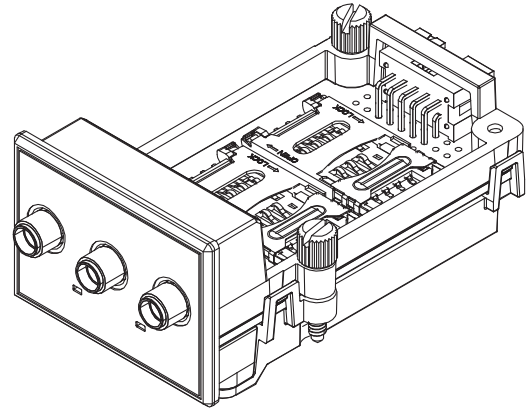REDLION™ USAT Connect What's Critical™

DA 4G LTE CAT4 Sled
Installation Guide

- High-Speed 4G LTE CAT4 cellular communication
- Dual-SIM card slots for carrier fail-over
- Industrial rated for harsh environments
- Wide operating temperature range
- Built-in GPS for asset monitoring
- Simplified deployment architecture
- Field installable

CE

For use with DA50 and DA70 series covered in DEMKO 20 ATEX 2268X and IECEx UL 20.0007X certificates

PACKAGE CHECKLIST

This product package should contain the items listed below. If any items are missing or damaged, contact Red Lion immediately.
- DA 4G LTE CAT4 Sled
- Installation Guide

SAFETY SUMMARY

All safety related regulations, local codes as well as instructions that appear in this document or on equipment must be observed to ensure personal safety and to prevent damage to either the device or equipment connected to it.

Do not use these products to replace proper safety interlocking. No software-based device (or any other solid-state device) should ever be designed to be responsible for the maintenance of personnel safety or consequential equipment not equipped with safeguards. Red Lion disclaims any responsibility for damages, either direct or consequential, that result from the use of this equipment in a manner not consistent with these specifications.

⚠	CAUTION: Risk of Danger Read complete instructions prior to installation and operation of the unit. ATTENTION : Risque de danger Lire les instructions complètes avant l'installation et l'utilisation de l'appareil.

SPECIFICATIONS

1. **POWER REQUIREMENTS**: Power is supplied by the DA host controller.
   Max Power: 3 W
2. **CELLULAR FREQUENCY SPECIFICATIONS**:

TECHNOLOGY	BANDS	FREQUENCIES	ANTENNA CONFIGURATION *
North American Models (VZ/AM)			
LTE	2, 4, 5, 12, 16	B2 (1900), B4 (AWS 1700), B5 (850), B12/B13 (700)	MIMO Required
HSPA+ (fallback)	2, 5	B2 (1900), B5 (850)	Diversity Supported

TECHNOLOGY	BANDS	FREQUENCIES	ANTENNA CONFIGURATION *
Rest of the World (EU)			
LTE	1, 3, 7, 8, 20	B2 (2100), B3 (1800), B7 (2600), B8 (900), B20 (800)	MIMO Required
HSPA+ (fallback)	2, 5	B2 (1900), B5 (900)	Diversity Supported
GSM/GPRS/ EDGE (fallback)	3, 8	B3 (1800), B8 (900)	Diversity Supported

* GPS antenna MUST be an active antenna.

4. **INTERFACES:**
   Cellular: Two SMA Connectors
   GPS: One SMA Connector
5. **GPS:**
   GNSS Supported: GPS L1, GLONASS L1, Galileo E1 and BeiDouB1
   High RF Sensitivity plus jamming detection
6. **WIRELESS/CARRIER COMPLIANCE**
   PTCRB
   FCC/IC
   AT&T LTE with fallback to HSPA+
   Generic LTE with fallback to HSPA+
   Verizon LTE
7. **ENVIRONMENTAL CONDITIONS**:
   Operating Temperature Range: -40 to 75 °C
   Storage Temperature Range: -40 to 80 °C
   Vibration to IEC 60068-2-6: Operational 5-500 Hz, 2 g
   Shock to IEC 60068-2-27: Operational 15 g
   Operating and Storage Humidity: 0 to 95% max. RH non-condensing
   Altitude: Up to 2000 meters
8. **CERTIFICATIONS AND COMPLIANCES**:
   Refer to the controller manual for agency certifications.
   CE Approved
      EN 61326-1 Immunity to Industrial Locations
      Emission CISPR 11 Class A
      IEC/EN 61010-1
      RoHS Compliant
9. **ANTENNA CONNECTOR**:
   One front panel SMA-A main antenna connection
   One front panel SMA-A GPS antenna connection
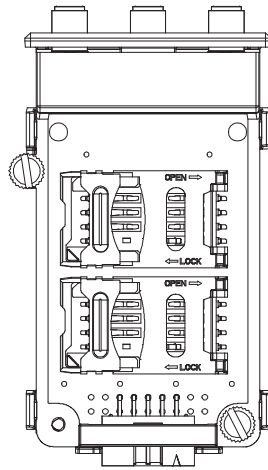   One front panel SMA-A Diversity antenna connection.

10. **INSTALLATION REQUIREMENTS**: Sled must be installed inside the unit case with the hardware provided. See "Installing the 4G LTE CAT4 Sled" for more details.
11. **WEIGHT**: 3.2 oz (90.7 g)

SIM CARD INSTALLATION & DETAILS

A SIM Card with data plan enabled has to be installed on the DA 4G LTE CAT4 Sled before installing the sled in the DA50 or DA70 host device. Contact your cellular provider (carrier) and request a data account. For LTE, the carrier should provide you with a SIM card (size: 2FF) to insert into the DA 4G LTE CAT4 Sled, along with the APN, username & password for data connectivity as required.

Insert the SIM card(s) into the card cradle on the sled.

a. Open the cradle by sliding the cover latch to the right.
b. Lift the edge of the cradle upward, and insert the SIM card into the raised hinge of SIM card slot 1 with the contacts facing left and the SIM card corner notch facing away from the sled.
c. Close the cradle cover and slide the cover latch to the left until it clicks to secure the SIM card in position.
d. Verify that the SIM corner notch lines up correctly and the SIM is flush.
e. Repeat this step if a second SIM is used in your application.

INSTALLING THE 4G LTE CAT4 SLED

CAUTION: Follow standard ESD precautionary procedures.
ATTENTION: Suivez les procédures de précaution standard de décharge électrostatique.

WARNING - Disconnect all power to the unit before installing or removing sleds.
AVERTISSEMENT - Débranchez l'alimentation électrique de l'appareil avant d'installer ou de retirer les tiroirs.

DA50 INSTALLATION

1. Prior to installing the Sled for your DA50 application, ensure that the unit is not receiving power.
2. Disconnect and remove your DA50 from the DIN rail.
3. Remove the DA50 unit's front cap by squeezing the sides and pulling.
4. Slide out the sled holder.
5. Install the sled into the sled holder and hand tighten the captive fasteners, or use a screwdriver.
6. Re-install the sled holder containing the sled into the Converter. Make sure it is fully seated.
7. Replace the front cap.

DA70 INSTALLATION

It is recommended that the Cellular Sled be installed into the topmost Sled slot in the carriage of the Controller.

1. Prior to installing the Sled(s) for your DA70 Controller application, ensure that the Controller is not receiving power.
2. Remove the carriage from the Controller case by releasing the two retaining latches and pulling straight out from Controller.
3. Remove blank panel from the carriage slot of the target sled installation location.
4. Install sled by aligning the two sled mounting hole fasteners, with the controller mounting posts. Be sure locating holes on bottom side of sled align with the locating pins on the carriage, and the sled sits flush against the carriage.
5. Hand tighten the sled captive fasteners, or use a screwdriver if necessary.
6. Repeat the above steps for any additional sleds.
7. Carefully align the carriage with Controller base and press carriage into the controller.

CAUTION: Failure to properly align the carriage can result in damage to the Sled connector pins.
ATTENTION: Si le chariot n'est pas correctement aligné, les broches du connecteur du chariot risquent d'être endommagées.

8. Close the retaining latches to ensure the carriage is fully seated into the Controller case.

CONFIGURING THE DA 4G LTE CAT4 SLED

DA50N CONFIGURATION

When using the Cellular Sled in your installation verify cellular connectivity through the GUI Summary page after logging into the DA50N Controller:

– Activation Status: "Unknown" / "Not Reg" / "Searching" / "**Reg Home**" / "Reg Roaming" / "Reg Denied"
– Connection: "**CONNECTED**" / "Unknown
– IP Address: Populated with a network IP address (if "CONNECTED").

A "CONNECTED" status indicates successful connection to the cellular network.

If connection is "Unknown", browse to Network → Cellular Connection → Sled Cellular Configuration, select the Sled Slot for the DA 4G LTE CAT4 SLED, update the APN field with the information provided by your SIM provider, click Apply, then return to the GUI Summary page to monitor connectivity status.

For further configuration and troubleshooting information, please refer to the DA50N Software Manual for troubleshooting steps at www.redlion.net/support/documentation.

DA50D or DA70D CONFIGURATION

The CAT4 Model Sled (Cell Modem Sled) is configured using Crimson 3.1 (or later) software. After selecting the Cell Modem Sled, it is set up as a PPP and Modem Client or SMS via GSM Modem. Find additional information in the Crimson 3.1 User Manual.

ANTENNA INSTALLATION

Antennas intended for use in Class 1, Division 2 and Zone 2 Hazardous Locations must be installed within the end use enclosure. For remote mounting in an unclassified location, routing and installation of the antennas shall be in accordance with the National Electrical Codes requirements.

LEDs

PWR LED - Power Status 4G LTE CAT4 Sled

The PWR LED provides status for both Sled power as well as GPS antenna errors. Refer to the software user manual for more detailed information of possible LED statuses.

COLOR	STATUS
Off	No power to the sled
Green	Sled is powered.
Orange	Sled is powered and a GPS antenna fault is detected.

Note: A GPS antenna fault will be present with a passive antenna or antenna short.

STS LED

The STS LED provides status for the modem. Refer to the software user manual for more detailed information of possible LED statuses.

COLOR	STATUS
Off	Modem resetting
Blinking Green	Normal operation (1 sec on; 2 sec off)
Solid Green	Modem setup

RED LION CONTROLS TECHNICAL SUPPORT

If for any reason you have trouble operating, connecting, or simply have questions concerning your new unit, contact Red Lion's technical support.

Support: support.redlion.net
Website: www.redlion.net
Inside US: +1 (877) 432-9908
Outside US: +1 (717) 767-6511

Red Lion Controls, Inc.
20 Willow Springs Circle York, PA 17406

ORDERING INFORMATION

PART NUMBER	DESCRIPTION
DAS00CL9C4SAM000	4G LTE CAT4 Sled with Generic Profile for North American Carriers
DAS00CL9C4SEU000	4G LTE CAT4 Sled with Generic Profile for EMEA, SAARC, APAC Carriers
DAS00CL9C4SVZ000	4G LTE CAT4 Sled with Verizon Profile

ACCESSORIES

PART NUMBER	DESCRIPTION
ANTMA741ABI001	2G/3G/4G LTE MIMO low profile direct permanent mount antenna, IP67 rated
ANTMA710AABI001	2G/3G/4G LTE MIMO plus GPS direct permanent mount antenna, IP67 rated

Connector/Cables for Antennas
Both: LTE and cellular (both lines) have SMA male CFD-200 low loss cable (3 meters)
ANTMA71: GPS has SMA male RG-174 (3 meters)

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