Development of the laser altimeter (Proto-type Model) on board the SELENE lunar orbiter

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The laser altimeter (LALT) is one of nine instruments aboard the SELENE lunar orbiter launched on 2004. LALT's primary mission is to gather moon topographic data with a 5m vertical accuracy. The LALT utilizes a laser diode (LD) pumped Q-switched Nd:YAG laser. The laser have a wavelength of 1064nm, a pulse width of <15ns, one pulse energy of 100mJ. The output beam divergence is 0.3mrad, which resulted in a moon surface spot size (foot print) of 30m. We have developed the LALT proto-type model to confirm the basic design performances toward a real flight model. All environmental tests required for the LALT have carried out and ground based ranging test, data acquisition system check and EMC test are now being continued.