

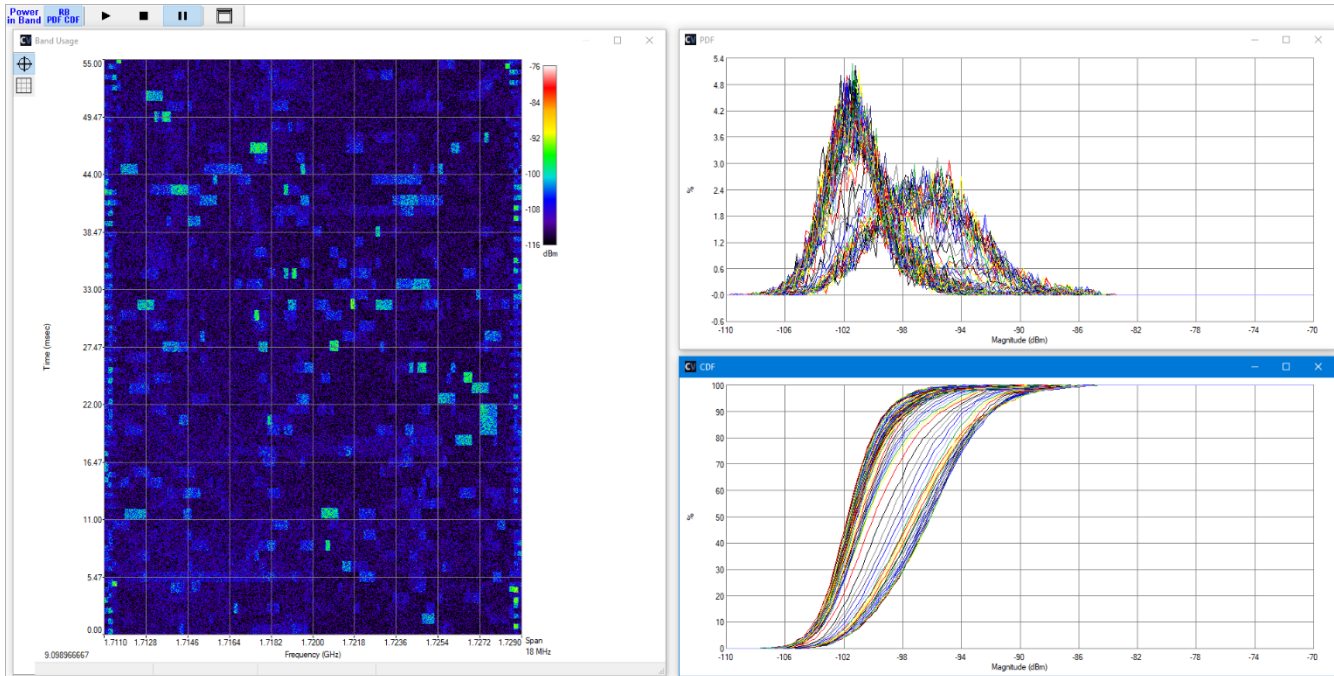
***Analysis tool for modern cellular systems including LTE and 5G*****Overview**

**CellVu** provides software tools for analysis of modern cell phone signals including LTE and 5G. This includes LTE & 5G Physical Resource Blocks Analysis as well as the ability to calculate Channel Utilization.

**CellVu provides PRB insights not available in other tools**

- A PRB is a resource block that spans both time and frequency dimensions.
- In the frequency domain, a PRB consists of 12 subcarriers.
- In the time domain, a PRB spans one slot, which in 5G corresponds to 1 ms for a normal cyclic prefix (the time taken for a signal to travel a specific distance).
- The scheduler in the 5G base station allocates PRBs to users based on their requirements, channel conditions, Quality of Service (QoS) needs, etc.
- For instance, if a user requires a higher data rate, it might be allocated more PRBs to use for its data transmission.
- Within each PRB, there's a specific amount of data that can be transmitted.
- The modulation and coding scheme (MCS) determines how much data can be packed into a PRB.
- Based on channel conditions, if the channel is good (less interference, better signal strength), a higher MCS can be used to send more data in the PRB.
- PRBs provide flexibility in resource allocation. They allow for dynamic assignment based on the instantaneous demands and conditions in the network.
- By allocating multiple PRBs to a user, higher data rates can be achieved. Conversely, when resources are scarce or when allocating them to other users, fewer PRBs might be allocated.

The screenshot on the following page shows how CellVu provides the critical insights needed to determine overall PRB utilization.



10 MHz 4G PRB Bandwidth Utilization Plot

A PRB in 5G is a crucial concept that dictates how resources (both in time and frequency) are allocated to users for data transmission. By dynamically allocating these PRBs based on various factors like user demand, channel conditions, and interference levels, 5G networks can achieve high efficiency, low latency, and high data rates, catering to diverse applications ranging from high-speed internet access to IoT communications.

CellVu provides a time-frequency-power waterfall plot showing how resources are allocated at any moment in time. Additional plots provide a Probability Distribution Function (PDF) and Cumulative Distribution Function (CDF) statistical analysis over a selected time duration. CellVu is a valuable tool for determining how the well the available spectrum is utilized within a cell coverage area.

*We can help you solve your most difficult RF spectrum challenges*

*For more information, please contact **ERISYS RF Solutions** for consultation and on-site demonstration.*

*We have decades of experience with EW oriented RF Spectrum Analysis and signal generation.*

You can reach us on the web at [www.erisys.com](http://www.erisys.com) or via email at [Sales@erisys.com](mailto:Sales@erisys.com).