

RF Design Engineering Company and Certification Lab enabling Companies to get Products Designed, Tested and to Market



Ben Wilmhoff
President and Founder
BluFlux

CEOCFO: Mr. Wilmhoff, what is BluFlux?

Mr. Wilmhoff: We are an RF design engineering and consulting company, serving the mobile wireless, commercial, industrial, medical and defense industries, for RF antenna and electromagnetic design services.

We offer two services that most companies have to go out and find two different resources to fill. On one side is hardcore RF antenna and electromagnetic design and the other side is authorized certification of over-the-air (OTA) testing of mobile devices such as tablets, cell phones and wearables. Typically, when companies are in the process of releasing new mobile wireless products, they go out and find a large certification lab and when they uncover issues, then they have to go out and find a separate RF resource to help them fix the issues. BluFlux bring those two resources together to help companies from start to finish – to help them get their product designed, tested and to market.

CEOCFO: Has it always been the case that you offered both or did you realize over time that was a good direction for you?

Mr. Wilmhoff: We were quite young when we realized that the combination of RF design and testing was an opportunity in a niche that was not being filled. About this time two years ago, we were releasing a mobile wireless product and we were paying dearly for the test and certification service, and we uncovered multiple RF issues in our product. We were not getting any support or assistance from the certification lab. As RF engineers ourselves, we had more insight into this industry and the RF challenges and technologies that are specific to mobile wireless. We felt we could offer a really compelling service because we ended up figuring out on our own the technical challenges that were affecting our product. We realized that if we could do it for our products, we could also do it for other people's products as well. We were in the process of building out our own test facility at the time (which wasn't quite ready yet), for which we ended up seeking accreditation as a CTIA Authorized Test Lab (CATL). As we just announced a few weeks ago, we are now an A2LA-accredited laboratory for CTIA Over-the-Air performance of mobile devices, 2G / 3G / 4G - LTE testing and certification. Our A2LA accreditation acknowledges us as an ISO-17025 accredited laboratory, which is necessary prior to becoming a CTIA Authorized Test Lab. After our pending certification from CTIA, we will be able to offer certifying test and measurement services in addition to our suite of RF design services.

The RF design and engineering services we offer are not limited to mobile devices - cell phones and tablets. We recently had another exciting announcement about our partnership with Google's Advanced Technology and Projects (ATAP) group on Project Soli. We supported Google ATAP and the development of a key piece of a wearable sensor. The sensor is a low power radar for detecting hand and finger gestures and motions, as part of developing a new way to interact with mobile, wearable and Internet of Things (IoT) devices. BluFlux contributed to the design of two different radar sensor antennas and delivered working antenna prototypes of one of the early Project Soli sensors. As a small company, we were selected by Google when we were just three months old, and the connection has been very good for our business.

CEOCFO: What do you understand on a basic level about what you are working on, that others do not?

Mr. Wilmhoff: In our industry, there are many other people who are design focused. They are very product and user-experience focused. They are also very esthetically focused. There are app developers and Software as a Service

providers. Our industry is such that if you can do it on a cell phone with an app, then that app could take the place of otherwise expensive pieces of hardware, such as sensors or things that you would have to spend money on as a separate product. Many of these things are being integrated into cellphones or wearable devices. We have made a business out of helping companies navigate the importance of RF, antenna and electromagnetic design. Ultimately, what good is a mobile wireless device if you cannot actually get the data, the signal or the connection that you need back to the cloud through a WiFi, cellular or other wireless connection? We have built our business by becoming experts with those issues and helping people design through those challenges.

Our industry is one with government regulations around the amount of power that can be absorbed into the head or the amount of power that can be radiated at a certain frequency or the efficiency that a product must maintain. Those are all challenges for our customers. One opportunity that we are seeing is this push to open up the TV white space spectrum. This is a big challenge for mobile wireless companies, because while that spectrum is really good from a propagation perspective, (because it propagates over the air very efficiently), it is a real challenge to design an antenna that will fit into a small mobile device while maintaining the efficiencies that are required from cellular network providers and for battery life. It takes someone with years of experience and the ability to put the product through the paces with rigorous testing and certification. BluFlux offers both of those critical pieces of the puzzle.

Additionally, BluFlux offers unique expertise in the realm of ultra-wideband (UWB) antenna design and consulting. Ultra-wideband technology has the potential to impact many industries from healthcare to public safety and beyond. Ultra-wideband is ideal for precise, accurate radar, real-time location systems, high-bandwidth, low-power short-range communications, indoor localization and precision ranging, among others. There are many high-quality, commercial off-the-shelf (COTS) UWB antenna options, but making sure they perform in the installed environment is the big challenge and is absolutely critical - especially where performance can be a life or death situation as with indoor location for first responders.

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CEOCFO: On your site it indicates, “Control your schedule, budget and IP.” How do you help in that arena?

Mr. Wilmhoff: From an antenna design perspective, there are a handful of large antenna manufacturers out there. They are in the business of manufacturing mobile device antennas based on their patented processes or patented antenna technologies. Our approach is to put the customer’s needs first. We are not going to force a licensing deal down someone’s throat, because ultimately that is not good for the customer. We like to be manufacturer agnostic. We work with a number of different manufacturers, but we do have special relationships with one or two or them. However, we are very familiar with different processes, the capabilities, and the antenna styles and techniques that almost all of the manufacturers offer. That puts BluFlux in a position to recommend a manufacturer to our customers based on the customer’s needs or application, and whether it is a tablet or a wearable smartwatch, or a 900 megahertz radio for a smart meter. We are in a position to take a neutral approach, help with the design and certification work, and then guide our customers to the appropriate manufacturer based on their needs, applications and quantities.

CEOCFO: How are reaching out to potential customers and gaining traction?

Mr. Wilmhoff: We used to have a dedicated sales person, but that was not working for us so we tweaked our model. Right now our marketing activities are very much inbound. We rely on our website, social media and blog posts. We have five core values that drive our culture and our operations. One of those values is industry thought leadership. We want to be known as the team that knows more about this than anybody else, not because it is going to help us sell widgets, but because it helps us help our customers. Our value is expertise, so it is important to us to maintain helpful and humble approachability and to really hold true to the image of being experts in our field. We establish that through blogging, as well as updates to our website, and it is working for us so far.

CEOCFO: What surprised you as BluFlux has grown and evolved?

Mr. Wilmhoff: There is a part of our company that I have not talked about. The engineering services work that we do is to offset the cost of developing our own real-time location systems (RTLS) public safety product. What happens to a firefighter when he walks into a burning building? How do we know where he is? How do we maintain accountability for that firefighter’s whereabouts? That is our own product that we are developing and offsetting its cost through our

engineering and services side. We were put into a position because our group was a part of another organization that went away because they lost their investors. We found ourselves with a company that had a staff, payroll, assets and resources. We decided to leverage those resources and develop an interesting technology of our own. I went from a role as an engineering manager and a product line leader to a business leader and entrepreneur. When I first got into this, I relied on delegating and getting the information that I needed through team members, but I realized I had to keep a close pulse on the operation of the company. As a small company, I cannot be just a visionary with big ideas, so it surprised me how quickly our revenues started to improve when I started paying weekly attention to six or seven key metrics that make our engineering services business really shine.

CEOCFO: *Put it together for our readers. Why is BluFlux a noteworthy company?*

Mr. Wilmhoff: We help product developers launch wireless products faster. We offer two services - RF design and testing - that our clients cannot get anywhere else as a combined service.

Interview conducted by: Lynn Fosse, Senior Editor, CEOCFO Magazine



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