



# RSP family of Full Featured Wideband SDR Receivers



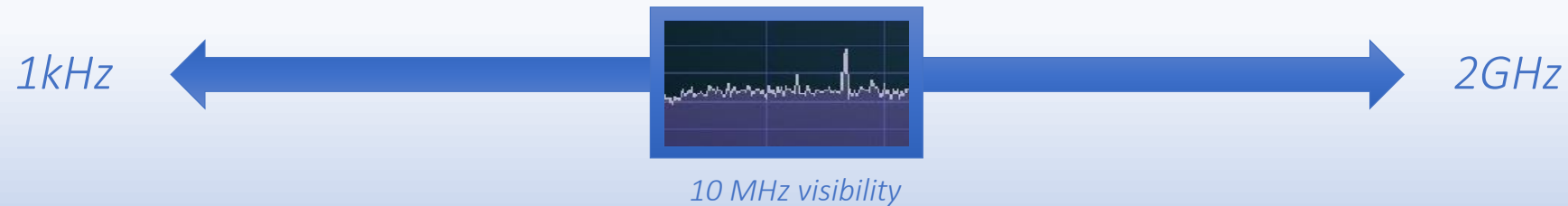
## *What is an SDR?*

A radio communication system where components that have been traditionally implemented in hardware...

(e.g. mixers, filters, amplifiers, modulators/  
demodulators, detectors, etc.)

...are implemented by software on a PC or embedded system.

# RSP1A



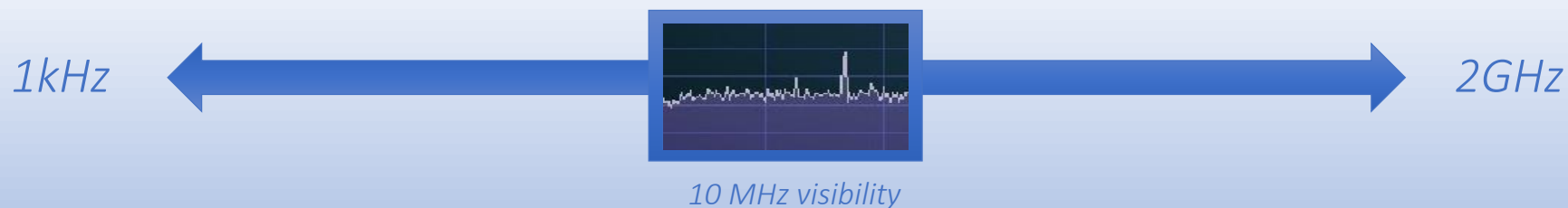
- Entry-level, single antenna SDR receiver
- 1kHz – 2GHz coverage with up to 10MHz spectrum visibility
- All round functionality with single antenna port
- Includes free SDRUno software for Windows



**RSP2**



**RSP2pro**



- 1kHz – 2GHz coverage with up to 10MHz spectrum visibility
- 3 software selectable antenna ports (2 x 50Ω plus High Z)
- External clock input for GPS accuracy
- Ability to synchronise multiple RSPs
- Includes free SDRUno software for Windows
- RSP2pro has a rugged black painted steel case

***SDR Receivers***

# RSPduo



- 1kHz – 2GHz coverage with up to 10MHz spectrum visibility or...
- 2 independent tuners giving 2MHz visibility anywhere from 1kHz to 2GHz
- Simultaneous processing from 2 antennas enables new direction finding, diversity and noise reduction applications
- 2 x Phase and Time synchronous IQ streams out
- Includes free SDRuno software for Windows
- Additional filters



## *Quotes from eHam.net reviewers:*

"This was probably the best £100 I have spent on radio kit (RSP1A)."

"The wide coverage 10kHz to 2Ghz gives you a lot of scope to do new (well, new to me) stuff - amateur satellites, WXsat images, low band working. Using the VB virtual audio cable you can feed the appropriate decoding software very easily. "

"I recently added the RSPduo and SDRuno to my arsenal of DX chasing tools and I'm so glad I did."

"It works pretty good on MF/LF, I am copying WSPR stations across Europe on 472kHz even in summer, lots of NAVTEX on 518kHz, it gets excellent copy on Region 1 LW broadcast stations, pretty good on MW broadcast too. The built in filters work well."

"Very impressed with what it will hear with this antenna set up. The box is tiny and makes for a tidy shack compared to a bank of different receivers."

"I found set up extremely straightforward - the SDRplay website gave me everything I needed"

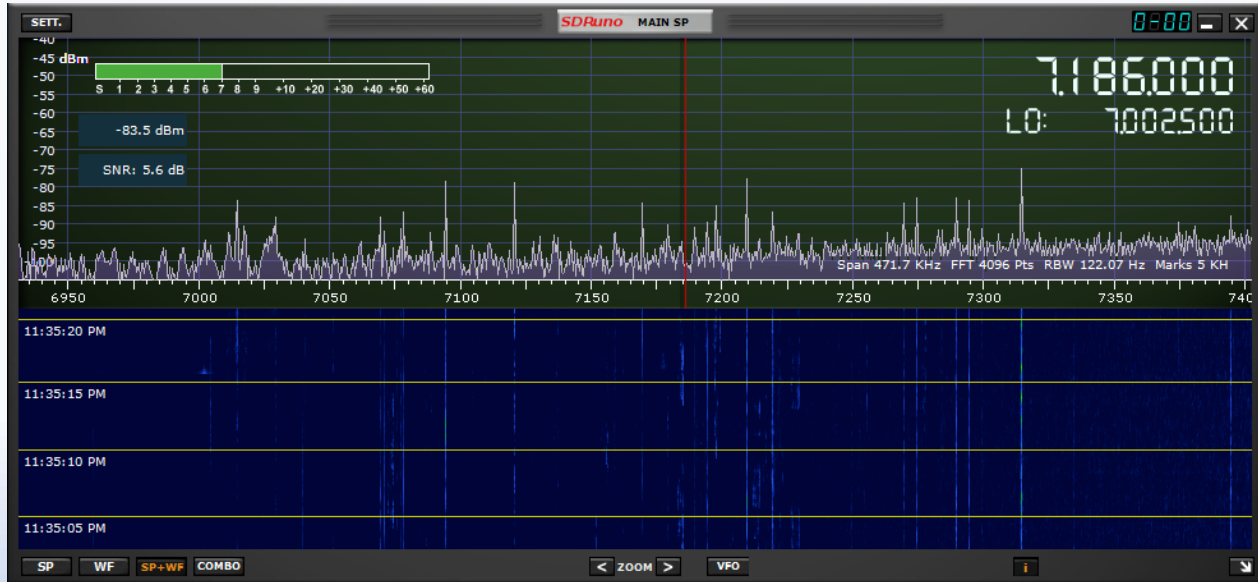
"The performance of this receiver is simply incredible! I also have the RSP1A and the RSP2pro, and just added the RSPduo to my collection of receivers. The RSPduo has the best of everything; 2 independent receivers, 14-bit ADC, heavy duty robust metal enclosure to protect the SDR and help shield RFI, and three software selectable antenna ports! For the price, the performance and flexibility of this SDR is off the charts. Unbelievable sensitivity and the ability to control all parameters and dial in reception is amazing. And I do mean unbelievable sensitivity! I have owned many, many great receivers, and this small box will stand toe to toe with the best of them. And as a bonus, you have two independent receivers in one small box! Amazing, just amazing."



***SDR Receivers***



# What is a Panadapter?



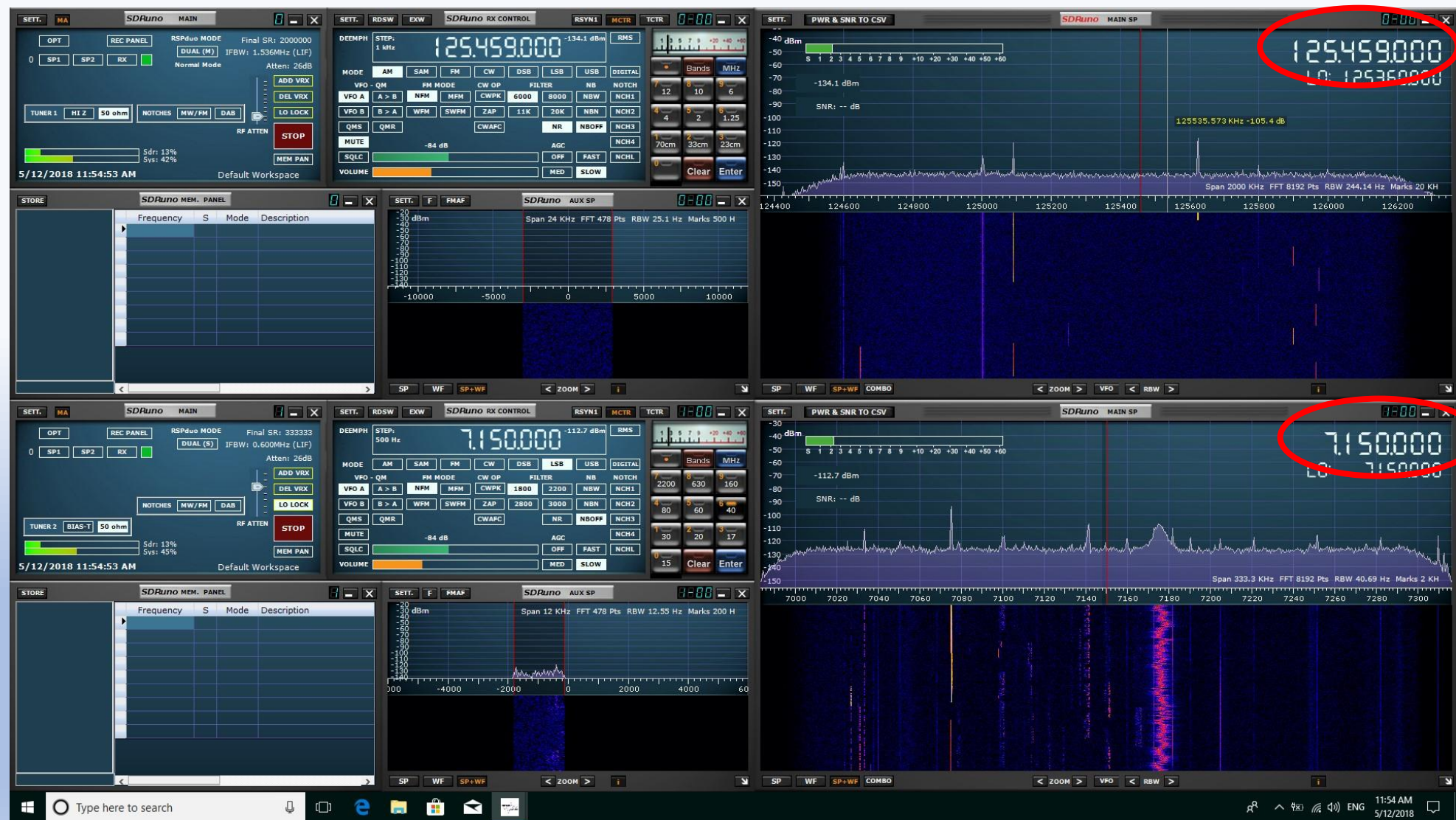
*“Go-to” choice for Kenwood,  
Yaesu, Icom, Elecraft etc!*

- “Panadapter is short for Panoramic Adapter. The simple answer is that it allows us to see a panoramic display of the band our radio is tuned to. We can see every signal”\*.
- Early implementations used a PC soundcard to achieve this function but were therefore limited to 200 kHz of bandwidth because they rely on the sound card.
- The advent of affordable SDR hardware such as the RSP1A has allowed implementations with much greater bandwidth, and hence much more usefulness.
- Combined with readily available, and capable, SDR software Panadapters are now an affordable and easy to implement reality!

\* Definition courtesy KA9MOT <http://mypanadapter.com/>



## *RSPduo & SDRUno - Monitoring 2 widely spaced bands, simultaneously*







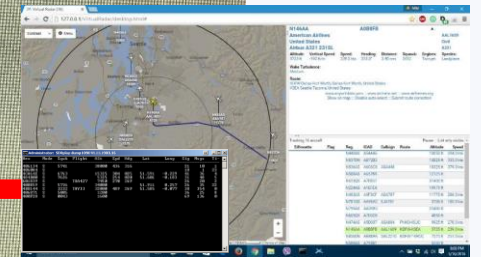
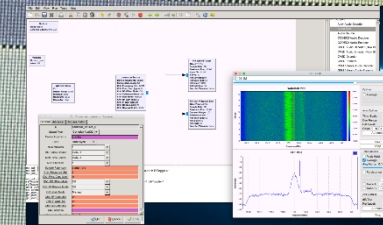
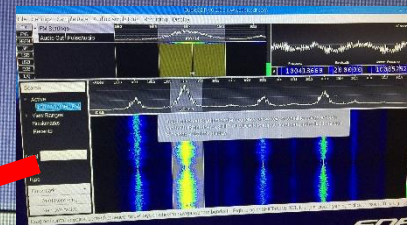
**Downloadable SD Card image for RPi3  
& SDRplay**





Select application to run

01. USER GUIDE - IMPORTANT INFORMATION (PDF)
02. SoapySDRUtil (test RSP connection)
03. SoapyRemote
04. CubicSDR
05. Gnu Radio
06. GQRX
07. ADS-B (Interactive & Network)
08. QT-DAB DAB Receiver
09. TCP Server - f4fhh
10. SoapySDR website - pothosware
11. CubicSDR website - Charles J Cliffe
12. QT-DAB website - Jan Van Katwijk
13. Gnu Radio website
14. GQRX website - Alex Csete
15. TCP Server Github - f4fhh
16. RSP1 Datasheet (PDF)
17. RSP1A Datasheet (PDF)
18. RSP2 Datasheet (PDF)
19. RSPduo Datasheet (PDF)
20. API Specification (PDF)
21. ADS-B User Guide (PDF)
22. SDRplay website
23. Exit



- Mellow Magic
- JACK 3 (UK)
- ✓ Virgin Radio
- ✓ ForcesRadio BFBS
- ✓ talkRADIO

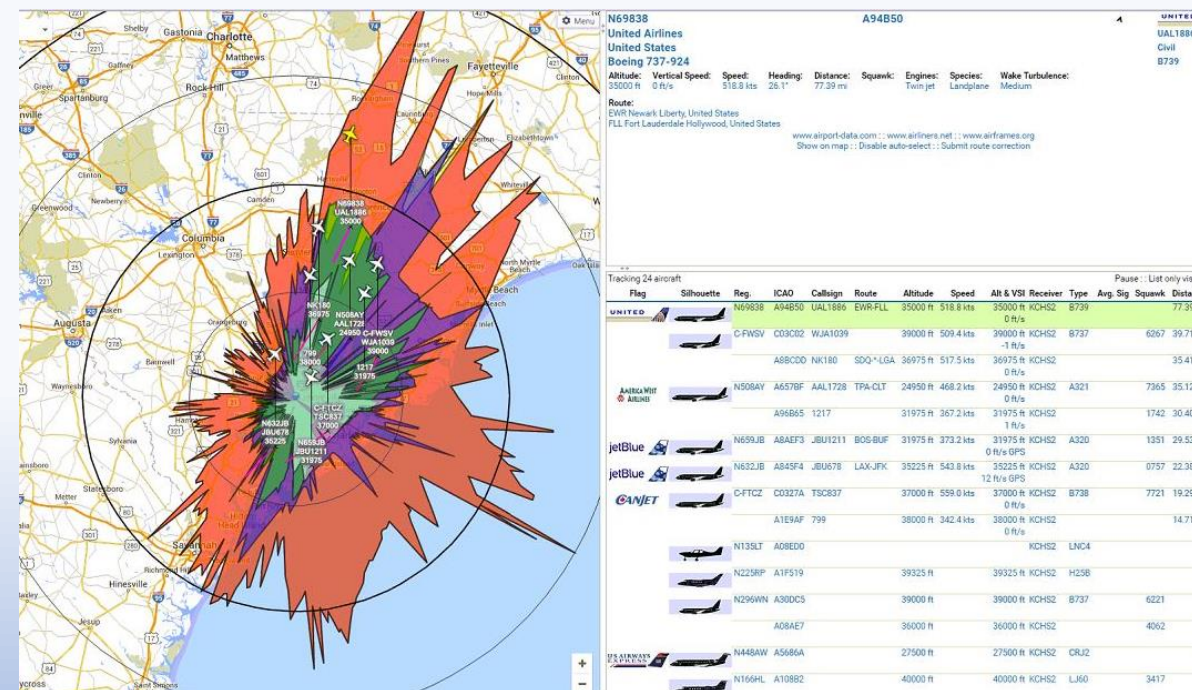
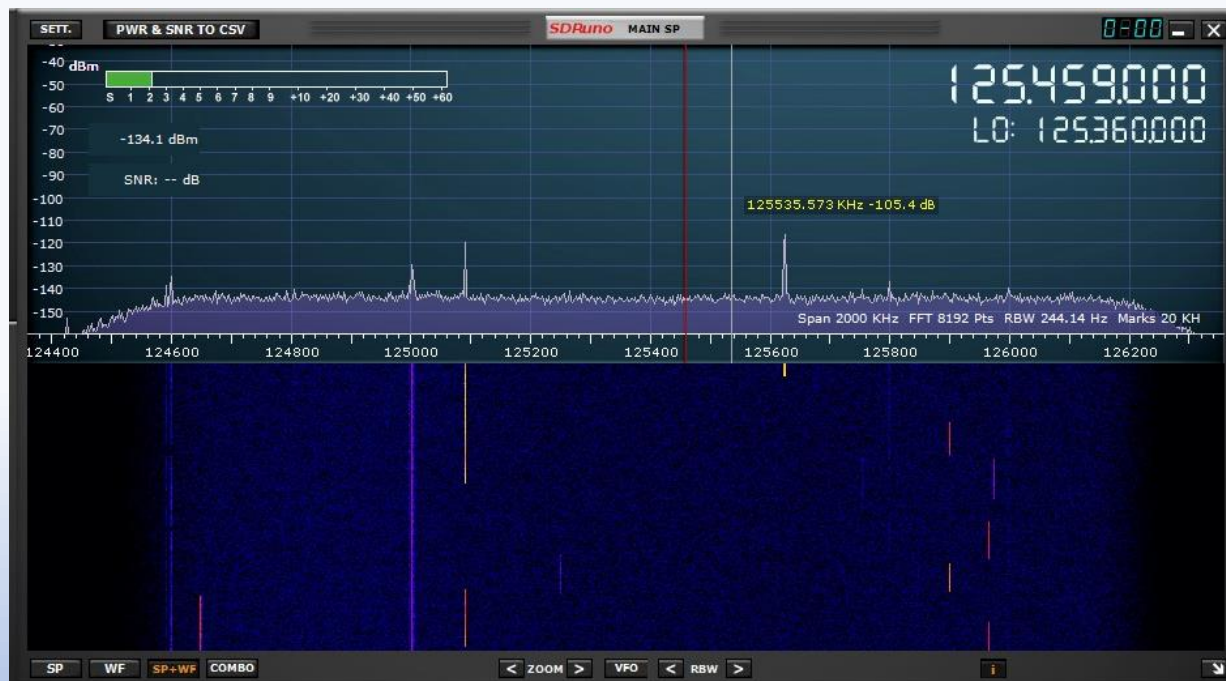


**SDRplay**





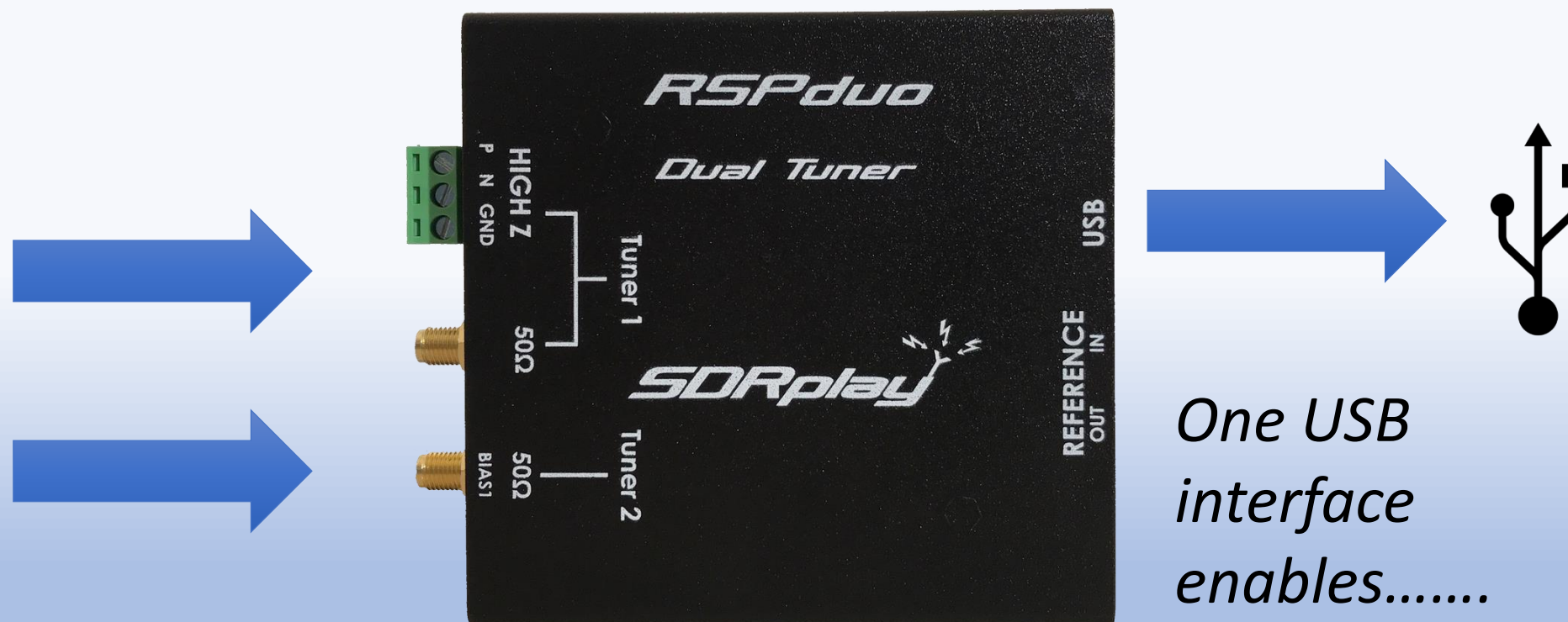
## *RSPduo – mix and match applications simultaneously*



ATC

ADSB

*RSPduo – 2 simultaneous tuners – locked in phase and time*



*Diversity Demodulation: Spatial, Frequency and Polarisation*

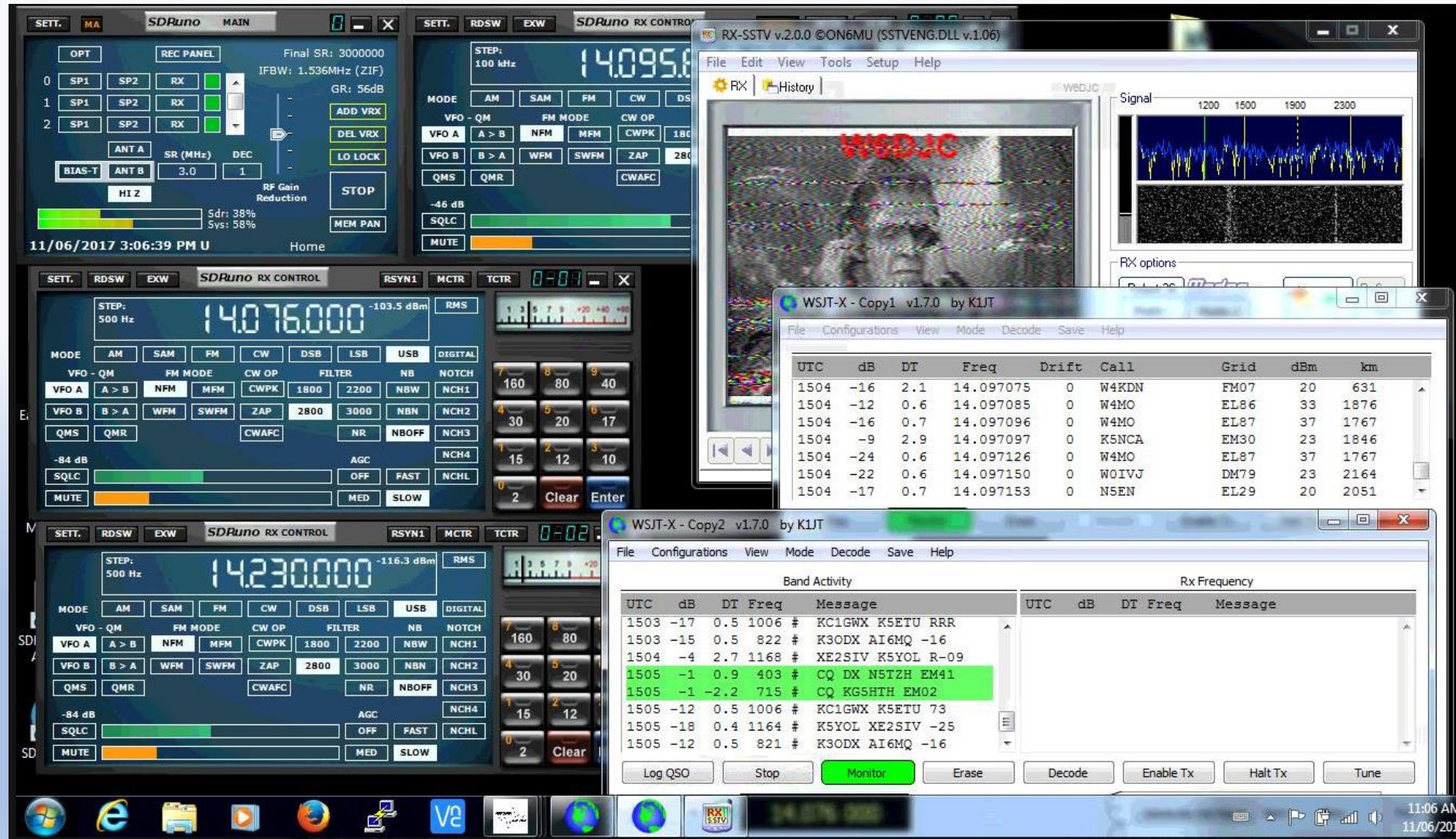




# RSP family of Full Featured Wideband SDR Receivers



## SDRuno: multiple VFOs and applications



The screenshot displays the SDRplay SDRUno software interface, which is designed for managing multiple Virtual Frequency Oscillators (VFOs) and running various applications simultaneously.

**SDRuno MAIN Panel:** This panel shows the main controls for the SDR receiver. It includes a frequency display (14.0958 MHz), a mode selector (AM, SAM, FM, CW, DSB, LSB, USB, DIGITAL), and a filter bandwidth selector (1800, 2200, 3000, 3600 Hz). The interface also features a signal strength meter (Sdr: 38%, Sys: 58%) and a time display (11/06/2017 3:06:39 PM U).

**SDRuno RX CONTROL Panel:** This panel provides detailed control for the receiver's settings. It includes a frequency display (14.076000 MHz), a mode selector (AM, SAM, FM, CW, DSB, LSB, USB, DIGITAL), and a filter bandwidth selector (1800, 2200, 3000, 3600 Hz). The interface also features a signal strength meter (Sdr: 38%, Sys: 58%) and a time display (11/06/2017 3:06:39 PM U).

**WSJT-X - Copy1 v1.7.0 by K1JT:** This window displays a waterfall plot of the received signal. The plot shows a clear signal at 14.097075 MHz, which is identified as W4KDN. The interface also includes a table of signal data:

UTC	dB	DT	Freq	Drift	Call	Grid	dBm	km
1504	-16	2.1	14.097075	0	W4KDN	FM07	20	631
1504	-12	0.6	14.097085	0	W4MO	EL86	33	1876
1504	-16	0.7	14.097096	0	W4MO	EL87	37	1767
1504	-9	2.9	14.097097	0	K5NCA	EM30	23	1846
1504	-24	0.6	14.097126	0	W4MO	EL87	37	1767
1504	-22	0.6	14.097150	0	W0IVJ	DM79	23	2164
1504	-17	0.7	14.097153	0	N5EN	EL29	20	2051

**WSJT-X - Copy2 v1.7.0 by K1JT:** This window displays a table of band activity and a table of RX frequency data.

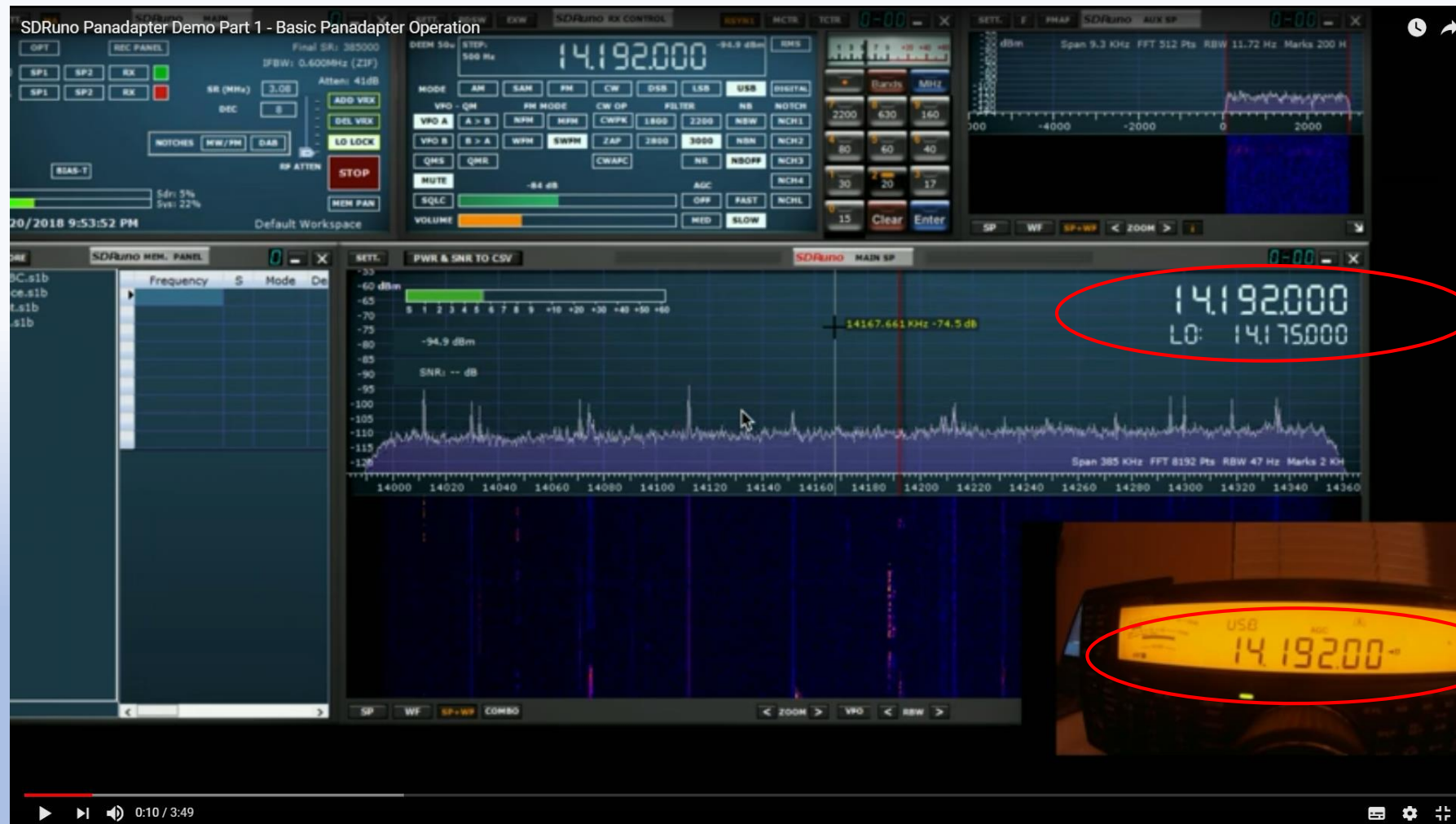
Band Activity						Rx Frequency				
UTC	dB	DT	Freq	Message		UTC	dB	DT	Freq	Message
1503	-17	0.5	1006	#	KC1GWX K5ETU RRR					
1503	-15	0.5	822	#	K3ODX AI6MQ -16					
1504	-4	2.7	1168	#	XE2SIV K5YOL R-09					
1505	-1	0.9	403	#	CQ DX N5T2H EM41					
1505	-1	-2.2	715	#	CQ KGSHTH EM02					
1505	-12	0.5	1006	#	KC1GWX K5ETU 73					
1505	-18	0.4	1164	#	K5YOL XE2SIV -25					
1505	-12	0.5	821	#	K3ODX AI6MQ -16					

The interface also includes a taskbar at the bottom with various application icons and a system clock showing 11:06 AM on 11/06/2017.





*Visualise entire amateur bands as a stand-alone receiver or as a panadapter*



## *GOES Satellite Reception (1.7GHz):*



USA SATCOM  
@usa\_satcom

Following

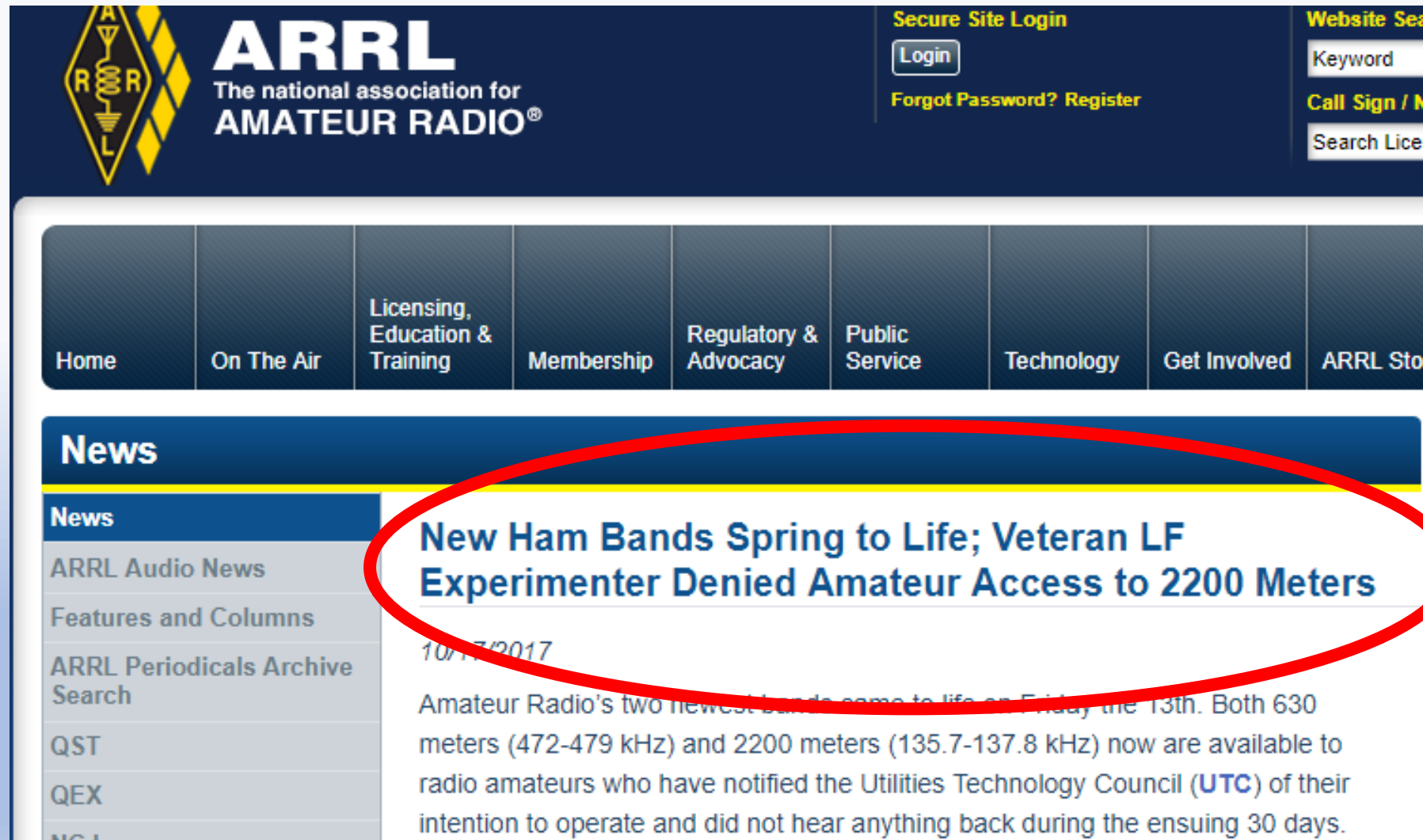
Nice marble today from GOES-17 HRIT.  
Working with an [@SDRPlay](#) RSPduo today.



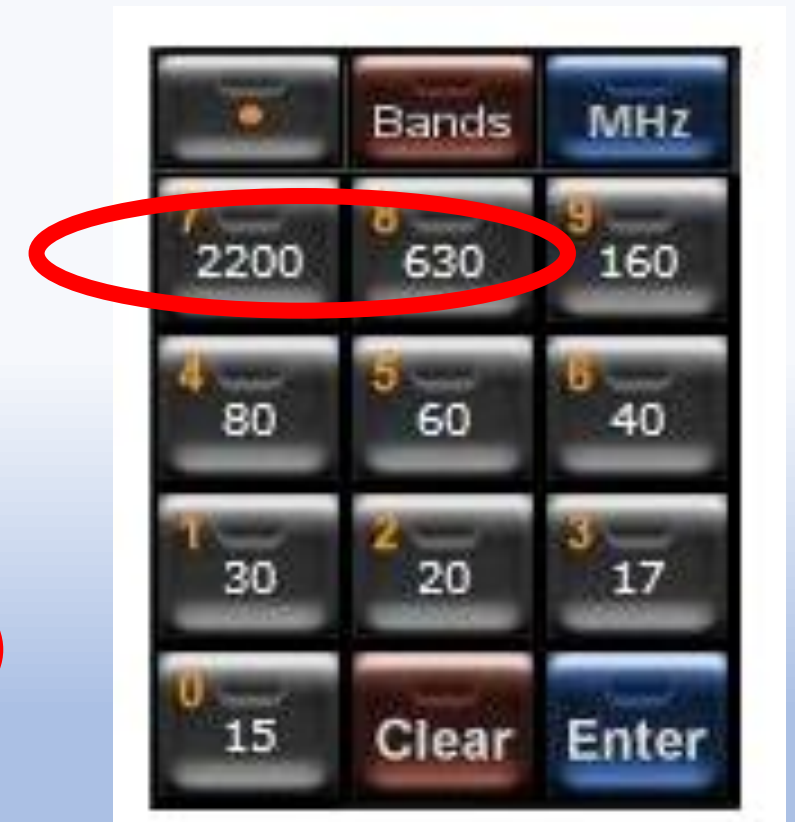
7:29 PM - 22 Sep 2018



## Explore new VLF bands

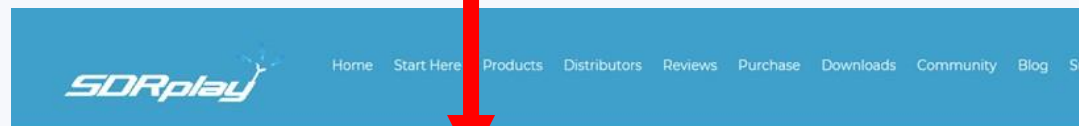


The screenshot shows the ARRL (American Radio Relay League) website. The header includes the ARRL logo and the text "The national association for AMATEUR RADIO®". Navigation links include Home, On The Air, Licensing, Education & Training, Membership, Regulatory & Advocacy, Public Service, Technology, Get Involved, and ARRL Store. A "News" section is highlighted with a red oval, containing the article "New Ham Bands Spring to Life; Veteran LF Experimenter Denied Amateur Access to 2200 Meters" dated 10/17/2017. The article text states: "Amateur Radio's two newest bands came to life on Friday the 13th. Both 630 meters (472-479 kHz) and 2200 meters (135.7-137.8 kHz) now are available to radio amateurs who have notified the Utilities Technology Council (UTC) of their intention to operate and did not hear anything back during the ensuing 30 days."





# Applications and Video guides: YouTube channel & Searchable catalogue



## APPLICATIONS AND SUPPORT CATALOGUE

The SDRplay Applications and Support Catalogue is your reference point for numerous Application Notes, Application Briefs, and more. You can browse through the entire list, or use the category drop-down to home in on your area of interest. Or you can just look for keyword corresponding icon for the YouTube Video or the PDF document. For more detailed information on each item, click or tap the corresponding icon

RSP hardware			enter word or phrase to search on	Sort by
Description	click for more details		Created	
AV001	Basic Introduction to SDR & RSP1A		05-Jun-2018	
AB006	Basic Troubleshooting the RSP		20-Jul-2018	
AN005	Setting up a panadapter		11-Oct-2017	
AV017	More Panadapter Tips & Tricks		07-Sep-2018	
AB005	Omnirig and Kenwood communications issues		19-Jun-2018	
AN008	Using HRD with SDRuno		15-Mar-2018	
WP003	Optimising RSP1A Performance below 60MHz		15-Mar-2018	
AV019	Pre-selection filters of the RSP1 and RSP2		05-Aug-2017	
AN003	RSP2 Reference Clock Usage		08-Dec-2016	
AN002	Connection to the Hi-Z port		01-Dec-2016	



SDRplay Software Defined Radio Receiver

4,967 subscribers

CUSTOMISE CHANNEL

CREATOR STUDIO

### SDRplay reviews and demos

Here you will find lots of Reviews and demos of RSPs in use with SDRuno and 3rd party software - SDRplay continues to work with other software authors to update and improve functionality on



### SDRuno Video Guides

These are SDRuno video guides for the SDRplay RSP family. The "SDRuno USER GUIDE" can be downloaded from <http://www.sdrplay.com/downloads/> (under the "DOCUMENTATION" tab) For a



### Guides to using 3rd Part s/w (SDR-Console, HDSDR, CubicSDR etc.) with the RSP







Community Support:  
Facebook Group (9000+ members)  
& SDRplay forum (4500+ members)

**phpBB® SDRplay Community Forum**  
This forum is for the community to share information. For support go to <http://www.sdrplay.com/support>

Quick links: FAQ Register Login

Board index

It is currently Mon Sep 24, 2018 2:38 pm

FORUM	TOPICS	POSTS	LAST POST
<b>General</b> General discussions	689	3232	<b>Re: ASSESSING THE PERFORMANCE...</b> by glovisol Sun Sep 23, 2018 7:05 pm
<b>SDRplay News</b> We will publish news items here and other useful information	193	219	<b>Recording and Playback using ...</b> by jon Mon Sep 24, 2018 8:35 am
<b>SDRplay related</b> Post information or questions regarding SDRplay products here	485	2253	<b>Re: zinwell sup2400 down conv...</b> by Fractal1 Mon Sep 24, 2018 5:47 am
<b>SDRuno</b> Discussions about everything to do with SDRuno	514	1970	<b>Themes/Graphics overwork of S...</b> by H2O-KO Mon Sep 24, 2018 1:26 pm
<b>SDR Antennas</b> Useful information regarding antennas for SDR products.	107	613	<b>Mike demos the use of mag loo...</b> by jon Thu Sep 20, 2018 2:22 pm
<b>Code Corner</b> Add useful snippets of code or links to entire SDR projects.	108	627	<b>Re: SDRPlay server?</b> by Toontje Sun Sep 09, 2018 12:14 pm
<b>New Users' experiences</b> Post your feedback here	259	938	<b>Re: Can I get Meteor m2 with ...</b> by Mike2459 Fri Sep 21, 2018 2:09 pm
<b>Spectrum Analysis</b> Information and discussions on Spectrum Analysis	12	296	<b>Re: Feedback for version 0.9a...</b> by SteveAndrew Sat Sep 15, 2018 4:18 am

LOGIN • REGISTER

Username:  Password:  I forgot my password | Remember me ☐

WHO IS ONLINE

In total there are 42 users online :: 2 registered, 0 hidden and 40 guests (based on users active over the past 5 minutes)  
Most users ever online was 117 on Sat Mar 31, 2018 8:17 pm

Registered users: Bing [Bot], Google [Bot]  
Legend: Administrators, Global moderators

**THE UNOFFICIAL USER GROUP FOR SDRplay**

CONTINUOUS COVERAGE 1KHZ-20KHZ  
RSP1 - RSP1A - RSP2 - RSP2PRO - RSPDuo  
12/14BIT SDR 10MHZ SPECTRUM  
[WWW.SDRPLAY.COM](http://WWW.SDRPLAY.COM)

Joined ▾ ✓ Notifications Share ... More

Write Post Add Photo/Video Live Video More

Write something...

Photo/Video Get together Watch party ...

RECENT ACTIVITY ▾

**Les Norton** Conversation starter · 1 hr  
Think i have come across a problem but not sure how to resolve it, I have an RSP2 and can make 2 instances but want to run 2 antennas on 2 different frequencies, I can make it do 2 different frequencies but not wide enough. Im monitoring FT8 so want to do 7 and 14 but the farthest apart i can get if i set 14.074 is 9.200 and thats set at SR10mhz also if i change the Ant from A-B-Hiz it changes them both. Am i trying to do what it can't do or am i missing something - on RSPuno but doubt it would change on other softwares?

1 Like 4 Comments

View 2 more comments

**Steve Brightman** See here: <https://youtu.be/ckbOdDjHfvg> ✓

**YOUTUBE.COM**  
**Monitoring Multiple Bands with SDRuno (AN007)** ✓

Like · Reply · 53m

**Les Norton** Ok Steve locked it at 11.074 now i can see 14.074 and 7.074 BUT look at the screen im getting the same waterfall

**ADD MEMBERS**  
Enter name or email address...

**MEMBERS** 9,232 members

**SUGGESTED MEMBERS** Hide

**Friends**

- Hugh Davies** Add Member
- Laura Samuels** Add Member
- Martin Banham-Hall** Add Member

See More

**DESCRIPTION**  
This group is an Independent group for all owners and future own... See more

**GROUP TYPE**  
Support

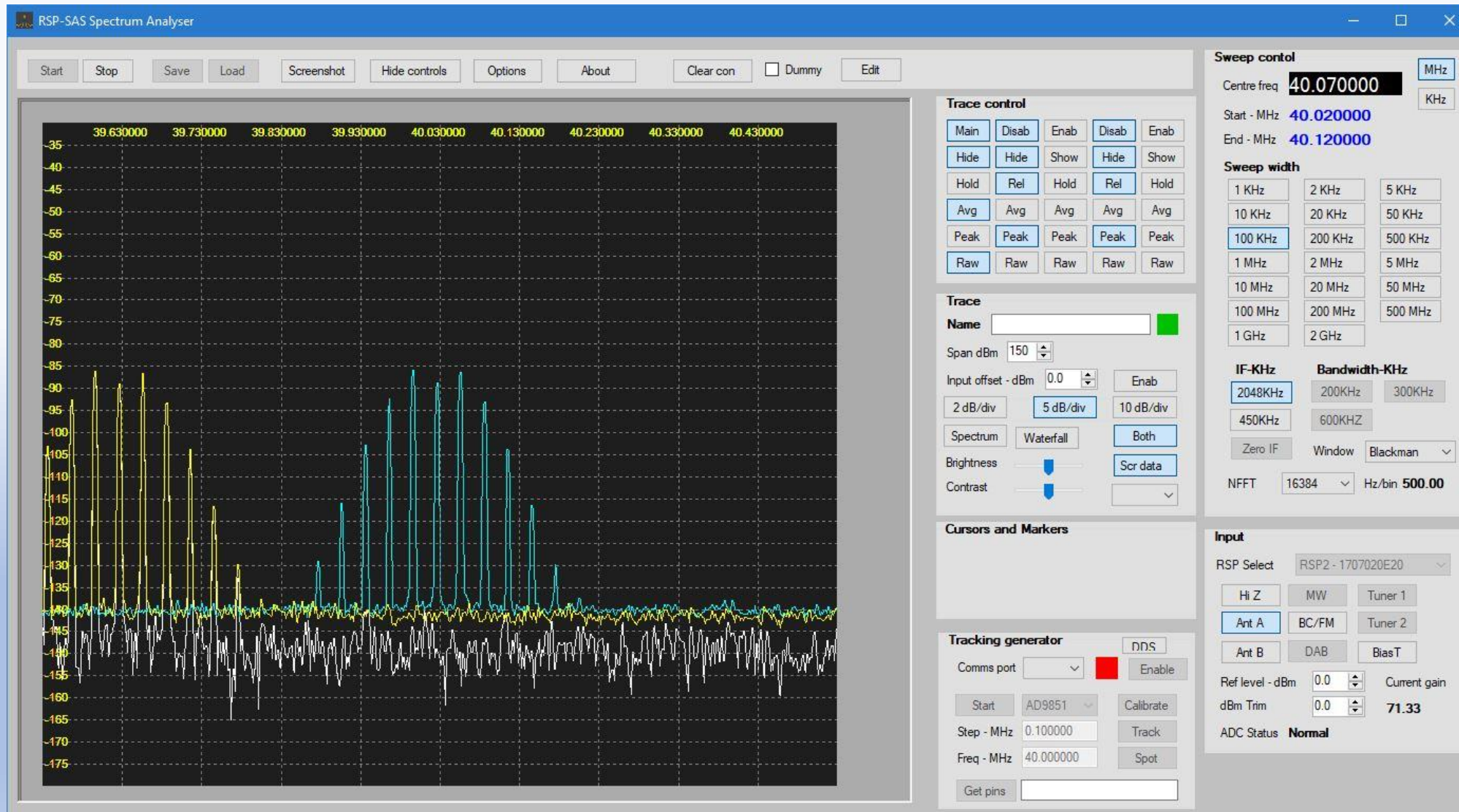
**CREATE NEW GROUPS**  
Groups make it easier than ever to share with friends, family and teammates.

**RECENT GROUP PHOTOS** See all

**Suggested Groups** See All

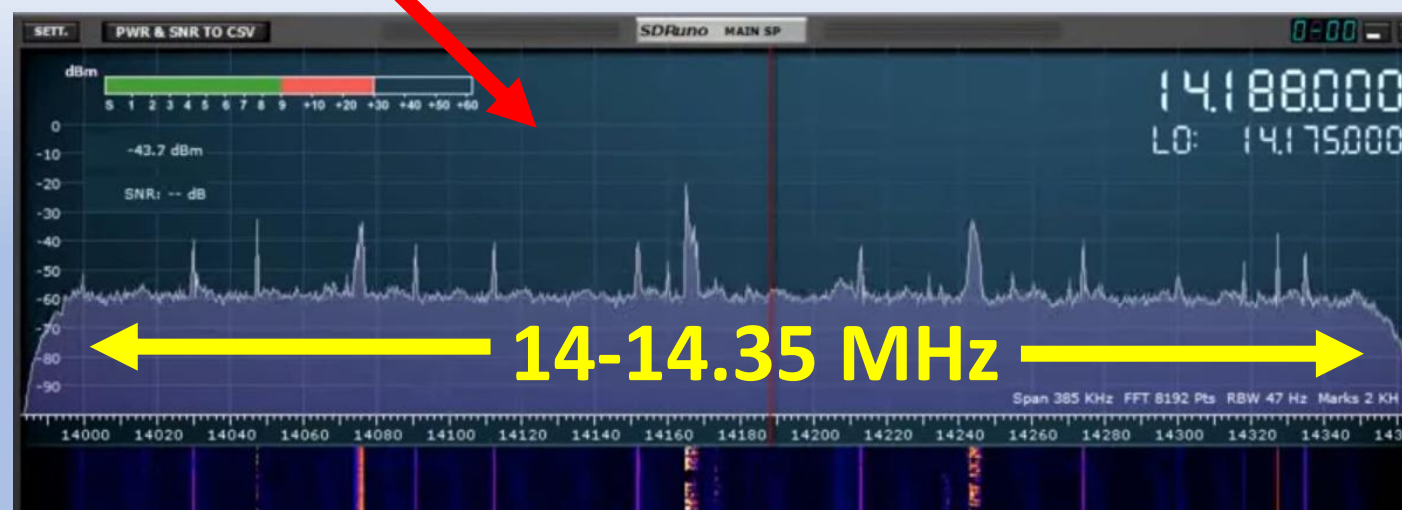


## Spectrum Analyser function – October beta release






## SDRuno Ham Band Framing: "Ham Lower, 20m example)





## *Non Windows WorkFlow:*



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# Downloads

SOFTWARE

Windows

Linux x86

Mac

Raspberry Pi

Android

ARM64

↓

API/HW DRIVER – V2.13 (20TH JUNE 2018)

(All RSPs – single tuner mode only)

↓

ADS-B (DUMP1090) V1.3 (22ND NOV 2017)

(RSP1/RSP1A/RSP2)

↓

CUBICSDR (WEBSITE) – BUILD FROM SOURCE

(All RSPs – single tuner mode only)

DOCUMENTATION

Software

App Notes

Community Guides

How To Guides

Video guides & Media

Links

Datasheets

SDRUNO USER MANUAL

(version 1.22 / 13th January 2018)

SDRUNO (RSPDUO) USER MANUAL

(version 1.23 / 18th May 2018)

SDRUNO MANUEL UTILISATEUR (FRANCAIS)

(version 1.23 / 18th May 2018 – merci a André Meunier)

SDRUNO RELEASE NOTES

(covers all versions 1.0.0 to 1.23.0)

NON-WINDOWS WORKFLOW (INTERACTIVE WEB SYSTEM)

(Updated 4th July 2018)

SDRplay

Home Start Here Products Distributors Reviews Purchase Downloads Community

## NON-WINDOWS WORKFLOW

- ### 1 Select Your Operating System

Select OS

Hint: If you using an ARM based system, please ensure as to which type it is, type 'arch' in a terminal window. If it reports armv8 then it's 64-bit, otherwise it is 32-bit
- ### 2 Linux/x86 Work Flow

Select Flow

Select Flow

SoapySDR built from source code

Gnu Radio built from source code
- ### 3 Get The API

Click on the link below to start the Linux/x86 API download

[API 2.13](#) - this will open a new window/tab, come back here after you have the API to continue

Once the API is downloaded and installed, check the box to continue

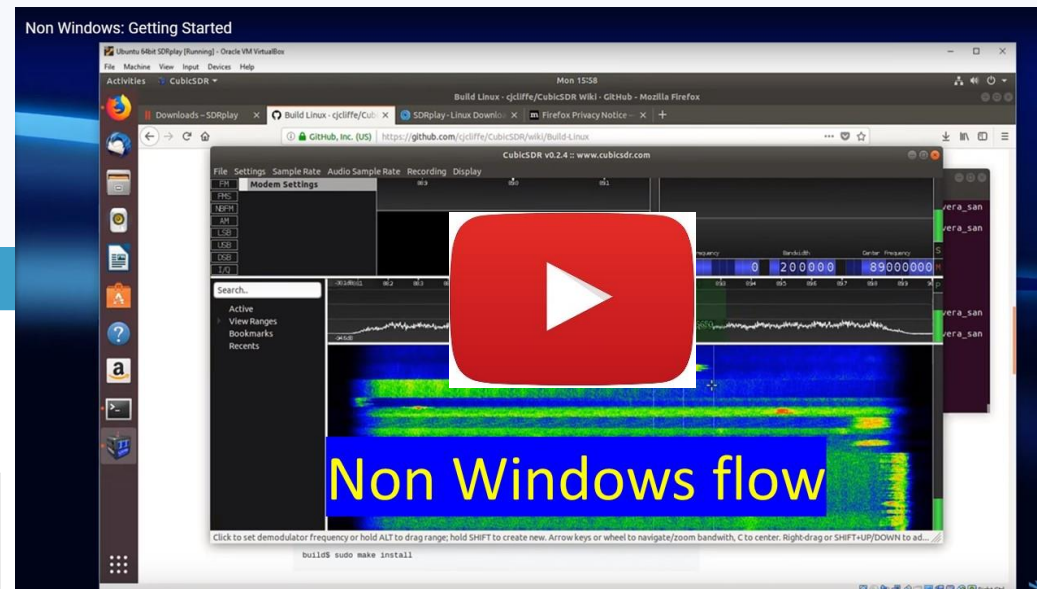
☐ Continue

```

# Clone the source repository
elsewhere)

cd ~/Dev
sudo rm -rf gr-osmosdr
git clone https://github.com/SDRplay/gr-osmosdr
cd gr-osmosdr
git checkout sdrplay2
mkdir build
cd build
cmake .. -DOS=Linux -DPERF=OFF -DENABLE_FLOPPY=OFF -DENABLE_P
make
sudo install
sudo ldconfig

To use this within an application
LD_LIBRARY_PATH=./gr-osmosdr/lin
  
```



After installing the API, use this command to make sure the RSP can be seen by the system and afterwards make sure the RSP is disconnected and reconnected.

```
sudo service udev restart
```

Here's the code you need to build a local install of gr-osmosdr on Linux/x86 - the reason why this is a local build is to not interfere with any gr-osmosdr installs that may have been installed with other applications such as Gnu Radio

Note 1 this code assumes that you have a Dev directory in your home account and will remove any existing gr-osmosdr directory you may have within it. If you do not have a Dev directory, create one using `mkdir ~/Dev`

Note 2 You will also need to create a directory for the gr-osmosdr library to be installed in. In this example, `~/gr-osmosdr` will be used. It will need to be created if it doesn't already exist using `mkdir ~/gr-osmosdr`

Note 3 The cmake statement is to make the library support just the SDRplay RSPs. You can remove the relevant `-DENABLE_` statement to include support for other hardware (note this guide does not show how to build those other libraries, you elsewhere)

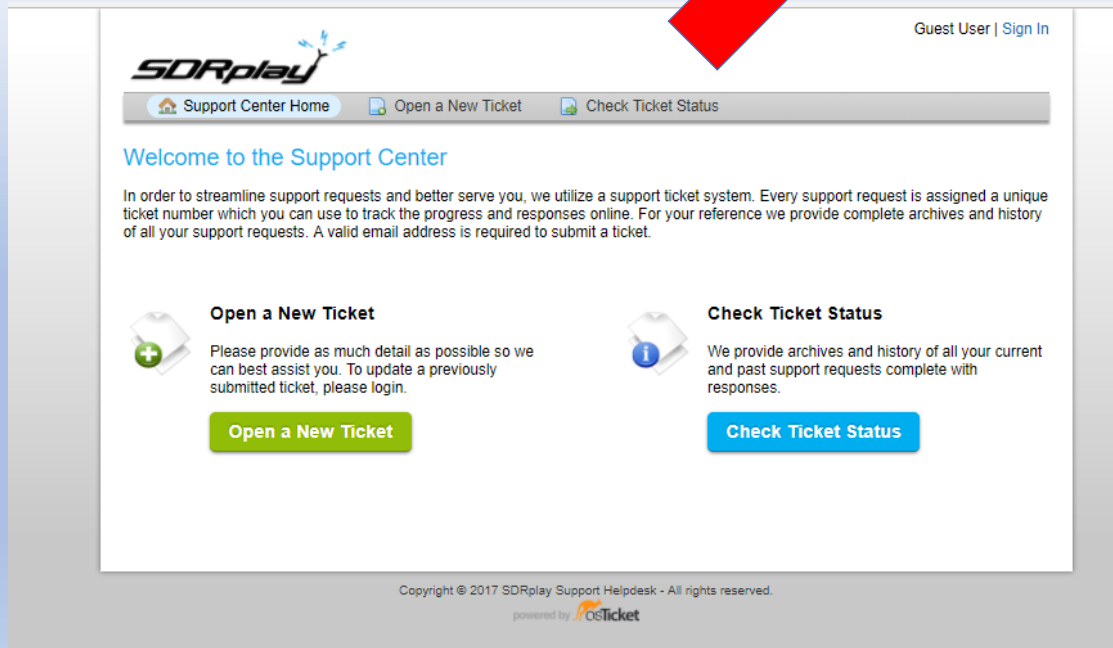
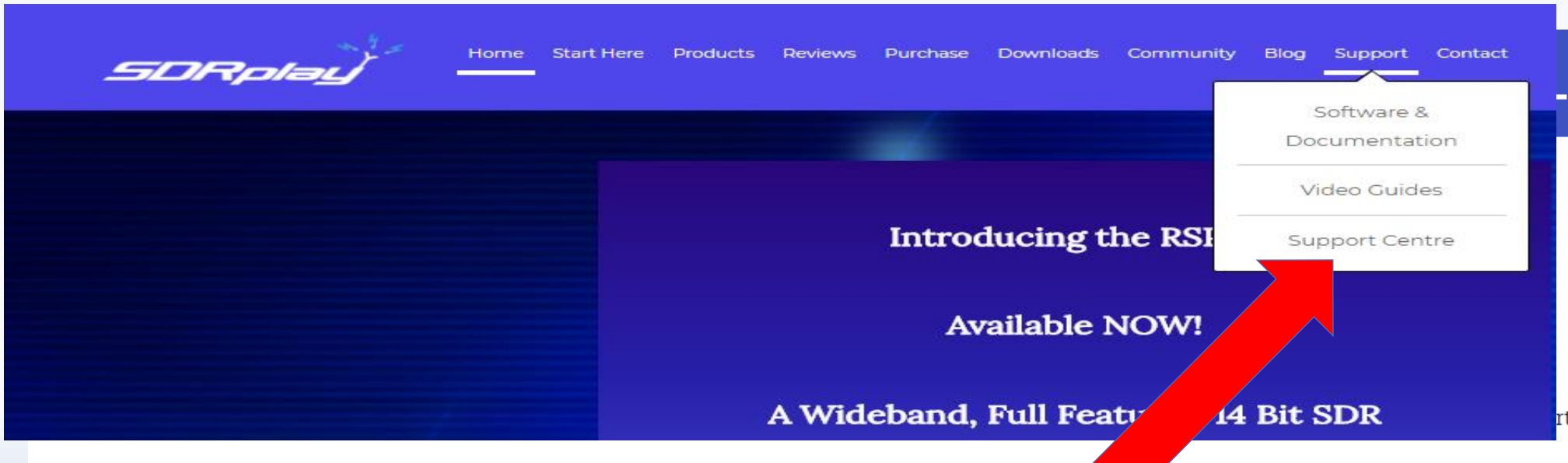
```
cd ~/Dev
sudo rm -rf gr-osmosdr
git clone https://github.com/SDRplay/gr-
cd gr-osmosdr
git checkout sdrplay2
mkdir build
cd build
cmake -DCMAKE_BUILD_TYPE=Release -DENABLE_PYTHON=true -DENABLE_NONFREE=true -DENABLE_SDRPLAY=false -DENABLE_AIRSPY=false -DENABLE_BTL=false -DENABLE_BTL_TCP=false -DENABLE_HACKRF=false -DENABLE_IL2CPP=false -DENABLE_MSP430=false -DENABLE_RFSPIR=false -DENABLE_RFSPIR2=false -DENABLE_RFSPIR3=false -DENABLE_RFSPIR4=false -DENABLE_RFSPIR5=false -DENABLE_RFSPIR6=false -DENABLE_RFSPIR7=false -DENABLE_RFSPIR8=false -DENABLE_RFSPIR9=false -DENABLE_RFSPIR10=false -DENABLE_RFSPIR11=false -DENABLE_RFSPIR12=false -DENABLE_RFSPIR13=false -DENABLE_RFSPIR14=false -DENABLE_RFSPIR15=false -DENABLE_RFSPIR16=false -DENABLE_RFSPIR17=false -DENABLE_RFSPIR18=false -DENABLE_RFSPIR19=false -DENABLE_RFSPIR20=false -DENABLE_RFSPIR21=false -DENABLE_RFSPIR22=false -DENABLE_RFSPIR23=false -DENABLE_RFSPIR24=false -DENABLE_RFSPIR25=false -DENABLE_RFSPIR26=false -DENABLE_RFSPIR27=false -DENABLE_RFSPIR28=false -DENABLE_RFSPIR29=false -DENABLE_RFSPIR30=false -DENABLE_RFSPIR31=false -DENABLE_RFSPIR32=false 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*Code, instructions and  
video guide*

## ***SDR Receivers***



# Direct support from SDRplay



**SDR Receivers**