



Operation and Maintenance Manual

Supplemental Information

Regulatory Compliance Information



Regulatory Compliance Information

Radio Frequency Components

Cat® B7 Object Detection Radar

Table 1

Model	Cat Part Number
B7	507-5550
	610-9088
	634-9367



WARNING

This equipment is equipped with a radio frequency device(s). When electric detonators are being used for blasting operations, radio frequency devices can cause interference, which can result in serious injury or death. Caterpillar recommends that the end user perform their own risk assessment to determine a safe operating distance, and, at all times, maintain the radio frequency device outside the distance mandated under all applicable national or local regulatory requirements.



WARNING

Explosion Hazard!

Connecting or disconnecting a live device in an area with volatile or flammable gases may cause an explosion resulting in serious injury or death.

Do not disconnect the device unless external power has been disconnected or unless the area is free of ignitable concentrations.

NOTICE

The transmission of information from this radio frequency device may be subject to various legal requirements depending on the jurisdiction in which the equipment outfitted with the device is located. These legal requirements may include, but are not limited to, radio frequency use authorization. The transmission of information from this device must be limited to those locations where all legal requirements for the use of this device and communication network have been satisfied.

Note that if the equipment outfitted with this device is located in or relocated to a location where (i) the transmission of information from the device would not comply with the legal requirements of the local jurisdictional or (ii) the transmission or processing of such information across multiple locations would not be legal, Caterpillar disclaims any liability related to such failure to comply, and Caterpillar may discontinue the transmission of information from that equipment. Consult your Cat dealer with any questions that concern the operation of this system in a specific jurisdiction.

Reference: Refer to the Operation and Maintenance Manual of your product for additional information.

sDoC: (Simplified Declaration of Conformity)

European Union



Caterpillar Inc. 100 NE Adams Peoria, IL
61529 USA

Hereby, Caterpillar Inc. declares this radio equipment is in compliance with directive "2014/53/EU". The full text of the European Declaration of Conformity is available at the following web address:

<https://www.cat.com/radio-compliance>

Great Britain



Caterpillar Inc. 100 NE Adams Peoria, IL
61529 USA

Hereby, Caterpillar Inc. declares this radio equipment is in compliance with the relevant statutory requirements. The full text of the

Great Britain Declaration of Conformity is available at the following web address:
<https://www.cat.com/radio-compliance>

Caterpillar suggests that the Declaration of Conformity is obtained shortly after purchase.

Specifications

B7 Object Detection Radar Device (Module to increase work sight safety measures and alerting machine operators to potential hazards around machinery by increasing operator visibility during machine operation)

SMCS Code: 1439

The CAT® B7 is an off the shelf automotive RADAR operating at 77GHz and designed to meet the latest worldwide automotive regulations. The CAT® B7 complies with the requirements of 77GHz Vehicle Radar Systems of most countries including Europe and the Americas. CAT® B7 has increased detection range, better object separation in multiple target environments, and more precise detections in blind spot warning and rear cross traffic alert.



Technical Specifications:

Table 2

Operating Characteristics / Specifications	
Input Nominal Voltage	12Vdc
Voltage Range	9-16 Volts (Regulated)
Power Consumption	6.3 Watts
Input Current	0.53A avg/0.75A peak
Operating Frequency	76.01 – 76.99 GHz
Nominal Frequency	76.5 GHz
Detection Range	21.5 cm - 80 m
Range Resolution	+/- 17.6cm

Angle Accuracy	+/- 2°
Signal to Noise Ratio (SNR)	> 60 dB
Numbers of Targets	20
Transmit Power Output (EIRP)	+25dBm
Target Information	Range, Bearing, Velocity

Environmental Specifications:

Table 3

Operating Characteristics / Specifications	
Operating Temperature	-40°C to +85°C
Storage Temperature	-50°C to +85°C
Humidity	90% Relative Humidity
Vibration*	15.3 Grms random [24-2000Hz]
Sealing	IP67, IPX9k
Salt Spray	5% NaCl for 500 hours

*Note: Component needs to be isolation mounted from vehicle frame

Connector Pinout:

Table 4

Pin Number	Signal Name	Description
1	GND	Ground
2	CANH*	CAN high
3	CANL*	CAN low
4	V BATTERY**	12 V Regulated
5	MPIO_1	Digital sensor ID
6	MPIO_0	Digital sensor ID

* B7 does not contain CAN termination resistance. Ensure system harness resistance equals 60 Ω for proper operation.

**Recommend use of 24/12Vdc or equivalent power converter.

Certification Notices:

Canada Notice to Users

Operation is subject to the following two conditions:

- This device may not cause interference.
- This device must accept any interference, including interference that may cause undesired operation of the device.

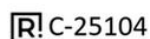
FCC Notice

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause interference.
- This device must accept any interference received, including interference that may cause undesired operation.

Certification Markings

Angola – This device is approved for use in Angola.
Type Approval ID: 112



Argentina – This device is approved for use in Argentina.
Certificate ID: DI-2023-5782-
APN-DNAYRT#ENACOM

Armenia – This device is approved for use in Armenia.
Certificate ID: AST-016/S.A-0273-2023



Australia – This device is approved for use in Australia.

Azerbaijan – This device is approved for use in Azerbaijan.
Certificate ID: AZ 031.55.02.00297.24 (Safety)
Certificate ID: AZ 031.55.02.01652.23 (RF)

Bahamas – This device is approved for use in Bahamas.
Type Approval ID: URCA_TA/2015_063

Bahrain – The device is approved for use in Bahrain.
Type Approval #: DLM/ 1630
Reference No.: 3814000

Barbados – This device is approved for use in Barbados.
MED Approval #: 1948

Belarus – This device is exempted for use in Belarus.
Certificate ID.: 299/1

Bolivia – This device is approved for use in Bolivia.
Certificate ID: ATT-DTLTIC-RA-H-TL LP
8/2024



Botswana – This device is approved for use in Botswana.
Certificate ID:
BOCRA/TA/2021/6598



Brazil – This device is approved for use in Brazil.
Certificate ID: 12187-20-12386

Brunei – This device is approved for use in Brunei.
Certificate ID: DTA-006216

Cambodia – This device is approved for use in Cambodia.
TRC ID: 0079-2016-MMRV1

Canada – This device is approved for use in Canada.
IC ID: 8436B-77MMRV1

Cayman Islands – This device is approved for use in Cayman Islands.
Certificate ID: KY715076800



Chile – This device is approved for use in Chile.
SUBTEL No. 91.168 de
10.06.2015

China – This device is approved for use in China.
CMIIT ID: 2022LJ6554

Colombia – This device is approved for use in Colombia.
Certificate ID: GD-012636-E-2018

Congo (Dem. Republic) – This device is approved for use in Congo.
Certificate ID: HER – 042/Fevrier/2023

Costa Rica – This device is approved for use in Costa Rica.
Certificate ID: 00808-SUTEL-DGC-2019

Dominican Republic – This device is approved for use in Dominican Republic.
Certificate ID: DE-0000002-16

Egypt – This device is approved for use in Egypt.
Type Approval #: TAC.06111613649.WIR

El Salvador – This device is approved for use in El Salvador.

Ethiopia – This device is approved for use in Ethiopia.
Type Approval #: 1875/2022

French Polynesia – This device is approved for use in French Polynesia.
Type Approval #: ANFR/APF/2015.033/SR

Gabon – This device is approved for use in Gabon.
Certificate ID: 472/ARCEP/2022

Guatemala – This device is exempted for use in Guatemala.
Correlativo No.: SIT- DH – 000 - 2019

Haiti – This device is approved for use in Haiti.
Ref. No.: CNT/DG – 131 – 19

Hong Kong – Covered under Declaration of Conformity.

Israel – This device is certified and approved for use in Israel.
Certificate ID: 56-00351

Ivory Coast (aka Cot'e d'Ivoire) – This device is certified and approved for use in Ivory Coast.
Certificate ID: 21 01605

Jamaica – This device is certified and approved for use in Jamaica.
Covered under Type Approval Certificate

Japan – This device is approved for use in Japan.
Type Approval #: TAC. 202-LSG045

Jordan – This device is approved for use in Jordan.
Type Approval #: TRC/32/6775/2022

Korea (South) – This device is approved for use in South Korea.
Certificate ID: MSIP-CMM-A1r-77GHZMMRV1

Kuwait – This device is approved for use in Kuwait.
Type Approval #: 6039

Laos – This device is approved for use in Laos
Certificate ID: 0005/DRF

Lebanon – This device is approved for use in Lebanon.
Type Approval #: E600591006

Macao (Macao) – No Approval is required.

Mali – This device is approved for use in Mali.
Certificate ID: No2021-07-0070/AMRTP-P

Mexico – This device is approved for use in Mexico.
Certificate ID: IFT/223/UCS/DG-AUSE/ 3911 / 2018



Moldova – This device is approved for use in Moldova.
Certificate ID: MD OC TIP 024
CET 7838-23

Mongolia – This device is approved for use in Mongolia.
Certificate ID: A20000154

Namibia – This device is approved for use in Namibia.
Type Approval #: TAP/04/2022/VEONEER US, INC

New Zealand – This device is approved for use in New Zealand.

Nicaragua – This device is approved for use in Nicaragua.
Certificate ID: NCG-CE-19-060

Oman – This device is approved for use in Oman.
Type Approval Certificate ID: TRA/TA-R/2706/15



Pakistan – This device is approved for use in Pakistan.
Type Approval #: 9.9284/2019

Panama – This device is approved for use in Panama.
Type Approval #: 2009



Paraguay – This device is approved for use in Paraguay.
Certification ID: 2020-07-I-0510 y 2015-07-I-0000194

Peru – This device is approved for use in Peru.
Type Approval #: TRFM48609



Philippines – This device is approved for use in Philippines.
Type Acceptance Certificate
ID: ESD-1510921C

Qatar – This device is approved for use in Qatar.
Type Approval #: CRA/SA/2015/R-4923



Russia – This device is approved for use in Russia.
Certificate ID: 77-18/0077/4332

Saudi Arabia – This device is approved for use in Saudi Arabia.
Certificate ID: 2022-2733



Serbia – This device is approved for use in Serbia.
Certificate ID: 34540-104/21-7

Somalia – This device is approved for use in Somalia.
Type Approval #: NCA/TA/0187/2023

South Africa – This device is approved for use in South Africa.
Type Approval #: TA-2015/2087

Sri Lanka – This device is approved for use in Sri Lanka.
Certificate ID: TRC/SM/TA/0041/23-0114

Sint Maarten – This device is approved for use in Sint Maarten.
Type Approval ID: 2015/042-a/TA

Taiwan – This device is approved for use in Taiwan.
Type Approval ID: CCAE15LP1370T7



Thailand – This device is approved for use in Thailand.
Certificate ID: A57008-16

Trinidad and Tobago – This device is approved for use in Trinidad and Tobago
Certificate ID: 2/2/1/37/6.55



Ukraine – This device is approved for use in Ukraine.
Certificate ID: 2288.8-CET

United Arab Emirates (UAE) – This device is approved for use in UAE.
Certificate ID: ER96352/21



United States – This device is approved for use in the United States.
FCC ID: WU877MMRV1

Uruguay – This device is approved for use in Uruguay.
Certificate ID: 243/DAE/20125



Vietnam – This device is approved for use in Vietnam.
SELF-ASSESSMENT RESULT
ACCORDING TO TECHNICAL
STANDARD / REGULATION

Số / Ref. No.: QCVN 124: 2021 / BTTTT

Zimbabwe – This device is approved for use in Zimbabwe.
Certificate ID: POZ454