

Remote Support with the APU Modeler

Introduction

The Fiber SenSys (FSI) Engineering Support Group works closely with our customers on a daily basis. Comprised of 5 full-time technical support personnel, the team provides technical support, product training, site commissioning and engineering support, and also communicates internally with our software and hardware engineers. This communication ensures that our final products are developed according to the field requirements of the customers. FSI also sends surveys to our customers to evaluate our products and to take requests for additional features.

One of the system calibration and tuning features that helps our engineering support team better serve customers is the recording and modeling feature. The 300 series Alarm Processing Units (APUs) are equipped with internal storage that allows the user to record and send spectral waveforms to our technical support team for analysis and adjustment. After receiving the data file, the support team makes accurate parameter recommendations with help from the innovative software function called the **APU Modeler**. This service is offered on an immediate basis and without charge, and it is indicative of our typical level of technical support responsiveness.

The APU Modeler Mode

The modeler mode is supplied with each of our configuration software applications, which are called **FD322 Tuning Software, SpectraView, and 500 Series Software Suite**. Although the modeler mode is available and functional for all users, it is primarily employed by the support team for the purpose of remotely solving nuisance alarm issues.

The APU Modeler mode allows the user to view an alarm causing event, make changes to the parameters that were previously uploaded to the APU, and view the impact on the saved waveform after making changes to the parameter set. The data analyst can then save the updated parameter set and return it to the end user to be deployed onto the APU in the field. The basic process for calculating the correct parameter set using the APU Modeler mode is as follows:

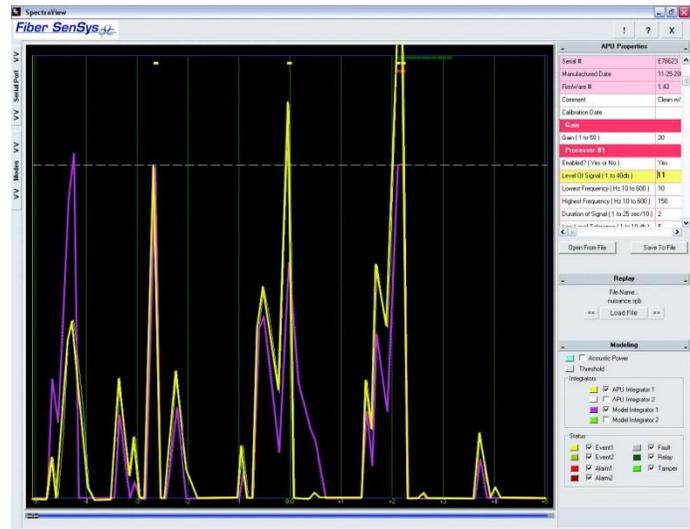
1. Extract or record nuisance alarm spectral recordings.
2. Extract or record valid intrusion attempts or simulations.
3. Open the nuisance recording, isolate the alarm causing processor(s), and make the proper changes.
4. Open the valid intrusion recordings and ensure that the changes have not prevented legitimate alarms.
5. Save the updated parameter set and return the results to the end user.
6. Load the parameters into the APU and verify success with performance testing.

Saving and Sending Spectral Data

Spectral data of both nuisance alarms and valid alarm events can either be manually recorded using the configuration software or be extracted from the APU's memory. Our FD300 series APU's are equipped with the ability to extract any of the previous 24 alarms and save them to a host computer. These alarm recordings take very little storage space and can easily be sent by email. For other APU's such as the 200 and 500 series models, the data files must be recorded by connecting a host computer to the processor and using the *RealTime* mode. Customers have frequently linked up their host machine with the "record" function enabled and left the computer running overnight or during a time when nuisance alarms are expected. After recording the nuisance alarm waveforms, it is very important to clearly label the files (for example: "zone4_nuisance_1.spb"). Sending multiple nuisance alarms recordings is recommended to establish the best analysis of the event.

The next step after recording nuisance alarms would be to record valid alarm events. Use *RealTime* mode to record valid intrusion simulations either by using the [Manual] or [Record] functions or by enabling recordings for both *Alarm1* and *Alarm2* processors. In both cases, a 10 second period of time will be recorded; when using the [Manual] or [Record] buttons, the recording begins 5 seconds before selecting the button and records for an additional 5 seconds. When enabling the *Alarm1* and *Alarm2* processors, the recording begins 5 seconds before an alarm occurs and records for an additional 5 seconds. Be sure to label the intrusion recordings as well (for example: "zone4_five_tap_test.spb").

The final step would be to organize the recordings and send them by email them to the FSI support department. To avoid confusion, ensure that the recordings are labeled well and organized in folder groups based by zone. We can then use the modeler to calculate an improved parameter set.

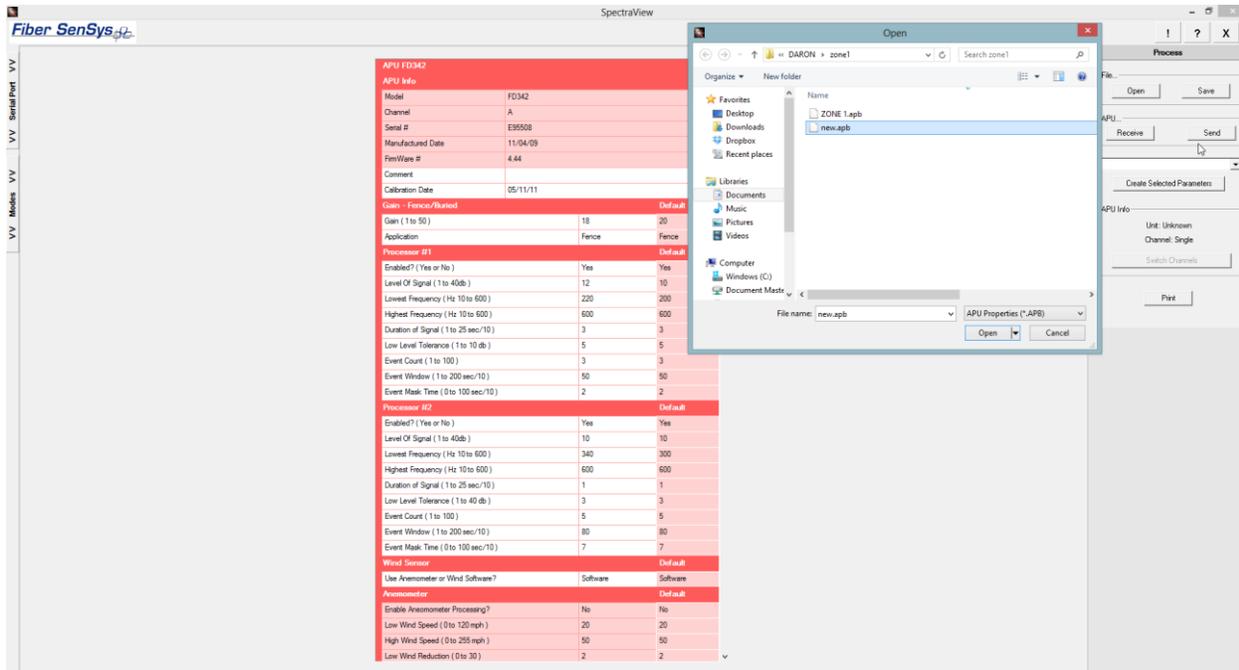


Updating Parameters

After we make adjustments to the parameter set we then can email back our recommendations for updating the APU. For the 300 series APUs, we can send back the changes in the form of an APU Parameter Editor .apb file, which can be loaded into the APU using the APU Parameter Editor mode by selecting the [Open] button, choosing the file, and selecting the [Send] button (see image below). For 500 series APUs, we would return the changes in the form of a screenshot to be manually updated using the 500 Series View program. In either case, the altered zones should be retested to ensure that the system performs correctly.

In rare cases, the nuisance recordings that were sent are of such high magnitude that a parameter set that would dampen the nuisance activity would also eliminate the valid alarm. However, there are still solutions

when this problem occurs. Our first request would be to check the fence-line for signs or loosened gates that could cause metal-on-metal interference during windy conditions. Secondly, we would recommend increasing the *Wind Software* parameter, which enables the APU to desensitize itself during wind-like spectral behavior. In any case, nuisance alarms should be validated as actual nuisances (caused by wind, animals, airplanes, or vehicles) before being classified as unwanted and being sent to us.



Conclusion

As outlined in our company's [Core Values](#), we are a customer-focused company. Therefore, we must do everything we can to ensure that the message of the customer is heard not just by the sales and support teams, but by every department. One way that we have address our customer's needs is by incorporating hardware and software features that were designed to allow us to better support our end users. The Engineering Support department takes pride in the work they do and feels privileged to provide quality guidance to our valued customers at no extra cost.

The APU Modeler mode and Spectral Data Storage features provide high-tech tools for our technicians to use while helping our customers. The modeler feature provides a perfect example of how the engineering and support teams have worked together to deliver a higher quality safety and security solution.

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