

Descartes IoT DMR (Descartes Mobile Reader) Hardware Specification



Images are indicative only, actual product may vary

Name of the Product:	DMR (Descartes Mobile Reader)
Model:	DMR001
Revisions:	DMR001 - POC
Description:	The DMR is a Mini Descartes IoT Reader used to monitor movement of goods and equipment with attached Core Tags.
Size:	TBD
Case Rating:	TBD
External Power:	Device can be charged or powered via USB Type-C connector. Up to 5V 1A draw
Battery Power Supply:	The main power source is a rechargeable lithium polymer (Li-Po) battery. The battery has a nominal capacity of 3400mAh and can be recharged through USB.

Solar (Outdoor version):	Solar charging provided by 1.3W 6V Monocrystalline solar panel
Power Consumption:	~4mA – Idle ~20mA – Max
Temperature Range:	TBD
Reader Weight:	TBD

Cellular

Module:	DMR uses the nRF9160 System-in-Package (SiP). Integrated low power LTE cellular technology, onboard processing and built in GPS
CPU:	64 MHz Arm® Cortex®-M33 CPU (TrustZone) with 1 MB Flash & 256 KB RAM
Modem:	Multimode LTE-M/NB-IoT modem with integrated RF front-end
Modem Frequency range:	700-2200 MHz LTE
Supported LTE Frequencies:	Cat-M1: B1, B2, B3, B4, B5, B8, B12, B13, B14, B18, B19, B20, B25, B26, B28, B66 Cat-NB1/NB2: B1, B2, B3, B4, B5, B8, B12, B13, B17, B19, B20, B25, B26, B28, B66
Cellular Sensitivity:	LTE-M: -108 dBm NB-IoT: -114 dBm
Cellular Max Power Output:	+23 dBm output power
Modem Throughput (DL/UL)	LTE-M: 300/375 kbps NB-IoT: 30/60 kbps
Cellular Antennas:	Integrated LTE-M/NB-IoT/GPS chip antenna
SIM Card Size:	Nano/4FF Subscriber Identity Module (SIM) card slot
Cellular SIMS supported:	Supports SIM and eSIM with an ETSI TS 102 221 compatible UICC interface

GPS Sensitivity: GPS: -155 dBm

Bluetooth

Module: nRF52840

Bluetooth Type: Bluetooth Low Energy 5.1

Bluetooth Sensitivity: -98dBm

Bluetooth Max Power Output: +4 dBm

Bluetooth Antenna: Integrated BLE chip antenna

Other Features:

Indication LEDs: Blue and Green/Red

Sensors: Temperature, humidity, air quality, air pressure, Low-power accelerometer, High-G accelerometer, color and light sensor

Additional Features: Magnetic buzzer

Certifications:

DMR001 (Descartes Mobile Reader)	CE / RoHS	Complies
	FCC Intentional radiator Part 27 (TNB equipment class)	Passed Intentional radiator Part 27 (TNB equipment class)
	FCC Unintentional radiator Part 15B (Class B Digital Device: JAB equipment Class)	Passed Unintentional radiator Part 15B (Class B Digital Device: JAB equipment Class)
	FCC Unintentional radiator Part 15B (Receiver working in frequency range 30-960 MHz)	Passed Unintentional radiator Part 15B (Receiver working in frequency range 30-960 MHz)
	CE nRF9160 SiP EU declaration of Conformity	Passed nRF9160 SiP EU declaration of Conformity
	CE nRF9160 SiP certificate	Passed nRF9160 SiP certificate
	CE nRF9160 DK EU declaration of Conformity	Passed nRF9160 DK EU declaration of Conformity
	CE nRF9160 DK certificate	Passed nRF9160 DK certificate
	CE Nordic Thingy:91 EU declaration of Conformity	Passed Nordic Thingy:91 EU declaration of Conformity
	UKCA (United Kingdom)	Passed UKCA (United Kingdom)
	ISED (Canada)	Passed ISED (Canada)
	ACMA RCM (Australia)	Passed ACMA RCM (Australia)
	NCC (Taiwan)	Passed NCC (Taiwan)
	IMDA (Singapore) B3	Passed B3
	IMDA (Singapore) B8	Passed B8
MIC (Japan) Radio	Passed Radio	
MIC (Japan) Telecommunication	Passed Telecommunication	
MIC (Japan) Antenna usage declaration	Passed Antenna usage declaration	

MSIP (South Korea)	Passed PDF
IFT (Mexico)	Passed IFT (Mexico)
ICASA (South Africa)	Passed ICASA (South Africa)
NBTC (Thailand)	Passed NBTC (Thailand)
GCF	Certified GCF
PTCRB	Certified PTCRB
CE / RoHS	Complies