

## SDRuno ADSB - Virtual Radar Server - Internal Webserver

OPT SCAN SCHEDULER Final SR: 800000 0 SP1 SP2 RX Gain: 77.0dB ADD VRX NOTCHES MW/FM DAB FF GAIN IFAGC: DISABLED Sdr: 51% Sys: 86% SAVE WS Default Workspace	SETL         RDSW         DXW         SDPLIND RX COL           DEEMPHI         I.M.z         I.M.Z         I.M.Z           HODE         A.M.         FM         C.W.           VEO - QM         FM MODE         C.W.         VEO - QM           VFO - QM         FM MODE         C.W.         VEO - QM           VFO - QM         FM MODE         C.W.         VEO - QM           VFO - QM         FM MODE         C.W.         VEO - QM           VFO - QM         FM MODE         C.W.         VEO - QM           VFO - QM         FM MODE         C.W.         C.W.           VFO - QM         FM MODE         C.W.         C.W.           VFO - QM         FM MODE         C.W.         C.W.           VUITE         -Bd dBm         SQLC         SQLIC	NTROL         SYNE           OSS         L24.8 dBm           FLITE         NS           GOSD         ISS           USS         LSS           USS         NS           GOSD         NBW           13X         20K           NR         NSS           ACC         OFF           PAST         NCW	MCTR TCTR RMS 1900/1 NOTCH NCH1 NCH2 80 NCH3 130 NCH4 130 NCHL 131 131 131 131 131 131 131 13	Bands Bands 630 2 20 Clear E	17 UNIX 17 UNIX	SDRuno Pi	ALUGINS ALUGIORECOT DXClus MPXOUT CloudMark ContourShu F Lloo	DSB der der http: ms ters ters ttte rers ttte put ums prucins
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This application note will describe how to setup and/or edit the web server for use with the SDRuno ADSB Plugin. When the web server is running you can access it with your browser to view air traffic information overlaid on a map.

You have a choice of two web servers:

- 1. The ADSB plugin Internal web server, or,
- 2. Virtual Radar Server, which is a 3rd party application you can download and install

You can use either web server or both, just follow the appropriate directions as shown on the Contents page.

When using the SDRuno Internal Webserver Plugin, this application note assumes you have the ADSB plugin installed, configured and running with a ADSB map that can be viewed locally from within your web browser using the localhost IP and assigned port.

Additional SDRuno ADSB plugin configuration information is available. Please view the accompanying SDRuno ADSB plugin PDF by clicking the HELP button within the SDRuno ADSB plugin window.



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Disclaimers



# Chapter 1 – Using SDRuno ADSB Plugin With Virtual Radar Server

e been enabled					Take Offline
een enabled					
				Pu	ut onto Internet
User	Last Request	Bytes Sent	Last URL		
IRadar/desktop.	html				
Connectio Connecter	n Status d	Total Messages 571,015	Bad Messa	ages Aircr 449	aft Tracked 22
itus					
None					
IP	Address	Port	Bytes Buffered	Bytes Sent	Bytes Discarded
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## Virtual Radar Server Setup

The SDRuno ADSB Plugin works with Virtual Radar Server software. Virtual Radar Server will collect the data from the SDRuno plugin and produce a clickable map that shows all the aircraft found by the SDRuno plugin in real time.

You can download Virtual Radar Server from here <a href="http://www.virtualradarserver.co.uk/Download.aspx">http://www.virtualradarserver.co.uk/Download.aspx</a>

After downloading the software, run it to start the installation.

🎈 Use	er Accour	nt Control	X
?	Do you PC?	u want to allow	this app to make changes to your
	*	Program name: Verified publisher: File origin:	Virtual Radar Setup Open Source Developer, Andrew Whewell Hard drive on this computer
😔 sł	now detai	ls	Yes No
			Change when these notifications appear

Click Next to continue past the welcome screen.





Review and accept the license agreement, then click Next.

淋 Setup - Virtual Radar	↔	_		×
License Agreement Please read the following important informa	tion before continuing.			**
Please read the following License Agreemer agreement before continuing with the instal	it. You must accept the lation.	terms of t	his	
Copyright © 2010 onwards, Andrew Whev All rights reserved.	vell		^	
Redistribution and use in source and binary modification, are permitted provided that the Redistributions of source code must re this list of conditions and the following of Redistributions in binary form must rep notice, this list of conditions and the fol documentation and/or other materials p Neither the name of the author nor the	r forms, with or without he following conditions tain the above copyrigh disclaimer. roduce the above copy lowing disclaimer in the provided with the distrib e names of the program	are met: nt notice, right pution. i's	~	
○ I accept the agreement				
I do not accept the agreement				
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You can review the change log and then click Next to continue.

Setup - Virtual Radar	↔	_		×
Version History				×
What has changed?			5	10
When you are ready to continue with Setu	ıp, dick Next.			
<u>2.3.1</u>			^	r
For the full list of changes	please visit		- 1	
https://trello.com/b/bSMJm818	3			
• Fixed: Issue whereby CPU u	sage was highe:	r than usu	al	
and the server could crash or	n sites with ma	ny large		
Leeds.				
2.3.0				
1			*	
	< Back	Next >	Cano	el



Review the installation directory and click Next

迷 Setup - Virtual Radar	↔	_		×
Select Destination Location Where should Virtual Radar be installed?			6	**
Setup will install Virtual Radar into the fo	llowing folder.			
To continue, click Next. If you would like to select	a different folder	, click Bro	wse.	
C:\Program Files (x86)\VirtualRadar		Br	owse	
At least 14.7 MB of free disk space is required.				
	< Back Ne	xt >	Can	cel

The next screen allows you to change the port number that the server listens on to receive web requests. You can normally leave this as the default (80) but if it conflicts with another web server you may have on your system, you can change it, then click Next.

🔀 Setup - Virtual Radar	+	•	_		×
Server Port Which port should the server listen on?					*
Please enter the port that you would like the s this at 80 - choose a value between 1025 and using port 80.	server to liste 65535 only	en on. You if other so	i can usu ftware is	ally leave already	
Port:					
	10-1			-	
	< Back	Nex	(>	Cano	ei



You can choose which folder to store the programs shortcuts or leave it as the default and click Next.

🔀 Setup - Virtual Radar	↔	—		×
Select Start Menu Folder Where should Setup place the program's shortcuts?			6	**
Setup will create the program's shortcuts in t	he following St	tart Menu	ı folder.	
To continue, click Next. If you would like to select a dif	ferent folder,	click Brow	wse.	
Virtual Radar		Bro	owse	
< Bac	k Nex	t>	Ca	ncel

This screen allows you to automatically configure the firewall to allow remote connections. Review this information and then click Next once you have decided on the correct setting.

🔀 Setup - Virtual Radar	÷	_		×
Select Additional Tasks Which additional tasks should be performed?			6	**
Select the additional tasks you would like Setup Radar, then click Next.	to perform while in	istalling Vir	tual	
Configure Windows Firewall so other compo Virtual Radar Server	uters on your netw	ork can ac	cess	
	< Back Ne	ext >	Can	cel



After reviewing the summary of what will be installed, click Install to begin.

🔀 Setup - Virtual Radar	↔	_		×
Ready to Install Setup is now ready to begin installing Virtual Rad	ar on your con	nputer.		*
Click Install to continue with the installation, or d change any settings.	ick Back if you	want to rev	view or	
Destination location: C:\Program Files (x86)\VirtualRadar			^	
Port: 80				
Start Menu folder: Virtual Radar				
Additional tasks: Configure Windows Firewall so other compu Microsoft .NET 3.5 is already installed	ters on your n	etwork can	access \	
<			>	
	< Back	Install	Cance	el

After the software has installed, click Finish to close the installer.





## Virtual Radar Server: Configuration Settings

The easiest way to get started is to click on Start within the SDRuno ADSB plugin. This will start the SDRuno ADSB plugin with settings to output the received plane information to the network ports assigned.

A receiver needs to be assigned in the Virtual Radar Server option with the following information: Format: / Beast IP: 127.0.0.1 (if the SDRuno ADSB plugin and virtual server are running on the same machine) or set to the IP address of the machine running the SDRuno ADSB plugin.

Port: 30005 (this is the default output port for beast data) and the default port used in the SDRuno ADSB plugin setup screen.

While the SDRuno ADSB plugin is running, start Virtual Radar Server from the Start Menu. It should automatically connect to the SDRuno ADSB plugin and start to process incoming data.

ptions					×		
Preset Configurations							
Data Sources		Enabled		*₀• Wizar	d ^		
Receiver	Name:	Receiver					
KD2KOG	Format:	BaseStation	✓ Is SatCom AC	ARS feed			
Merged Feeds Rehmadicast Servers	Location:	KD2KOG	~ ×				
Users	Connection type:	Network	$\sim$	Test Conne	ection		
Web Server		Normal					
Users		○ Hide from web site					
Web Site		<ul> <li>Merge only</li> </ul>					
General	Network	Push receiver					
	Address:	127.0.0.1					
	Port	30003					
	Passobrase:						
		Send keep-alive pa	ckets				
	Idle timeout:	60 (\$ (seconds)					
	Access Control						
	Default access:	Unrestricted	$\sim$				
		1 + X			- 11		
	Allow these addresses:	CIDR	From address	To address			
				ОК	Cancel		

You can now click on the link in blue inside the Virtual Radar window (shown in blue) and it will open a browser window showing the aircraft being detected on a map.



## Virtual Radar Server: Website Options

General Map Aircraft	List Filters	trank
Data Feed		For Price
Update interval (secs):	1	
Hide aircraft not on map	·	
Comment I constinue		
To set your current location click	"Set current location" and drag the marker	-
Set current location	det current location and drag the market.	
Use GPS location		
Show current location (26.6	j079 / -80.23283)	
Units		
Show vertical speed per seco	nd	- Lake Oke schobee IN Carbie
Show altitude type		Magament Arra
Show vertical speed type		Negente Vieweine Vi
Show speed type		KAIST HIZHO AS PAID
Show heading type		Belie Glade
Use pressure altitude		NSATE KSITE: Lake Worth
Distances:	Nautical Miles 🗸	
Heights:	Feet 🗸	National Text Transaction State
Speeds:	Knots V	Refue 3925 Refue DefrayBeach
- Processor	Inches of Marcury	19500
Flessures.	inches of welcary	uofa katon
Flight level transition altitude:	18,000 C Feet V	- Simological Anti-
Flight level height unit:	Feet 🗸	Pompano Beach
Audio		Everylades
Announce details of selected	aircraft	- S Toylor Fort Lauderdale
Only announce details of automatical sectors of automatical secto	-selected aircraft	Accounte Wildlife Wildlife
		Monagement
		Bin Cupress

Many options can be adjusted and or applied from within the Virtual Radar Server web page. Click on Menu and select Options from the dropdown menu.

For more information and details about customizing the Virtual Radar Server web page options. Please visit the Virtual Radar Server documentation page located here <u>https://www.virtualradarserver.co.uk/Documentation/Default.aspx</u>



Virtual Radar Server: Saving the Virtual Radar Server Website Options

Preset Configurations			×
Data Sources	Desktop site:	http://127.0.0.1/VirtualRadar/desktop.html	
Receivers	Mobile site:	http://127.0.0.1/VirtualRadar/mobile.html	
Receiver Locations	Settings site:	http://127.0.0.1/VirtualRadar/settings.html	
V KD2KOG		Copy from clipboard	
Merged Feeds     Rebroadcast Servers     Users     Web Server     Users     Administrators     Web Site     Metrial Settings     General	Exported settings:	<pre>{'ver':1, 'values'':{'VRadarServer#desktop#vrsCurrentLocation-default':</pre>	
	Exported settings Use the links to the Desktop and Mobile Settings site, click Export Settings and co	sites to configure the site as you want it to appear to new users. Then click the link to the opy the exported settings into this field.	
		OK Creat	

After setting the options from the Virtual Radar Server Webpage, you can have these settings applied as the default settings whenever the Virtual Radar Server webpage is accessed. You will need to export the settings first from the Virtual Radar Server webpage and import these settings into Virtual Radar Server application.



× 10.0.0.74/VirtualRadar/settings.h⊨ × +
← → C ☆ A Not secure   10.0.0.74/VirtualRadar/settings.html
Apps
Settings Remove All Refresh Export Settings Import Settings
Storage engine: jStorage-localStorage Storage size: 2152
#desktop#-vrsAircraftPlotterOptions-default #desktop#-vrsCurrentLocation-default #desktop#-vrsMapLayerManager #desktop#-vrsMapState-default
#desktop#-vrsSplitterPosition-default-vrsLayout-A00 #global#-Localise

To export the setting, visit the Settings page using the URL shown in Virtual Radar Server option screen under Web Site/Initial Settings.

After loading the web page (<u>http://YOURIPADDRESS/VirtualRadar/settings.html</u>) click on Export Settings.



In the Export Settings section, select all the text shown within the black box, right click your mouse with the text highlighted and select Copy.



Data Sources	Deskter site:	http://127.0.0.1.06t.csIPades/dealstan.html
Receivers	Desktop site: Mobile site:	http://127.0.0.1/VirtualRadar/desktop.ntml
Receiver		nttp://127.0.0.1/virtualRadar/mobile.ntml
Receiver Locations	Settings site:	nttp://127.0.0.1/virtuaiHadar/settings.ntml
♥ KD2KOG		Copy from clipboard
Merged Feeds     Reproadcast Servers     Users     Raw Feed Decoding     Web Server     Users     Administrators     Web Site     Web Site     General	Exported settings:	<pre>{"ver":1, "values":{"VRadarServer#desktop#vrsCurrentLocation-default": {"userSuppliedLocation":{"I#":26.65078612454052;"ng": 80.23283243179323);"useBrowserLocation"false;"showCurrentLocation" true},"VRad arServer#desktop#vrsMapState-default":{"zoom":9,"mapTypeld":"m","center": {"Iat":26.64866120289714,"ng": 80.233154266480510];"binghtnessMapName":"Stamen - Toner Lite", "brightness":0," "VRadarServer#desktop#vrsAircraftPlotterOptions-default": {"showAthtudeStatk"false;"suppressAthtudeStakWhenZoomedOut"true, "showPinTex t"true,"pinTexts": ["reg","csn","ath","m=","m=","jniTextLines":3,"hideEmptyPinTextLines"false,"trail Display":c","trailType:"b", "showRangeCircles"true, "rangeCircleDistance","rangeCircleDistanceUnt":"mangeCircleCourt".4,"rangeCircleOddOclour":##ff00","rangeCircleDistanceUnt":"showAthtedFFFFFF;"that:".1,"o ntyUsePre22Lons"false,"aircraftMarkerClustererMaxZoom":5),"VRadarServer#desktop#vrsPolarPlotter-default": {"toolur":##000000",":Index":-5),{"low": 1,"high:"9999,"colour":##00FF001","index":-2), {"toolur":##000000",":#fFFFFF;"thatex":-1), {"low"::10000,"high:":29999,"colour":##00FF001","index":-3),{"low"::30000,"high":- 1,"colour":##FFFFFF;"thatex:-1), {"low"::20000,"high:":29999,"colour:"##00FF001","index":-3),{"low"::30000,"high":- 1,"colour":##FFFFF;"thatex:-1), {"toolur":##FFF0000",":Index::-4),"mangeCircleServer#desktop#vrsSplitterPosition- default.vrsLayout.Ad0":{"mangeCircle:"toolsenay"," []"strokeOpacity":1,"fillOpacity":0,5),"VRadarServer#desktop#vrsSplitterPosition- default.vrsLayout.Ad0":{"mangeCircle:"toolsenay"," []"strokeOpacity":1,"fillOpacity":0,5),"VRadarServer#desktop#vrsSplitterPosition- default.vrsLayout.Ad0":{"mangeCircle:"true,"index::-4)," {"name":"STI","pane":2,"vertical":true,"tength:"411)};"VRadarServer#desktop#vrsSplitterPosition- default.vrsLayout.sti:[]"opacityOverrides":{}}}]]</pre>
		Copy to clipboard
	Exported settings	
	Use the links to the Desktop a Settings site, click Export Setting	nd Mobile sites to configure the site as you want it to appear to new users. Then click the link to the ngs and copy the exported settings into this field.

In the Virtual Radar Servers application go to the option screen, click Web Site and Initial Settings. Right click and Paste the data that was copied from the Webpage export section and click the OK button.

From this point on any new browsers that connect to the Virtual Radar Server web page will be using the settings you exported.



## Virtual Radar Server: Map Overlay Section

eset Configurations		
Data Sources	Map Provider	
Receivers	Map provider:	Leaflet 🗸
Receiver Locations	Tile server:	Open Street Map
V KD2KOG	The server.	
Merged Feeds	Google Maps API key:	OpenStreetMap - Black and White
Rebroadcast Servers		OpenTopoMap Stamen - Toper
Raw Feed Decoding	Data Sauraa	Stamen - Toner Lite
Web Server	Data Sources	Stamen - Terrain ESBI - World Street Man
Users	Database filename:	ESRI - DeLorme
Administrators	Flags folder:	ESRI - World Topo Map ESRI - World Imagery
Initial Settings	Silhouettes folder:	CartoDB - Positron
General		CartoDB - Dark Matter
	Pictures folder:	Wikimedia
		Search sub-folders for pictures
		Download air pressure readings
	Aircraft details online lookup	
		✓ Lookup aircraft details online
	Data provider:	PlaneBaseNG
	Web site URL:	http://planebase.biz/
		Aircraft data supplied by PlaneBase. Please visit their web site for more details, or to download their standalone client.
		OK Cancel

The default web map overlay can be changed by selecting a different overlay within the Virtual Radar Server Data Source dropdown configuration. Click on the Tile Server drop down and select the Tile server name you wish to use.

Click the OK button after selection. The Virtual Radar Server webpage will need to be refreshed.





#### OpenStreetMap



OpenSteetMap – Black and White





#### Open TopoMap



Stamen-Toner



C A Hot secure   House Ayymuthebour/destrip/home	🖈 🛡 🖬 🗮 😗 🗄
SE Detra DUTS introduction Recommendant R	Nex462 AA1918 * AA191
Gad Gan Building Acadia Acad	Creater & form
For show The	Annual Face Lidovenia
form Andread Galance Heating Andread Carlos Andrea	Mittal autor during a
termination Militini Boolination Militini Oynes testas	A CONTRACT OF

#### Stamen-Toner Lite



#### Stamen-Terrain





#### ESRI-World Street Map



#### ESRI-DeLome



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B	Bit State         Addition         Addition         Addition           Whenha Ling         Addition         Addition         Addition         Addition           Whenha Ling         Mark Mark Mark Mark Mark Mark Mark Mark
	Powerd by Virtual Rodor Server

#### ESRI-World Topo Map



ESRI-World Imagery





#### CartoDB-Positron



CartoDB-Dark Matter



#### CartoDB-Voyager

C 🛆 A Not secure   10.0.0.74/VintueRadar/desistop.html#	* • • • • • • • • • • • • • • • • • • •
	NEW       ATTO         New
	Testing Levret Ing Sector And Sector Version Sector
	Eddel Hanning & Construction (* 1997) A 4 49 Particul

#### Wikimedia – Not functioning at this time.



### Chapter 2 – Using SDRuno ADSB Plugin With Internal Webserver





## SDRuno ADSB Plugin - Webserver: Editing Notes

Accessing the internal ADSB web page is by opening your web browser and inputting the URL http://127.0.0.1:8080

Before editing any configuration files. Please make a backup copy of the public\_html folder located in C:\ProgramData\SDRplay\ This will give you a restore point should any mistakes or errors occur.

We will use Notepad to edit the configuration files. All the configuration files we edit will reside in C:\ProgramData\SDRplay\public\_html

Launch File Explorer and paste in the following path C:\ProgramData\SDRplay\public\_html into the File Explorer address bar. Please note that ProgramData is a hidden folder.

Launch Notepad by typing Notepad from the Start menu and hit Enter. Dragging and dropping the configuration files onto Notepad will open the file referenced within this document.

· -> · 🛧 🔤 > This PC > N	Mike (C:) > ProgramData > SDRplay > public_h	tml >	✓ Õ	h public_html
	Name	Date modified	Type S	ize
Quick access	coolclock	4/27/2021 8:00 AM	File folder	
Desktop	🖈 🔄 data	4/27/2021 8:00 AM	File folder	
Downloads	🖈 📙 db	4/27/2021 8:00 AM	File folder	
🗄 Documents	🖈 🔄 flags-tiny	4/27/2021 8:00 AM	File folder	
E Pictures	🖈 📙 jquery	4/27/2021 8:00 AM	File folder	
This DC	ol3	4/27/2021 8:00 AM	File folder	
	test	4/27/2021 8:00 AM	File folder	
Desktop	📓 config	8/14/2020 12:46 PM	JavaScript File	5 KB
Documents	📓 dbloader	8/14/2020 12:46 PM	JavaScript File	4 KB
🖶 Downloads	🧳 favicon	8/14/2020 10:22 AM	lcon	2 KB
👌 Music	🌋 flags	8/14/2020 12:46 PM	JavaScript File	20 KB
Pictures	📓 formatter	8/14/2020 12:46 PM	JavaScript File	4 KB
Videos	💿 gmap	8/14/2020 12:46 PM	Chrome HTML Do	9 KB
Mike (C:)	📓 layers	8/14/2020 12:46 PM	JavaScript File	7 KB
	📓 markers	8/14/2020 1:11 PM	JavaScript File	19 KB
	📓 planeObject	8/14/2020 12:46 PM	JavaScript File	20 KB
🛖 Secondary Backup (E:)	S registrations	8/14/2020 12:46 PM	JavaScript File	13 KB
🕳 Secondary Backup (E:)	📓 script	8/14/2020 12:46 PM	JavaScript File	37 KB
· ·	spinny	4/8/2020 12:45 PM	GIF File	79 KB
National Action of the second se	as style	8/14/2020 12:46 PM	Cascading Style S	3 KB



### SDRuno ADSB Plugin - Webserver: Setting the default map

By default, the ADSB webpage on launch will not auto center to a known location. To change this, you will need to edit the file config.js located in C:\ProgramData\SDRplay\public\_html using Notepad.

Scroll to // Default center of the map and edit DefaultCenterLat = & DefaultCenterLon = Enter your latitude and longitude.

The following website can be used to obtain this information. https://www.latlong.net





Save the config.js file and refresh the local ADSB webpage.







The ADSB webpage can display terrain limit rings using data obtained from the website

#### http://www.heywhatsthat.com

First you must generate a panorama for your location. To do this, follow the steps.

The Maximum Range achievable at any location depends on

(1) Curvature of earth

(2) The terrain around that location. Terrain plays a very important role as hills & changes in ground level will restrict maximum range.



This is because propagation of radio waves in GHz/Microwave range is line of sight. The range is therefore limited by curvature of earth and is about 250 nautical miles / 450 km for an ideal condition of perfectly level terrain. Hills & rise in ground levels further restrict maximum range to less than 250 nautical miles / 450 km.

FIND YOUR MAXIMUM POSSIBLE RANGE

To determine what maximum possible range, you can get at your location, follow the steps below:

- (1) Visit the site <a href="http://www.heywhatsthat.com">http://www.heywhatsthat.com</a>
- (2) Select tab "new panorama"
- (3) Enter your latitude and longitude
- (4) Enter your elevation (=enter elevation of your antenna)
- (5) Enter title
- (6) Hit "submit request" button
- (7) Wait and view sponsor's advertisement while panorama is generated
- (8) When panorama is generated, scroll down to map, and click "up in the air" tab on top right of map.
- (9) Zoom-out the map till you see two circular curves in blue & yellow colors, showing maximum
- distance of aircrafts at 10,000 feet & 30,000 feet elevation.

(10) Below the map you will see text boxes light yellow & light blue with default aircraft heights 10,000 feet & 30,000 feet. Change these to suite your requirements, and press "Enter" button. The two curves will modify to new height figures you have entered. I recommend using 10,000 & 45,000 feet, as normally commercial flights are 45,000 feet & below.





#### REFRACTION OF RADIO WAVES



The layers of air cause refraction of radio waves, and radio line of sight may extend beyond optical line of sight by as much as 50 to 100 nautical miles. Your maximum possible range will therefore be about 50 nautical miles more than the maximum possible range shown by the curves you got from heywhatsthat.com site.

#### ANTENNA LOCATION

To achieve your maximum possible range, your antenna should be installed at a height where it is above trees & houses surrounding it and can "see" the horizon.

What is the Maximum Range I can Get?

Once your panorama is generated, look near the top left of your newly created panorama page. You will see URL of your panorama there. The URL will be http://www.heywhatsthat.com/?view=XXXXXXXX where XXXXXXXX is the ID for your panorama.







Download the generated panorama's JSON file "upintheair.json" to your PC, and save it in the folder " C:\ProgramData\SDRplay\public\_html " (replace XXXXXXXX in the command below with your panorama's ID).

1						
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File Edit Format View Help						
{"elev_amsl":12.8288,"rings":[{"points":	[[28.4924804420392,-8	30.23286],[28.4921952456588	3,-80.1962949956103],[28.4	4913397480134,-		^
80.1597417069618],[28.4902081862763,-80.1	1231940196478],[28.45	571156189041,-80.08920 <mark>8</mark> 7012	2205],[28.4545953087683,-1	80.0533821127137]	,	
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Code:

"http://www.heywhatsthat.com/api/upintheair.json?id=XXXXXXX&refraction=0.25&alts=12192"

You can create as many rings as you want by adding elevations (in meters) at the end of URL given in the wget command above after "&alts=", separated by commas.

10,000 ft = 3048 m 20,000 ft = 6096 m 25,000 ft = 7620 m 30,000 ft = 9144 m

If you want to add all the 5 elevation rings noted above, the string at the end of wget URL will become "&alts=3048,6096,7620,9144,12192"

Important: Use altitude in meters in the wget URL above. Do NOT use feet.



### SDRuno ADSB Plugin - Webserver: Range Rings & A Center Location

By default, the ADSB webpage will not show range rings or a center location marker. To change this, you will need to edit the file config.js located in C:\ProgramData\SDRplay\public\_html using Notepad.

Scroll to

// Center marker. If dump1090 provides a receiver location,

// that location is used and these settings are ignored

edit SiteShow=true;

Enter your Latitude and Longitude and finally give the site name a meaningful name.



Save the config.js file and refresh the local ADSB webpage.











### SDRuno ADSB Plugin - Webserver: Range Ring Color

If you have added range rings as shown earlier, we can edit the color used to represent the rings making it easier to view. To change this, you will need to edit the file script.js located in C:\ProgramData\SDRplay\public\_html using Notepad. Scroll to // Add home marker if requested function and edit the color: '#000000' with a HTML color of choice using this website

https://www.w3schools.com/colors/colors\_picker.asp



Save the script.js file and refresh the local ADSB webpage.







## SDRuno ADSB Plugin - Webserver: Add dashed range rings

If you would like to add dashed range rings you will need to edit the file script.js located in C:\ProgramData\SDRplay\public\_html using Notepad. Add the line lineDash: [4, 4], under the HTML color that was added earlier for the range rings.

	script -	Notepad		- [	×
File	Edit	Format	View Help		
			<pre>snapToPixel: false, fill: new ol.style.Fill({color: 'black'}), stroke: new ol.style.Stroke({ color: 'white', width: 2 }) }) }); var feature = new ol.Feature(new ol.geom.Point(ol.proj.fromLonLat(SitePosition feature.setStyle(markerStyle); StaticFeatures.push(feature);</pre>	)));	~
			<pre>if (SiteCircles) {     var circleStyle = new ol.style.Style({         fill: null,         stroke: new ol.style.Stroke({             color: '#ff3300',</pre>		
			<pre>for (var i=0; i &lt; SiteCirclesDistances.length; ++i) {     var distance = SiteCirclesDistances[i] * 1000.0;     if (!Metric) {         distance *= 1.852;     } </pre>		*
			Ln 525, Col 41 100% Unix (LF)	UTF-8	

Save the script.js file and refresh the local ADSB webpage.







### SDRuno ADSB Plugin - Webserver: Dash range ring thickness

If you would like to change the thickness of the dashed range rings, you will need to edit the file script.js located in C:\ProgramData\SDRplay\public\_html using Notepad. Edit the line width 1 under the code we previously added to create dashed range rings (lineDash: [4, 4],). The default value is 1. A decimal value can be used.

```
📃 *script - Notepad
File Edit Format View Help
                                         color: 'white', width: 2
                                 })
                        })
                });
                var feature = new ol.Feature(new ol.geom.Point(ol.proj.fromLonLat(SitePosition)));
                feature.setStyle(markerStyle);
                StaticFeatures.push(feature);
                if (SiteCircles) {
                        var circleStyle = new ol.style.Style({
                                 fill: null,
                                 stroke: new ol.style.Stroke({
                                         color: '#ff3300',
                                          lineDash: [4, 4],
                                          width: 1
                                 })
                        });
                        for (var i=0; i < SiteCirclesDistances.length; ++i) {</pre>
                                 var distance = SiteCirclesDistances[i] * 1000.0;
                                 if (!Metric) {
                                         distance *= 1.852;
                                 }
                                 var circle = make_geodesic_circle(SitePosition, distance, 360);
                                 circle.transform('EPSG:4326', 'EPSG:3857');
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var feature = n feature.setStyl StaticFeatures.	<pre>wew ol.Feature(new ol.geom.Point(ol.proj.fromLonLat(SitePosition))); we(markerStyle); push(feature);</pre>		
if (SiteCircles var cir });	<pre>cleStyle = new ol.style.Style({   fill: null,   stroke: new ol.style.Stroke({      color: '#ff3300',      lineDash: [4, 4],      width: 1.5 })</pre>		
for (va	<pre>ir i=0; i &lt; SiteCirclesDistances.length; ++i) {   var distance = SiteCirclesDistances[i] * 1000.0;   if (!Metric) {         distance *= 1.852;   }</pre>		
	<pre>var circle = make_geodesic_circle(SitePosition, distance, 360); circle.transform('EPSG:4326', 'EPSG:3857');</pre>		~
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Save the script.js file and refresh the local ADSB webpage.



### SDRuno ADSB Plugin - Webserver: Add Microsoft Bing map

Visit <u>https://www.bingmapsportal.com</u> and sign up for a free developer's API key. After creating an account and generating the API key. Copy the API key provided by Bing and edit the file config.js located in C:\ProgramData\SDRplay\public\_html using Notepad. Scroll to the bottom of the config.js file and paste the assigned Bing API key to BingMapsAPIKey = null;



Replace the word null, leaving the semicolon with the assigned Bing key in quotes. BingMapsAPIKey = "YOUR KEY HERE";

Save the config.js file and refresh the local ADSB webpage.

You should now have two additional map overlay options to choose from. Bing Aerial and Bing Roads.









# SDRuno ADSB Plugin - Webserver: Display weather radar overlay

Selecting NEXRAD will display the current weather radar overlay (USA only) over the selected map.



## SDRuno ADSB Plugin - Webserver: Increase clock size



If you would like to increase the clock size from its default size, we can edit the display radius making it easier to view. To change this, you will need to edit the file script.js located in C:\ProgramData\SDRplay\public\_html using Notepad. Scroll to displayRadius: and enter a value

greater than 40, which is the default value.

	script -	Notepad					_		×
ile	Edit	Format	View Help						
		} else	<pre>\$('#timestamps').css('display', 'none'); {     // Create the clocks.     new CoolClock({         canvasId: "utcclock",         skinId: "classic",         displayRadius: 40,         showSecondHand: true,         gmtOffset: "0", // this has the second second</pre>	to be a string!					^
			<pre>showDigital: talse, logClock: false, logClockRev: false }); BeceiverClock = new CoolClock({</pre>						
			<pre>canvasId: "receiverclock", skinId: "classic", displayRadius: 40, showSecondHand: true, gmtOffset: null, showDigital: false, logClock: false, logClockRev: false</pre>						
			<pre>}); // disable ticking on the receiver clock, ReceiverClock.tick = (function(){})</pre>	we will update it	ours	elves			~
		`		In 176 Col 3 10	00%	Linix (LE)	LITE	.0	

Save the script.js file and refresh the local ADSB webpage.

SDRplay

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