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Cover Letter – Brief Description of Device Differences and measurement mode

IC Company Number 21407
FCC Company Number 2AJRS

TO WHOM IT MAY CONCERN

Our iSDR-G5 2D radar family covers 8 devices, that are electronically identical:

IC	FCC ID	list of HVIN
21407-ILDRG5	2AJRSILDRG5	iLDR-M-G5-DN050
		iLDR-M-G5-DN080
		iLDR-M-G5-DN100

The model number pattern is iLDR-M-DNxxx with

- xxx indicating the mounted lens antenna type, which is currently either "050", "080" or "100"

All 3 devices share the same measurement mode: FMCW as ramp up, ramp down or alternating ramps. The entire timing is controlled via a FPGA, a DDS and HF power switches. The latter only will activate the HF stage within the configured frequency limits. As a safety margin minimal 50MHz is allowed as tolerance and not used by the configuration. Thus the configuration is limited from 76.05GHz to 80.95GHz. The ramp slope must not exceed 100MHz/µs .

Certification has been done using the lens antenna with the highest gain: iLDR-M-G5-DN100. The other three lenses are smaller and have a smaller gain, resulting in equivalent smaller peak and mean power values.

During assessment the device has been tuned with the following parameters:
- FMCW: ramp-up
- Transmission is enables at 76.05GHz
- Transmission is disabled at 80.95GHz
- Ramp Slope: 100MHz/µs. resulting in 49µs Tx time
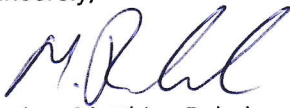- Measurement rate has been 1000Hz

The parameters result in a duty cycle of 5% (tx-time multiplied with measurement rate, relative to one second in percent). The productive used device configuration may only deviate:

- With a smaller duty cycle
- With a lower bandwidth, within the shown limits of 76.05 to 80.95GHz

With this policy, during assessment measured peak power values and measured mean power values are never exceeded. The upper limit of the ramp slope, which is the one shown at certification, the device will never overshoot neither upward nor downward modulated.

If you have any questions, please feel free to contact me at the address shown below.

Sincerely,

Dr.-Ing. Matthias Rabel
(VP R&D Embedded Hardware and Sensors)