





# FREETV



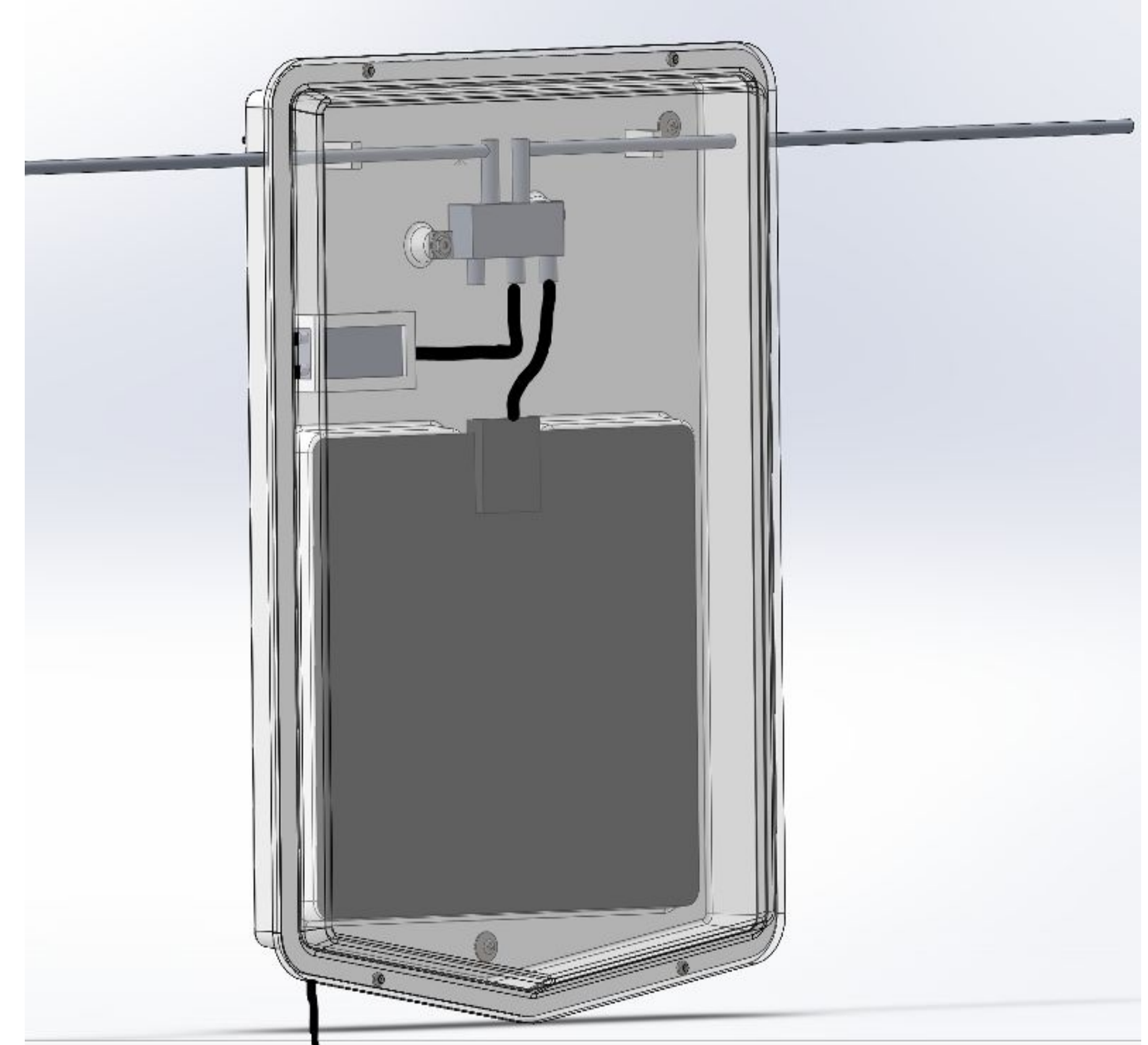
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Project Description	Design Advantages	Manufacturing	Testing
<ul style="list-style-type: none"> <li>FreeTV has designed a low cost, high performance, visually inconspicuous TV antenna</li> <li>Can reliably receive UHF and VHF bands</li> <li>Manufacturable in low to high volume production</li> </ul>	<ul style="list-style-type: none"> <li>60 mile range</li> <li>UV resistant</li> <li>Water resistant (IP45 rating)</li> <li>Similar to grid antenna using low profile leaf antenna</li> <li>Stucco mesh reflection improves signal reception</li> </ul>	<ul style="list-style-type: none"> <li>5x5 Flow waterjet and Prototrak DPM5 milling machine used for precision cuts</li> <li>ABS cement secures housing</li> <li>3D printed signal combiner supports</li> <li>Finished with sandpaper and color-matched paint</li> </ul>	<ul style="list-style-type: none"> <li>NanoVNA used to measure S11 reflection coefficient</li> <li>Strongest signal received when the antenna was 1" off a stucco wall</li> <li>Plywood was used as test stand to validate housing design</li> </ul>



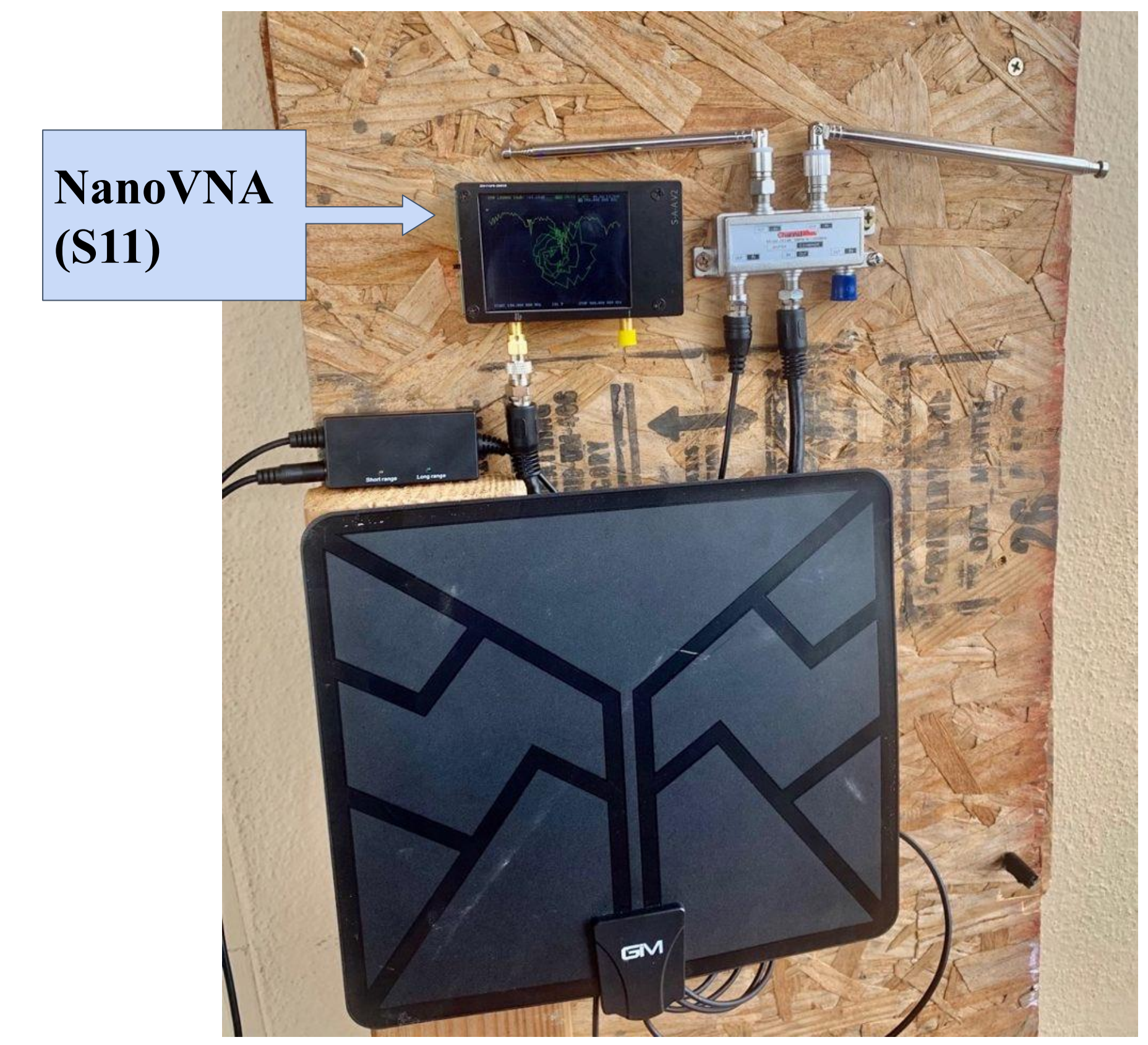
Final Prototype Assembly



Final Prototype Design



Prototype Water Jetting



"Off the Wall" Testing