The following photographs show how the Radiometrics Model MP183 Radiometer is built up starting with the VDI Mixer Front End.



Figure 1 183 Front-End From left to right: SMA-WG Launch, 45-degree twist, tripler, isolator, and mixer. The 45-degree twist is needed on the tripler input to accommodate cable routing limitations.



Figure 2 183 Front End with input isolator and feed horn added. Note: The input isolator is not used in the final design.



Figure 3 Thermally controlled RF Deck is machined to provide maximum contact with the Front End



Figure 4 Machined cover clamps the Front End to the RF Deck with even force across all components and increases thermal contact.



Figure 5 183 GHz RF Deck with Front End, LO Doubler Amp and IF-Detector Module installed.



Figure 6 183 RF Deck mounted in receiver case with all interconnects installed. Baseband Processor and cover removed.



Figure 7 View showing how Front End is clamped to RF Deck.



Figure 8 Baseband processor mounts on top of RF Deck. This PCB provides all thermal control and support electronics.



Figure 9 Side view with Baseband Processor installed.



Figure 10 183 GHz receiver mounted in radiometer frame. Frame includes power supply, antenna system with elevation scanning and 2 axis tilt sensor, and synthesizer for frequency agility.