MAGNETOMETER ORIGIN
NOTE: Minimum 1" keep-out sphere. Avoid ferromagnetic materials and significant DC currents within 1" of magnetometer to preserve accuracy. Large currents may require greater keep-out distance.
SOLDERMASK PULL BACK
AREA 2X 0.381
3X R.128

PAD LAYOUT
FOR PCB MOUNT
CONNECTOR
SEE NOTE 3

3X MOUNTING FASTENER
2-56 x 1/2" BUTTON HEAD SCREW
300 SERIES OR BRASS (SEE NOTE 2)
E.G. MCMOSTER 94070a081

3X PEM FASTENER
SEE NOTES 1-2

1" MAGNETIC KEEP OUT TO PRESERVE
MAGNETOMETER ACCURACY (SEE PAGE 2)

MAGNETOMETER
LOCATION
SEE PAGE 2

3X Ø.244 MIN
SOLDER PAD

Note 1: For solderable fastener: PEM p/n SMTSOB-256-2ET. See product datasheet for details.
Alternate: 0.067 thru (with or without copper pad) for conventional nut mounting (see note 2).
Note 2: If using a PEM fastener in Note 1, minimum PCB thickness is 0.060". Confirm board
tolerances will not fall below this minimum value.
Note 3: Recommended PCB connectors: HARWIN M50-3100545 or keyed connector HARWIN M50-3110542

PCB MOUNTING OPTION

INTERFACE CONTROL DRAWING
3DM-CX5 (-35,-45)

LORD CORPORATION
Williston, VT 05495

CAGE OXYZ9
SIZE B
DRAWING NO 3065-0290-ICD
REV -

U,FL Cable (See Page 5)
Note 5: Alternative cable connectors include the following SAMTEC p/ns:
EHF-105-01-L-D-SM-LC
EHF-105-01-L-D-SM
SHF-105-01-L-D-SM-LC
GNSS ANTENNA CONNECTOR

Hirose U.FL connector.
Hirose P/n: U.FL-R-SMT(01)
Connect CX5 to 1/4" SMA GPS
connectors using 5" adapter cable:
LORD p/n: 9022-0027 OR
LAIRD: 1300-00041

NOTE: GNSS cable can rotate 360 degrees
### Absolute Maximum Ratings

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Limit</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vin to GND</td>
<td>±12V</td>
<td>Notes 1, 2</td>
</tr>
<tr>
<td>Logic I/O to GND</td>
<td>-0.3V to Vin + 0.3V AND not to exceed +5.4V</td>
<td>Notes 2, 3</td>
</tr>
<tr>
<td>GPIO1 to GND</td>
<td>±12V</td>
<td>Note 2</td>
</tr>
<tr>
<td>DISABLE to GND</td>
<td>±12V</td>
<td>Note 2</td>
</tr>
<tr>
<td>GND to CHASSIS</td>
<td>±12V</td>
<td>Note 2</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-40°C to +85°C</td>
<td></td>
</tr>
<tr>
<td>Mechanical Shock</td>
<td>500g</td>
<td></td>
</tr>
</tbody>
</table>

**Note 1:** Power supply is PROTECTED against ±12V, but will not OPERATE over that full range. See INTERFACE OPERATING SPECIFICATIONS table for operational limits.

**Note 2:** Also protected against ESD and other high-voltage / low-energy transients.

**Note 3:** Applied to pins: RxD, TxD, USBDM, USBDP, GPIO2, GPIO3

### Interface Operating Specifications

<table>
<thead>
<tr>
<th>Parameter</th>
<th>MIN</th>
<th>TYP</th>
<th>MAX</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Supply Voltage (Vin)</td>
<td>+3.2V</td>
<td>+5.2V</td>
<td></td>
<td>Note 1</td>
</tr>
<tr>
<td>Power Consumption</td>
<td>500mW</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DC Input Logic Low (VIH)</td>
<td>0.9V</td>
<td></td>
<td></td>
<td>Notes 1, 2, 3</td>
</tr>
<tr>
<td>DC Input Logic High (VIH)</td>
<td>2.1V</td>
<td></td>
<td></td>
<td>Notes 1, 2, 3</td>
</tr>
<tr>
<td>DC Output Logic Low (Vol)</td>
<td>0.4V</td>
<td></td>
<td></td>
<td>Notes 1, 2, 4</td>
</tr>
<tr>
<td>DC Output Logic High</td>
<td>2.6V</td>
<td></td>
<td></td>
<td>Notes 1, 2, 4</td>
</tr>
<tr>
<td>Disable Input Threshold</td>
<td>0.4V</td>
<td></td>
<td>1.6V</td>
<td>Notes 1, 5</td>
</tr>
</tbody>
</table>

**Note 1:** All voltages are referenced to the GND pin (pin 8).

**Note 2:** Applies to pins: RxD, TxD, USBDM, USBDP, GPIO1, GPIO2, GPIO3.

**Note 3:** Nominal input impedance at RxD pin is 10kOhm to +3V. Nominal input impedance at GPIO1/2/3 pins is 40kOhm to GND. Nominal input impedance at USBDP pin is 1kOhm to +3V. Nominal input impedance at USBDM pin is 40kOhm to +3V.

**Note 4:** Applies when sourcing/sinking up to 6mA.

**Note 5:** Nominal input impedance at DISABLE pin is 1Mohm to GND when DISABLE voltage is between 0V and +5.6V. The DISABLE pin can be tied to GND or left unconnected when unused.

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**Electrical Overview**

- **Pin Functions**
  - **Note 1:** Primary interface communications is via either uart or usb. Unused interface pins may be left unconnected.
  - **Note 2:** For best EMC performance, tie CHASSIS (i.e. the three mounting holes) to a local ground (e.g. pcb groundplane, airframe ground, etc.) CHASSIS and GND can be the same or different grounds, see Absolute Maximum Ratings table for limits.
  - **Note 3:** Currently implemented as output only for Pulse Per Second (PPS) timing. Leave unconnected or wire to GND if not used.
  - **Note 4:** Future functionality; not currently implemented. These pins can be left unconnected, or wired to GND, or wired to a TTL/CMOS compatible device for possible future usage.

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**Calculation Method**

- **Data Sheet:** 5 of 6
- **Sheet Date:** 5/6
- **Drawing No.:** 3065-0290-ICD
- **Rev.:** 1
- **Size:** 4.5" x 6.125"

**Manufacturer:** LORD Corporation

**Location:** Williston, VT 05495