Explore the next sense

Regulatory Summary - EN, FCC, CN, KR, JP

2022 Sep

Certification - Acconeer 60GHz PCR

- To bring a product emitting radio waves to the market it is required to certify or self-declare the device to assure that necessary regulatory conditions are met, and approvals have been obtained. The process for doing this varies between different geographical regions
- Acconeer supports its customers by testing and certifying its sensor and module products, check the data sheet of respective product for the latest status.

EUROPE, EN regulation – 60GHz SRD

- Acconeer A111 PCR SRD radar is compliant towards the European commission radio equipment directive (RED) 2014/53/EU. https://ec.europa.eu/growth/sectors/electrical-engineering/red-directive_en

- The efficient use of radio spectrum, the harmonized standard:
  - ETSI EN 305 550 V2.1.0 https://www.etsi.org/deliver/etsi_en/305500_305599/305550/02.01.00_20/en_305550v020100a.pdf
  - ETSI EN 305 550-2 V1.2.1, https://www.etsi.org/deliver/etsi_en/305500_305599/30555002/01.02.01_60/en_30555002v010201p.pdf

  are applicable in the case of Acconeer's products. This standard is produced by the European Telecommunications Standards Institute (ETSI), which works under mandate form the European commission

- The CE marking, which is required to set a product on the EU market, is a manufacturer self-declaration with NB assessment that the product meets the essential requirements in RED Article 3, which includes electromagnetic compatibility and protection of health and safety.

- Acconeer XM122 and XM132 modules are CE marked with NB certification retrieved.

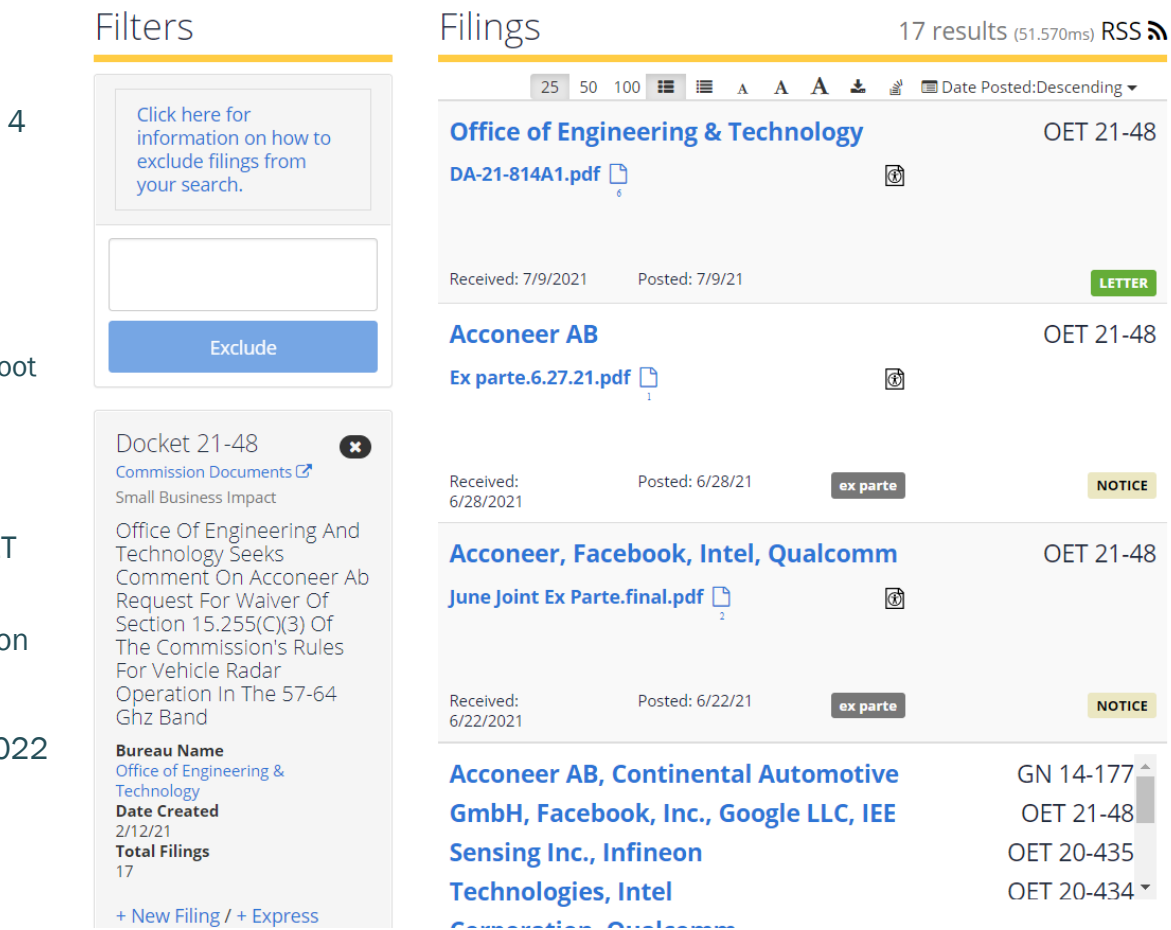
- Acconeer member of ETSI and are supervising.

US, FCC regulation – 60GHz SRD

- The Acconeer A111 sensor has modular approval granted by FCC (FCC ID: 2AQ6KA1001) i.e. The A111 sensor meets the title 47 of the Code of Federal Regulations, part 15 section 15.255 for intentional radiators operating in the 57-71 GHz band for the following type of applications.
  - Field disturbance sensor employed for fixed operations.
  - Short range device for interactive motion sensing
- Acconeer have filed waiver addressing automotive applications. The waiver have been approved by FCC. Note that similar waivers have been approved for Tesla, IEE, Vayyar among others.
- Acconeer member of the Co-existence group and are attending regular meetings.
- On July 13th -2021 NPRM (Notice of Proposed Rulemaking) was issued for the 60GHz by FCC. The commission general proposal is to align its rules with ETSI standard. If FCC proposal is accepted and adopted there will be no limitation on use cases. FCC staff are working on a summary of the NPRM comments for the chairwoman. Expect updated regulation Q3-Q4 2022.
  - Acconeer has submitted Comment and Reply to comment for the NPRM proposal. 28 parties filled support for pulsed radar and Acconeer during the Reply to comment period
  - Acconeer has held meetings with FCC and specific industry parties with the purpose of finding a solution to the update of the rule
- On October 10th- 2022 Acconeer reached agreement among Intel, Meta, Qualcomm, and Acconeer for new FCC regulations.
  - Next step will be to discuss with FCC how to proceed. One option is to submit a waiver.

Docket 21-48

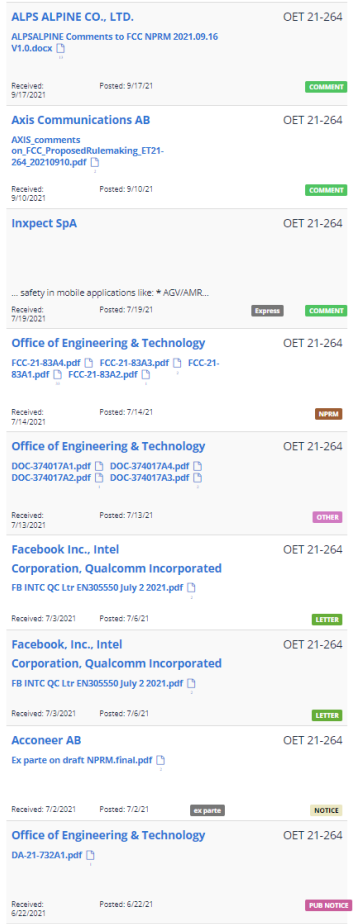
- Acconeer waiver request December 2020 for 4 Automotive use cases
  - Passenger presence detection
  - Seat belt reminder/airbag suppression
  - Intruder alarm
  - Automotive access gesture control to detect foot movement to close a sliding door
- Endorsement from Volvo, Nexty, Alps Alpine, Alliance for Automotive innovation
- Several meeting in CSG and with FCC and OET
- In detail meetings with Qualcomm, Intel and Facebook to agree on Acconeer waiver solution
- Waiver granted 9th of July 2021
- Modular approval obtained 3rd of February 2022



Docket 21-264 Amendment of Section 15.255 of the Commission's Rules

2021

- On July 2nd Acconeer met with OET to provide comments on draft NPRM (Notice of Proposed Rule Making)
- FCC issued final NPRM on 13th of July 2021
- Acconeer filed comments to NPRM 20th of September
- Acconeer filed Reply comments on the 18th of October 2021
  - 28 parties filed Reply comment in support of Acconeer



Docket 21-264 Acconeer activity 2022

- Several meetings with FCC chairwoman's office and OET
- Proposal for updated rule for field disturbance sensor filed May 10, focused on pulsed radar

> **Proposed rule**: *For field disturbance sensors that limit their operation to the 57-64 GHz frequency band and have a maximum pulse duration of 6 ns, the average EIRP shall not exceed 13 dBm and the transmit duty cycle shall not exceed 10% during any 0.3 µs time-averaged windows.*

- Several meetings with IMQ on the proposal and its impact on 802.11ad/ay
- Reoccurring meetings with radar companies on general solution for radar
  - Joint letter filed on the 7th of June explaining impact on use cases from limiting transmission time

Intel, Meta, Qualcomm, and Acconeer agreement

- On November 10th 2022 an industry agreement was reached for pulsed radar operation for update of 15.255 rules
- Acconeer is exploring options with FCC for how these rules can be put into affect swiftly.

Technical Parameter[5]	Permissible Pulsed Radar Operations
Operating frequency high	64 GHz
Operating frequency low	57 GHz
Duty cycle	10%, evaluated in any 0.3 µs time window
Average EIRP	13 dBm, evaluated in any 0.3 µs time window, and the average integrated EIRP within 61.5 to 64.0 GHz shall not exceed 5 dBm in any 0.3 µs time window
Pulse duration	< 6 ns
Peak EIRP	Peak RF emissions must not exceed 20 dB greater than the maximum permitted average emission limit applicable to the equipment under test

China regulations - 60GHz SRD

The main Regulatory Authorities for radio products in China

1. **MIIT** (Ministry of Industry and Information Technology): MIIT publish national-level regulations (RF) and manage spectrum allocation
2. **SRRC** (State Radio Regulations Committee): SRRC governs frequency usage of wireless equipment and act as a certification body for wireless approval in China.
3. **SRTC** (State Radio Monitoring Center Testing Center):. SRTC undertake national-level research projects on behalf of the government.

60GHz regulatory status

- Oct 2006: 59-64GHz made available for SRD.
- Dec 2016: Low power SRD no longer require approval by SRRC
- 2020, the SRRC unexpectedly and without clear explanation started to put all type approval applications for 60GHz SRDs, including radars, on hold until further notice.
- High lobbying activity on 60 GHz applications by a number of domestic and overseas companies
- Jul 2022: Comments on the draft of the Revision of the Spectrum of the People's Republic of China submitted to SRRC (bu ALPS, Lumi, Kohler, Alibaba, Huawei …)
- mmWave white paper to be addressed in upcoming TIAAA conference, date not confirmed. Note, has been postponed due to lockdown.

Sounth Korea 60GHz certification

- Following EN regulation – SRD 60GHz.
- Certification within country testing.
- Recommendation to utilize HCT as test house.
- Note: Customer certification done and pass (CE).

Japan regulations

- Acconeer has obtained certification of construction design for **Carrier sense**
  - The category of 57-66GHz with carrier sense enforced 2020. (https://www.soumu.go.jp/main_content/000666150.pdf) (https://www.soumu.go.jp/main_content/000666744.pdf)
- New rule for the category of 57-64GHz without carrier sense for **Pulse modulation** released. Acconeer A111 certification done Q2 2022.
- Partly compliant following Bijaku extreme low power device (**ELP**)
  - License exempt and do not require certification
  - Voluntary certification and registration ELP mark
- Note: Customer certification done and pass (ELP).

Parameter	**Ministerial ordinance No.2020-4 Ministerial Notice No.2020-15〜22 (Carrier sense)**	**Ministerial ordinance No.2021-87 Ministerial Notice No.2021-307 (Pulse modulation)**
Operating frequency range	f(Lowest) ≥ 57 GHz f(Highest) ≤ 66 GHz	f(Lowest) ≥ 57 GHz f(Highest) ≤ 64 GHz
Peak EIRP	-	17 dBm
Average EIRP	-	5 dBm
Peak antenna power	250 mW	12 dBm
Average antenna power	-	0 dBm
Spurious emission	-30dBm/MHz (30 MHz-55.62 GHz) -26dBm/MHz (55.62 GHz-57 GHz) -26dBm/MHz (66 GHz-67.5 GHz) -30dBm/MHz (67.5 GHz-110 GHz)	-30dBm/MHz (30 MHz-55.62 GHz) -26dBm/MHz (55.62 GHz-57 GHz) -26dBm/MHz (64 GHz-67.5 GHz) -30dBm/MHz (67.5 GHz-110 GHz)
Receiver spurious emission	20 nW/MHz (40-110) GHz	-30dBm/MHz (30 MHz-55.62 GHz) -26dBm/MHz (55.62 GHz-57 GHz) -26dBm/MHz (64 GHz-67.5 GHz) -30dBm/MHz (67.5 GHz-110 GHz)
Duty cycle	-	10%
Carrier sense	Yes	No
Antenna gain	>10 dBi	-