



MARCUS® 3G GPRS Technical Description and Specifications

Description of Views

Pictures and Diagram of the MARCUS® 3G Radio

**Top View with LEDs
MARCUS® 3G Radio Module**

- USB: USB Connector Port
- SIM DOOR: SIM Tray
- PWR: Device is powered
 - GREEN Permanently ON - Device Functional
 - Permanently OFF - No Power or Device Nonfunctional
- GPS: GPS fix is valid
- RADIO: GPRS modem transmitting
- COM: Device online with MARCUS® Servers
- ENG: Ignition is powered
 - GREEN Permanently ON - Engine ON
 - Permanently OFF - Engine OFF

MARCUS® 3G Radio Module Top View



**Back View Connector Layout
MARCUS® 3G Radio Module Back View**

Left Connector: (8 pin) Power 12 Volts DC 3 wire install with optional Aux lines 3 Inputs / 2 Outputs

NOTE: Power connection must be wired in the following manner:

- RED Wire = Constant 12 Volts, Pin 7
- Black Wire = Chassis Ground, Pin 8
- White Wire = Switched Ignition, Pin 6

RS-232/DB9 Port: Serial port connector

Center Connector: GPS Connector / SMB Male Snap-on
Right Connector: RF Connector / SMA Female Screw-on

MARCUS® 3G Radio Module Back View



Dimension: 1.375" H x 3.375" L x 4.75" W

MARCUS® 3G Radio Module Wiring Diagram

Combo GPS - Radio Antenna: Glass mount with tape side toward the glass on lower passenger side windshield.

NOTE: Sensors are connected through Pin 1-5. Power connectors are through Pins 6-8.

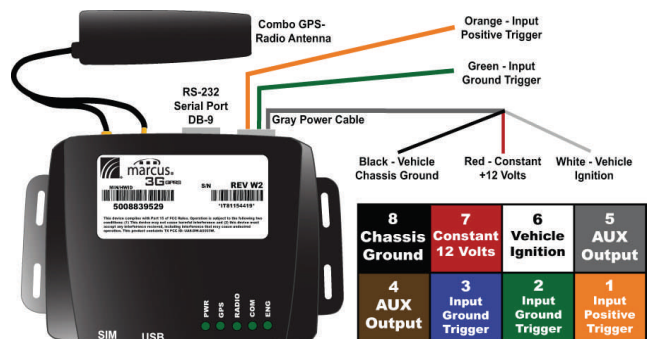
AUX/I Orange wire; Pin 1 can be configured to monitor powered sensors (+12 Volts trigger).

AUX/I Green wire; can be configured to monitor negative sensors (Ground trigger).

Recommended that Constant and Switched power be wired through a fused circuit (in-line fuse, 3 amps).

Important: Failure to properly wire the MARCUS® 3G Module will cause faulty operation.

**MARCUS® 3G GPRS Radio Module
DW-A0003-W2**





MARCUS® 3G GPRS Technical Description and Specifications

MARCUS® 3G GPRS Device FCC ID (UA80DW-0003W)

Manufacturer - Discrete Wireless, Inc. DW- A0003W2

Processor: ARM® Core, Blackfin® DSP
Dimension: 1.375" H x 3.375 L x 4.75" W
Weight: 5.7 ounces
Power: 9-26 Volts
Data Storage: Yes
Aux I/O: 5 port on power connector
USB Port: 1-Load 115.2 kbs 2-NMEA 4800bps
SIM Door: SIM Card tray externally accessible
RS-232 DB9 Port: Serial Connector

Wireless Modem

Type - Siemens Quad-band GSM/GPRS Radio Module

Frequencies: 850/900/1800/1900 MHz GPRS
Supply voltage: 3.3 - 4.5 V
Power Consumption:

- Power down \leq 50 mA
- Sleep mode \leq 30 mA
- GPRS class 12 600 mA

Operating Temperature:

- Normal operation: -30°C to +75°C
- Restricted operation: -30°C to 85°C
- Switch off: +90°C
- Storage: -40°C to +85°C

Specs for GPRS:

- GPRS class 12: max. 85.6 kbps
- Mobile station class B
- PBCCH support
- Coding schemes CS 1-4

Approvals: R&ETTE, FCC, UL, IC, GCF, PTCRB, e-mark, CE

GPS Receiver

Manufacturer - U-blox GPS Receiver Module ANTARIS®

L1 frequency, C/A code, 16 channel

Accuracy: Position 2.5 m CEP

Start-up Times:

- Hot start <3.5 sec
- Warm start ~ 30
- Cold start ~ 35 sec
- Aided start ~ 5 sec

Signal reacquire: < 1 s

Sensitivity:

- Normal mode - 146 dBm
- High sensitivity - 150 dBm
- Weak signal tracking - 158 dBm

Power Supply: 2.3 - 3.6 V

Power Consumption:

- typ. 141 mW @ 3.0 V
- typ. 127 mW @ 2.7 V
- Sleep mode: typ. 100mA

Protocols: NMEA, UBX binary, RTCM

Operating Temp: -40°C to 85°C

Storage Temp: -40°C to 125°C

Vibration: 5Hz to 500 Hz, 5g

Shock: Half sine 30g/11ms

GPS - RF Antenna

Manufacturer - ARC Wireless Solutions, Inc.
ARC VLPA™ Wedge Mobile Antenna

GPS Electrical Specifications

Antenna Gain: 27 dB typ.

LNA Supply Voltage: 3.3 +/- 0.6 V or 5 V +/- 1 V

LNA Current Consumption: 9 mA typ., 12 mA max.

Cable Type: 8 ft

Standard Connectors: SMB Female Snap-on

GSM/GPRS/UMTS Electrical Specifications

Frequency Range:

- 806-960 MHz
- 1710-2170 MHz

Gain 2 dBi typ.

Power Rating: 10 Watts

Standard Cable Type: 8 ft.

Standard Connectors: SMA Male Screw-on

Length: 4.50 in

Width: 1.4 in

Depth: 0.63 in

Housing Material: UV Stabilized ABS Plastic, Black

Operating Temperature Range: -40°F to +194°F

Mounting Interface: Double sided adhesive tape

Location is just the beginning.™

