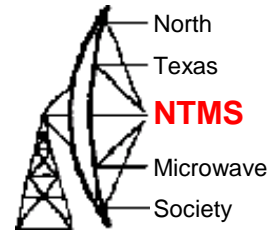
- Local to DFW gathering on 144.260 MHz USB starting at 8PM
- Generally run by Ross K5ZSJ from the Carrollton area
- Very informal

FT-8 Activity on VHF+



- 2m Activity moved to Monday nights starting at 7:30PM – Coincides with the Florida Weak Signal Group's activity period
- 144.174 MHz
- Over 25 active stations in the OK, TX, LA, AR, MS, FL, MO area
- New stations coming on every week.
- Come join the fun!
- Suggest 222.174 MHz on Tuesday and 432.174 MHz on Wednesday

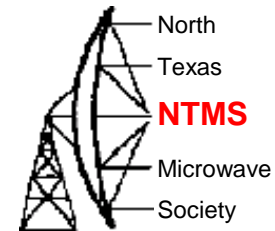
ARRL 222 MHz and Above Distance Contest



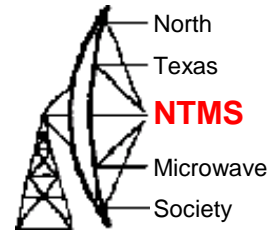
- Starts 1PM on Aug 3 and ends at 1PM on Aug 4
- Exchange calls and 6 digit grid square
- Score = Sum of QSO points of all contacts
- QSO points are based on the center to center distance in km x Band Factor
- Band Factors

222 MHz and Up Band Factors

Band	Band Factor
222 MHz	2
432 MHz	1
902 MHz	4
1296 MHz	2
2304 MHz	6
3456 MHz	10
5760 MHz	10
10368 MHz	6
24192 MHz	20
47088 MHz	20
76 GHz	20
122 GHz	20
134 GHz	20
241 GHz	20

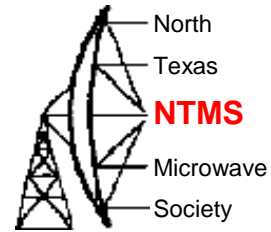


ARRL 10GHz and Up Contest



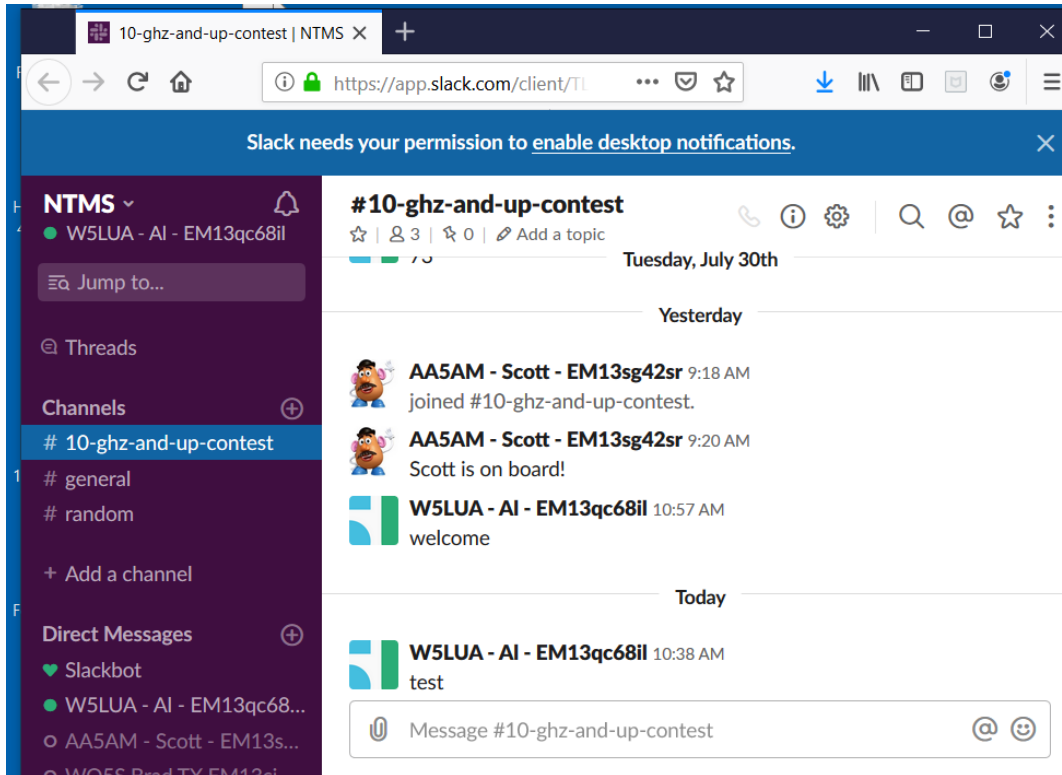
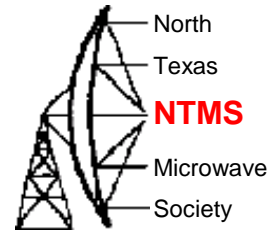
- August 17 & 18 – W5LUA, AA5C, AA5AM, WQ5S/R, W5AFY, KI5WL, WA5TKU/R, K5LLL
- September 21 & 22 - W5LUA, AA5C, AA5AM, WQ5S/R, W5AFY, K8ZR/R, KI5WL, K5LLL/R, K5ZSJ
Who else do we add to the list?
- What are your plans?

10 GHz Contest Liaison



- 144.260 MHz USB
- 900 MHz FM both simplex and repeaters
- Cell Phone has been the most popular
- Consider trying the “Slack” App to stay in touch with fellow 10 GHz operators while in the shack and out roving – Slack app is available in the AT&T Playstore - downside is that you may have to upgrade your cell phone

Join NTMS on Slack



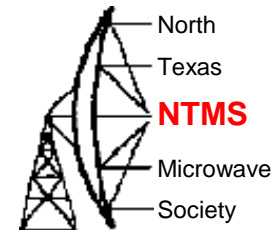
Brad WQ5S has created the new Slack Workspace NTMS. Its primary use would be to coordinate rover activities during the 10 GHz and Up contest or other operating events in the greater TX/OK/AR/LA/KS/NM area.

Apps for PC, Android and I phone

Please email Brad or myself for an invite.
 Brad southpaw1959@gmail.com
 Or AI w5lua@sbcglobal.net

VHFLOG32

<https://www.qsl.net/w3km/>



VHF LOG Setup Screen

Continue Quit Click to set offset →

Local 22:14:26
UTC Offset 0 hrs.
Local 8/1/2019

10GHz Up.lgg
2018 uhf contest.lgg
Jan2019VHF.lgg
test1-km.lgg

<Click> Enter filename
To start a new contest logfile, click here or the above label.
Select a contest, then click

Save BU: drive OFF
Bands to Work LOGSORT
Transv Offsets Use LO
Activity hours Display

No Quotes Personal Data File

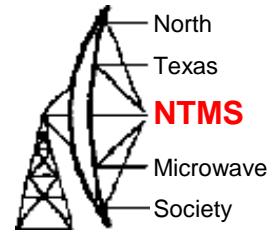
CALL W5LUA
Name Al Ward
Address 2306 Forest Grove Estates Rd
City, ST Zip Allen, TX 75002 Help
Email -

6-digit Grid EM13QC ARRL Sec. NTX
Club Affil. North Texas Microwave Society

Category-Operator NTX Category-Power HIGH
Category-Station HIGH Category-Transmitter ONE
Category-Band ONE

While logging, please use <Enter> and <Space> keys to accept data. <Tab> is only used to move fields.

Click on 10 GHz Contest



VHF LOG v4.59

File View Grids Printer Log Help CW DVK Applications Bands Options

10368	CW	09/17/18	0047	K8ZR/R	EM13qc	EM03ml	222	0
10368	CW	09/17/18	0050	WA5YWC/R	EM13qc	EM03ml	222	0
10368	PH	09/17/18	0430	K8ZR/R	EM13qc	EM13td	24	0
24000	PH	09/17/18	0443	K8ZR/R	EM13qc	EM13td	24	100
47000	PH	09/17/18	0453	K8ZR/R	EM13qc	EM13td	24	100

W5LUA 2018 ARRL 10-GHz and Up Contest File used: 10ghz up.lgg Alarm

22:15 **47000** Edit LOG Del Last QSO

Refresh Save QSO Search

Mode	Date	MHz	Call Sign	Grid	New Grid
PH	08/01	47000			

Summary CW DVK
 Partials Last Call
 Band Printer Off

Worked	Needed	Change
		10368
		24000
		47000
		Laser

by Band		
Freq	QSOs	Grids
47000	3	0

Total		
QSOs	Grids	Score
89	0	17047

Q rate Activity Hour

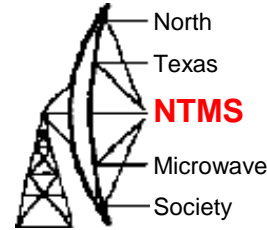
Rate Normal

Enter PLL QSO OK

DVK Status <Enter> key

IF: = MHz

Grid Square Application



SQUARES v3.4

File Print Help Please use the <Enter> key to input data

Grid Square and Distance Calculations

Your Station

Call Sign	Latitude Dec.
W5LUA	40.44
6 digit-Grid	Longitude Dec.
EM13qc	96.614

Dist/Heading between 6-digits

Start 6-digit	EM13qc
Stop 6-digit	EN51nv
Bearing (deg.)	33
Distance (Mi.)	740.1
Recip Heading	217

Distance

Miles km.

6-digit lookup

Call Sign	33	deg.
W9ZIH	740.1	(Mi.)
Recip Heading	217	deg.

Find 6-digit

Decimal	
N Latitude	40.438
W Longitude	75.208
6-digit	FN20jk

2-digit files

6-digit file

35	WA5VJB	EM121q
Add	KA5BOU	EM13rc
Delete	N4PZ	EN52gb
	N5TSP	EM00xf
	W5ZN	EM45dh
	W9ZIH	EN51nv
	N0LL/B	EM09ow

Help

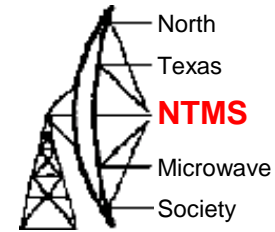
Lat/Long

2/4-digits

6-digits

Sort 6-digit

Distance between two 10 digit grid squares



- <http://www.k7fry.com/grid/?qth=MN43EH&t=s>

Find QTH locator or map square x +

www.k7fry.com/grid/?qth=MN43EH&t=s

Map Satellite

To find your QTH locator, click on your location on the map.

To find corresponding grid square, enter QTH locator here:

EM12OK31VO Show

em13qc68ll

Fill second box to approximate distance and bearing between grid squares.

Please consider donating to help keep this page active.

Donate

VISA

Latitude: 32.423264 Longitude: -96.801042
Locator: EM12OK31VO (map, sat, terrain)
Distance from EM13QC68LL - 79.359 km (49.31 mi)
Bearing - 192.8° (reverse bearing - 12.7°)
Midpoint - lat: 32.771042 lon: -96.707657

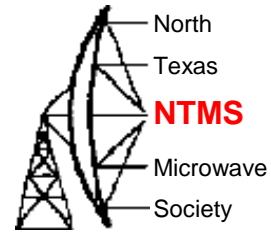
Google

Imagery ©2019 TerraMetrics Terms of Use Report a map error

Type here to search

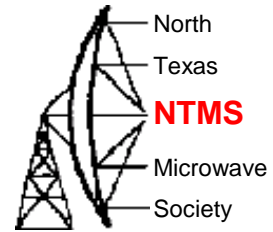
5:25 PM
8/1/2019

Android Apps



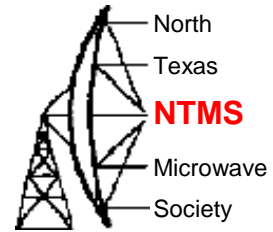
- GPS Test – provides 6 digit grid square and height ASL
- Compass – as it says
- Sun position – demo ? – provides azimuth of sun for aiming.
- Hamsquares
- Other apps?

I Phone Apps



- DBHam
- Maiden Head
- Satellite Tracker
- Others?

WA5YWC & K8ZR Sept 2018



http://k7fy.com/grid/ Find QTH locator or map s... X

Map Satellite

To find your QTH locator, click on your location on the map.

To find corresponding grid square, enter QTH locator here:

DM94UD Show

Fill second box to approximate distance and bearing between grid squares.

Please consider donating to help keep this page active.

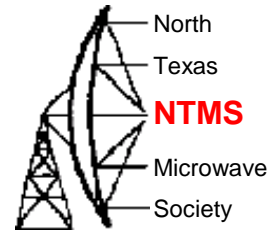
Donate

VISA, Mastercard, Discover, American Express

Map data ©2018 Google, INEGI Terms of Use Report a map error

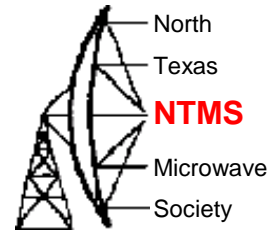
12:31 PM 11/1/2018

Show and Tell



- W5LUA 122/134/241 GHz Transverter
- KC4YOE – Programable Synthesizer
- Any others?
- What projects are you working on?

www.microwaveupdate.org



Microwave Update 2019

October 3-5, 2019, Dallas, Texas

Home

Workshops

Registration

Schedule

Proceedings

Hotel

Vendors

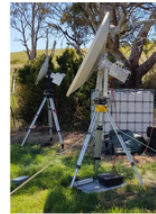
Attendees

MUD Archive

Contacts

Microwave Update 2019

Dallas, Texas
October 3-5, 2019



VK7MO EME Dishes

Microwave Update (MUD) is an international conference dedicated to microwave equipment design, construction, and operation. It is focused on, but not limited to, amateur radio on the microwave bands.

Welcome!

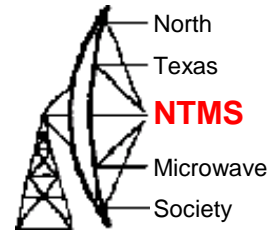
The North Texas Microwave Society would like to invite you to the annual Microwave Update Conference to be held October 3rd through the 5th 2019 at the Hilton Garden Inn and Conference Center in Lewisville (Dallas) Texas.

Microwave Update is the premier microwave conference of the year and was initially started by Don Hilliard W0PW (sk) back in 1985. This is the ideal conference to meet fellow microwave enthusiasts and share ideas and techniques that will help you conquer your next microwave band.

We have a full slate of speakers already set up including Rex Moncur VK7MO, Tony Emanuele K8ZR, Rick Fogle WA5TNY, Paul Wade W1GHZ, Joe Jurecka N5PYK, Doug Miller K6JEY, Greg McIntire AA5C, Steve Kostro N2CEI, Kent Britain WA5VJB, Bob Stricklin N5BRG, Barry Malowanchuk VE4MA, Tom Williams WA1MBA, Tom

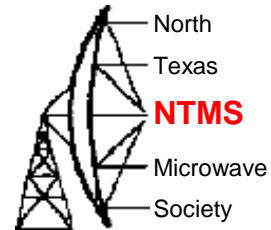
Thanks to Dave McCoy N5RIJ for setting up the MUD web site

MUD 2019 Schedule



Thursday October 3									
8AM to 3PM Surplus/Electronics Stores - On your own or in groups - meet in lobby									
2PM to 6:30PM - Registration									
3PM to 6PM - GNU Radio Workshop									
6PM to 8PM - Dinner - on your own									
8PM to Midnight - Hospitality Suite									
Friday October 4									
7:30AM Registration									
8AM to Noon - Test Equipment Workshops - Antenna range, phase noise & noise figure									
9AM - Ladies meet to discuss the day's plans including local shopping / sightseeing									
Noon to 1PM - Lunch seminar with guest speaker									
1PM to 5PM - Technical Presentations									
5PM to 7PM - Dinner - on your own									
7PM to Midnight - Fleamarkey & Hospitality Suite									
Saturday October 5									
7:30AM Registration									
8AM to Noon - Technical Presentations									
9AM - Ladies meet to discuss the day's plans including local shopping / sightseeing									
Noon to 1PM - Lunch seminar with guest speaker									
1PM to 5PM - Technical Presentations									
6PM Banquet/Prize Drawing with Dinner Speaker Rex Moncur VK7MO									
9PM to Midnight - Hospitality Suite									
Rev March 31, 2019									

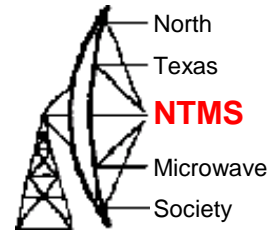
MUD Speaker List



Name	Call	Time	Title
Bob Striklin	N5BRG		A method to build your own Waveguide to Coax Transition
Kent Britain	WA5VJB		Advanced Yagi Techniques
Rex Moncur	VK7MO	Banquet	Small Dish Portable EME
Rex Moncur	VK7MO		10 and 24 GHz Terrestrial DX
Tony Emanuele	K8ZR		The microwave & millimeter wave bands and the regulatory challenges ahead
Rick Fogle	WA5TNY		Using the Texas Instruments LMX2594 synthesizer for microwave local oscillators
Brian Hendryx			A coaxial waveguide dual band feed for S and X band
Paul Wade	W1GHZ		Waveguide cross-guide directional couplers
Joe Jurecka	N5PYK		Case studies in microwave propagation by a NWS meteorologist
Doug Millar	K6JEY		Using Ku Band LNBS on 10GHz
Greg McIntire	AA5C		VHF/UHF/Microwave High-Power LDMOS Power Amplifiers
Steve Kostro	N2CEI		Recent advances in new low power mw technology
Barry Malowanchuk	VE4MA	Sat Lunch	mmWave Fun in the Arizona Sun / Assembling modules with beam lead or flip chip diodes
Tom Williams	WA1MBA	Friday Lunch	Rain Scatter
Tom Apel	K5TRA		Impedance matching techniques for RF and microwave circuit design
Tom McDermott	N5EG		GNU Radio Workshop
Dave Robinson	WW2R		Practical applications of the Lime SDR mini
Skip Macaulay	VE6BGT		6 cm Feed Experiments
Ben Lowe	K4QF		Rambo Roving for Microwaves
Al Ward	W5LUA		Flyswatter Experiments at 47 and 78 GHz
Warren Ferber	WF0T		Adventures at 630-850 nm

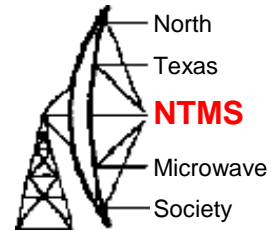
MUD 2019

GNU Radio Workshop



- Workshop focused on GNU Radio Planned for Thursday 10/3/19 3 PM till 6 PM
 - Installing GNU Radio on Windows 10
 - Learning how to use the tool
 - Radio exercises to provide hands-on experience
 - SDR theory and implementation in action
- Instructor/Presenter will be Tom McDermott N5EG
- Great opportunity to learn and see the software and hardware working together.

Family Activities



Ladies, in keeping with tradition we are trying not to plan too much till you get to Texas. Plan on meeting in the hotel conference area Friday and Saturday mornings to discuss where our outings will take us. Here are a couple of ideas.

On Friday at 9:30 a.m. we will meet in the conference area. We will travel to historic downtown Denton – The Square. There are many shops, antique stores and eateries around the square. There are several museums within walking distance from the square. There are two historic homes you can tour in the Historical Park and at least three museums all of these are free to tour. There is a possibility of riding the A-train to Denton; I am still gathering information on the train system.

On Saturday at 9:30 a.m. we will meet in the conference area. We will travel to historic downtown Grapevine. There you will find boutiques, antique stores and an eclectic variety of shops to visit. At lunch time, we could gather at one of the many eateries or go our own way to the wide variety of eating opportunities. There are also several wine tasting rooms where you can try some of our local wines before buying some to take home. You could also go to Grapevine Mills Mall. We will return to the hotel in the early afternoon to rest and get beautiful for the evening banquet.

These are just ideas. I will be glad to help everyone get to where they want to go. In case you get back early or just want to hang out in the hotel, we will have our hospitality suite available during the daytime for women to just kick back and get comfortable.

When registering, please indicate whether you will join us on either or both days. Please let us know if you can supply transportation for an extra person or two on the registration form. Please feel free to email me if you have a specific place you want to go so I can gather information to help you get there.

Looking forward to seeing you in October.

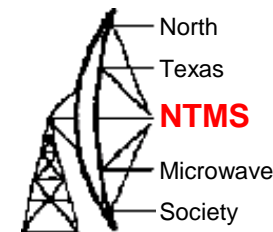
If you have any questions in the meantime, please give me a call at 972-542-3165 or you can email me at blingmama@sbcglobal.net.

Thanks

Emily Ward

Central States VHF Society
 Lincoln, Nebraska
 July 26, 2019
 Testing by: ADCX and W5LUA
 Equipment supplied by Keysite, ADCX and W5LUA
 HP8970B / HP8971C / HP83752A and HP346A used on 10368 MHz
 Agilent N8973A and N4000A used on 1296/1400 MHz
 Keysight MXA N9020B and N4000A 50 through 902 MHz and 2304 through 5760 MHz
 Measurement Accuracy +/- 0.2 dB at 10 GHz and below
 Compiled by WB0NRV AND W5LUA

Noise Figure



Central States VHF Society
 Lincoln, Nebraska
 July 26, 2019

Testing by: ADCX and W5LUA

Equipment supplied by Keysite, ADCX and W5LUA

HP8970B / HP8971C / HP83752A and HP346A used on 10368 MHz

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Keysight MXA N9020B and N4000A 50 through 902 MHz and 2304 through 5760 MHz

Measurement Accuracy +/- 0.2 dB at 10 GHz and below

Compiled by WB0NRV AND W5LUA

Band	Call	Design	Device	Noise Figure dB	Gain dB	
50 MHz	AAOL	HB	HB	0.66	15.4	
	K0DSP	DEM	PHEMT FPD750	1.53	10.8	
144 MHz	W5LUA	WDSAGO	ATF-33143	0.16	24.1	
	K0DSP	ARR	MGF1402	1.38	19.4	
	K0DSP	DEM	PHEMT FPD750	1.53	10.8	
	K0JY	JANEL	DUAL GATE MOSFET	1.71	20.4	
	K0DSP	DEM	PHEMT FPD750	1.85	19.0	
222 MHz	N4PZ	HB	DEMI	0.45	20.8	
	WD9HBF	TRANSVERTER	DEMI	0.93	15.2	
432 MHz	K0DSP	DEM	PHEMT FPD750	0.57	17.5	
	K4SME	DEM	FPD750 w / TR Relays	0.62	16.4	
	N4PZ	DEM	DEMI	0.64	18.5	
	K0DSP	DEM	PHEMT FPD750	0.71	14.6	
	AAOL	HB	DEMI	0.76	16.8	
	K0DSP	PAULDON	MGF1402	0.85	13.3	
902 MHz	KF8QL	WA2CDO	Dual Stage	0.21	38.0	
	K6LM	HB	ATF-54143	0.51	18.8	
1296 MHz	KL6M	HB	MGF4919	0.28	36.1	
	N4PZ	WDSAGO	WDSAGO	0.3	38.0	
	WB0DBS	G4DDK KIT	G4DDK	0.33	37.6	
	W5LUA	WDSAGO	WDSAGO	0.37	32.9	
	KL7IZW	G4DDK	VLNA2 MGF4919	0.4	31.8	
	K0DSP	DEM 23ULNA	ATF36077	0.41	29.1	
	KL7IZW	G4DDK-VLNA2	MGF4919	0.45	28.3	
	AAOL	WDSAGO		0.45	32.0	
	W5LUA	DEM	L1296LNAH	0.68	34.1	
	W5LUA	DEM	DEM	0.71	19.0	
	KF8QL	DEM	ATF10736	0.72	6.8	
	WB0DBS	HB	SPF50432	0.74	15.7	
	K0DSP	DEM	PHEMT TOP3M8037	0.75	14.7	
	K0DSP	DEM	PHEMT TOP3M8037	0.79	14.5	
	KL7IZW	G4DDK-VLNA2	MGF4919	1.02	33.0	
	1420 MHz	KL7IZW	G4DDK-VLNA2	MGF4919	0.39	32.0
		AAOL	WDSAGO		0.44	31.7
KL7IZW		G4DDK-VLNA2	MGF4919	0.45	28.3	
KL7IZW		G4DDK-VLNA2	MGF4919	0.63	33.0	
KL7IZW		G4DDK	VLNA2 MGF4919	0.82	26.2	
2304 MHz	K6MG	G4DDK	G4DDK wRY	0.38	28.1	
	K0DSP	HB	DEM ATF36077	0.39	18.4	
	N4PZ	WDSAGO	WDSAGO	0.43	28.5	
	WB2BYP	WDSAGO	WDSAGO	0.45	28.7	
3400 MHz	KL6M	HB	ATF-36077	0.42	14.4	
	KL6M	HB	NE334501	0.42	15.1	
	KL6M	HB	ATF-36077 China	0.53	11.7	
5760 MHz	KL6M	HB	MGF4919	0.53	12.3	
	W5LUA	DEM 5ULNA	NE3210S01	0.63	14.0	
	KL6M	HB	NE3210S01	0.72	16.2	
	KL6M	HB	CE3512K2	0.74	16.6	
	K0DSP	DEM 5ULNA	ATF36077	0.87	12.0	
10368 MHz	K4SME	DEM L3-2ULNA	CE3512K2	0.64	23.0	
	W5LUA	PE1RKJ	UNKNOWN	0.69	28.9	
	WB2BYP	PE1RKJ	UNKNOWN	0.7	28.9	



Hardware Software Services & Support Industries & Technologies About Keysight

Home > Products > ... > X-Series Signal Analyzers > N9020B MXA Signal Analyzer, Multi-touch, 10 Hz to 50 GHz > Technical Support

Technical Support

N9020B MXA Signal Analyzer, Multi-touch, 10 Hz to 50 GHz

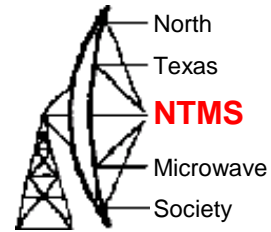


View Product Details

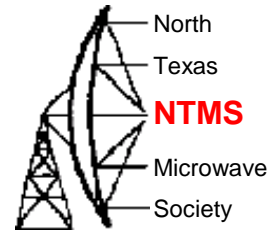
Current Firmware/Software
 Version: A.23.13
 Release Date: 2019-05-02

MUD Committee

- Hotel Liaison - N5BRG & W5LUA
- Antenna Gain Measuring - WA5VJB
- Noise Figure - W5LUA
- Phase Noise Testing - AF8Z & KC4YOE
- Registration – WA5JAT, K5ZSJ
- Treasurer - WA5TKU
- Web Page - N5RIJ
- Proceedings - WA5VJB
- Digital Copies – WA5JAT
- Audio/Visual – N5BRG, WY6K
- Photographer – W5RLG
- Prize Table – KC4YOE
- Publicity - Everyone
- Surplus Tours – WA5VJB & others?
- Family Program – Emily Ward, Bob & Al
- Transportation to/from DFW – N5BRG and others
- Vendor Tables – W5LUA

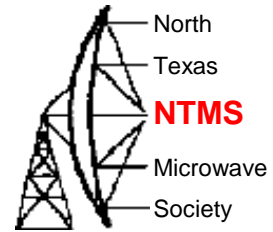


MUD Discussion



- Registration is now on line
- Promote MUD
- Detail Schedule
- Transportation to/from DFW
- Transportation/drivers for Family Activities
- Organize Vendor tables
- Prizes
- Audio/Visual
- Test Equipment
- Other areas of discussion?

Business Meeting



- Old Business
- New Business
- Let's Play Contest
- Adjourn
- Next Meeting – September 7th