Create A Ribbon Chart

1
Make sure that the configuration panel is open. If the panel is not displayed, click the gear icon next to the chart title.

2
Select one or more Systems from the drop down. Search for a system by typing within the "Select Systems" text box.

3
Select one or more Signals from the Signal List by enabling the checkboxes. There is limited data for non-GPS signals.

4
Customize how the chart is displayed. You can also add jammer ranges based on a given power level.

5
Export the finalized visualization by selecting the download button next to the chart title and selecting the desired format

6
Select Chart or Table View

Tooltip
Hover over each bar to see a tooltip displaying the information for that bar.

Group By
Group the chart data by Signal or System. If grouping by System, be aware that it takes more power over a wider bandwidth to jam higher-order signals; so the information should not be interpreted as equal

Jammer Ranges
Enable and enter the jammer power in W or dBW to display at what distances the J/S values would theoretically be observed

Customizations

Bar Height:	Change the height of the bars on the chart
Show Labels:	Display the J/S values on each bar
Show Axis:	Display the J/S values on the top of the chart
Show Legend:	Display the legend at the bottom of the chart
Original Colors:	Change the color scheme to what was used in the original Arsenal tool
Use Test Data:	Include actual test data into the calculations or just use physics and rules-of-thumb.

To share visualizations, **copy the entire URL and send it as-is**. The URL will rebuild the visualization for the recipient so that they can see the exact graph or table that you created - including all customizations.

The Arsenal web application was developed by ICR, Inc. It leverages a SQLite database, NodeJS web services, Swagger API documentation, and a ReactJS user interface. It is currently hosted in the SIPRnet environment on the TITAN network and can be accessed with a valid token by going to https://cognos-web.titan.nga.smil.mil/arsenal/.

ARSENAL

The Arsenal web application is a web-enabled version of the original Arsenal Excel tool written by "Siggy" that has been used by JNWC analysts. It allows users to determine the resiliency of blue systems to GPS jamming. The navigational components (antennas, receivers, electronics, etc) are grouped into known system configurations. These systems can then be selected and displayed in graph form to visualize their resiliency against GNSS jamming on given bands. These calculations are based on physics, rules-of-thumb, and test data when available.

Create A Ribbon Chart

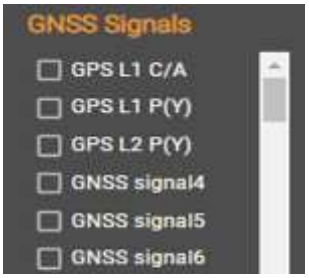
Make sure that the configuration panel (right) is open. If the panel is not displayed, click the gear icon next to the chart title. (see red box)

1

Select one or more Systems from the drop down. Search for a system by typing within the "Select Systems" text box.

2

Select one or more Signals from the Signal List by checking the checkboxes. There is limited data for non-GPS signals.

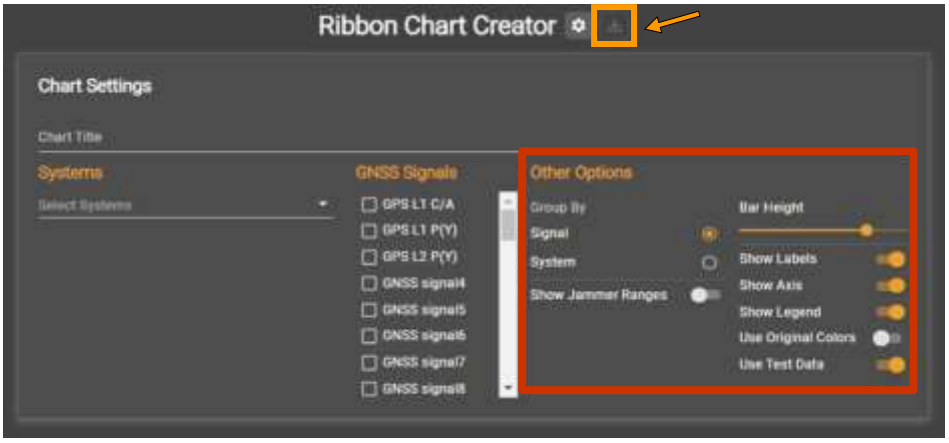


3

THAT'S IT! You can now see the Jammer to Signal (J/S) ratios that would affect the selected system for the given signals.

Customize

Within the configuration panel, a user may customize the look and feel of how the chart is displayed. Additionally, jammer ranges based on a given power level are available.



Export

A user may export the finalized product by selecting the download button next to the chart title. Select the desired output color and format to download the product.

The configuration panel will disappear when you download the product. A user can reopen the panel by selecting the gear icon next to the chart title again.

For system issues, bug reporting, and feature requests, please contact:

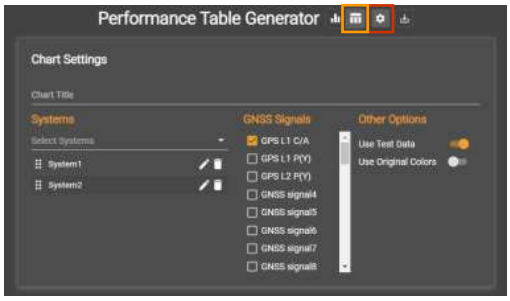
Ben Slaughter | bslaughter@icr-team.com | 720-751-2529 | 801-7833
Stephen Gurule | stephen.gurule.ctr@usspacecom.mil | 505-846-0595 | 919-6150

Create A Performance Table

Once a Ribbon Chart is created per the previous page, a user can view the Performance Tables of the selected systems and signals by clicking the "Performance Tables" button at the top of the control bar. Otherwise, Performance Tables can be created using this method.

Make sure that the configuration panel (right) is open and the Performance Table option (orange box) is selected. If the panel is not displayed, click the gear icon next to the chart title (see red box).

1

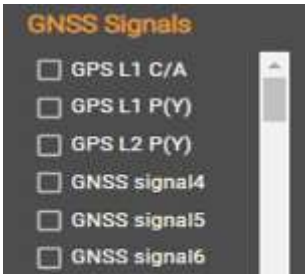


Select one or more Systems from the drop down. Search for a system by typing within the "Select Systems" text box.

2

Select one or more Signal from the Signal List by checking the checkboxes. There is limited data for non-GPS signals.

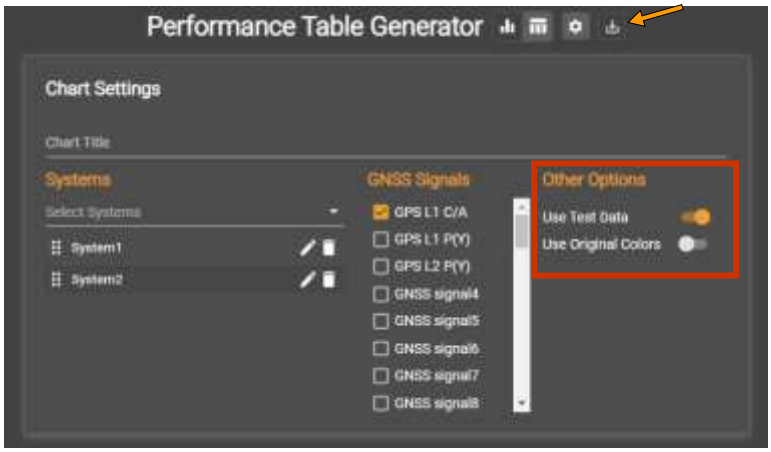
3



THAT'S IT! You can now see the Jammer to Signal (J/S) ratios and the system configurations for the selected systems and signals

Customize

Within the configuration panel, a user may customize the look and feel of how the table is displayed by using the "Other Options".



Export

A user may export the finalized product by selecting the download button next to the chart title. Select the desired output color and format to download the product.

The configuration panel will disappear when you download the product. A user can reopen the panel by selecting the gear icon next to the chart title again.

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