

## RF Attack Tables

Attack Type	Target Component	Wavelength	Distance	Required Power	Reference
Spoofing	Pressure sensor	655 - 800 MHz	0.2 m	Have not found exact value yet	[1]
Denial of Service	SPI or I2C channel between control unit and IMU	The exact value depends on board. Tested ranges are from 18 - 354 MHz	Real tests conducted @ 0.44 m and 2.4 m	The exact value depends on board. Arduino: ~30 dBm @ 2.4m Pixhawk4: 47x more power than Arduino DJI: 98x more power than Arduino	[2]
Spoofing	CCD Camera	Sweeping range from 20-100 MHz @ 0.1 MHz increments. Most cameras were vulnerable between 50-90 MHz	0 - 60 cm	Have not found exact value yet	[3]
Spoofing	LiDAR time-of-flight circuit	Sweeping range from 400-1000 MHz. Sensors found vulnerable @ 949.8 MHz, 960.9 MHz, and 977.4 MHz	2 m , 4 m, 6 m	maximum gain of 25 dB in real-world experiments	[4]

Attack Type	Target Component	Wavelength	Distance	Required Power	Reference
Spoofting	Power conversion system (AC-DC converter, DC-DC converter, current sensor, battery charger)	Frequency sweep from 50 MHz to 3 GHz @ 19 dBm power. DC-DC converters most vulnerable between 1-1.3 GHz AC-DC converters most vulnerable between 1.4-1.6 GHz Current sensors most vulnerable between 0.3-0.5 GHz Battery chargers most vulnerable between 0.7-0.9 GHz and 1.2-1.4 GHz	A battery charger was tested at range between 1-5 m. The authors note that the attack can be successful up to 2 m distance.	19 dBm	[5]

## Bibliography

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