



SLICE6 Distributor 3 User's Manual



March 2025

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Introduction

This manual supports the SLICE6 Distributor 3, part number 13006-90610.

The SLICE6 Distributor 3 is a centralized power and communications management hub suitable for use in dynamic testing environments. Designed for in-dummy use and other environments where space is limited, it supports primary input power distribution, an external back-up battery, a signal bus, Ethernet communications and 3 SLICE6 DAS chains.

Features

The SLICE6 Distributor 3 is designed to fit in small, tight applications. In addition, it supports:

- Set-up and monitoring via DataPRO software.
- Shock rated to 500 g for dynamic testing environments.
- Three SLICE6 DAS connectors support up to 10 SLICE6 DAS per connector.
- Supports primary and back-up power inputs.
- Advanced power management supports continuous power when switching from primary power to back-up battery.
- Internal temperature sensor.
- LED indicators for power and system status.
- Dedicated connector supports external ID/status tag and four temperature sensors.
- All connectors and indicators accessible from the front panel.

Compatibility

The SLICE6 Distributor 3 can be used in systems originally designed for the SLICE6 Distributor with minimal rework.

- The SLICE6 Distributor 3 can be controlled through DataPRO.
- AUX and DN connectors are compatible with SLICE6 Distributor units.

The AUX and DN connectors usually interface to the TDAS PLUS Mini Distributor through the ATD umbilical cable. All signals are protected against ESD. The SLICE6 Distributor 3 can work together with other SLICE6 Distributors, SLICE6 Distributor 3 units and a DTS back-up battery (P/N 24000-00542-R).

DTS Support

The SLICE6 Distributor 3 is designed to be reliable and simple to operate. If you need assistance, DTS has support engineers worldwide with extensive product knowledge and test experience ready to help:

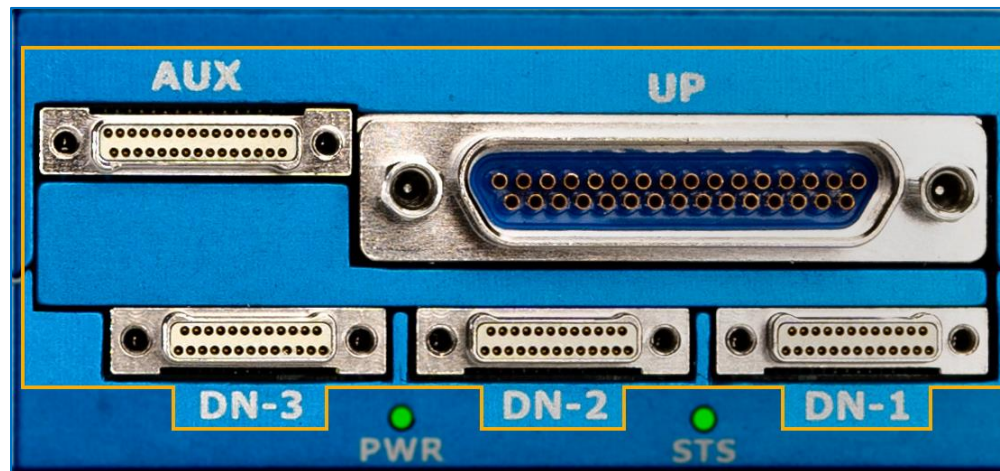
- Registered users can access the DTS Help Center web portal: support.dtsweb.com

Registration also gives you access to additional self-help resources and non-public support information. To register, go to support.dtsweb.com/registration.

Using the SLICE6 Distributor 3

Front Panel

- UP connector for primary input power, communications, control signals and external back-up battery support.
- Three DN (down) connectors supporting a total of up to 144 SLICE6 DAS channels.
- AUX (auxiliary) connector supports 3 temperature sensors and power and status LED signal mirroring.
- PWR (power) and STS (status) LEDs.



The SLICE6 Distributor 3 does not contain an internal battery and must be connected to external power (primary or back-up battery¹) at all times for operation.

¹ Back-up battery should not be used for primary power.

Software Interface

The SLICE6 Distributor 3 requires DataPRO software version 3.1 or later.

- The SLICE6 Distributor 3 can be manually added, automatically detected via UDP, or manually detected using an IP address.
- DataPRO software will automatically recognize the SLICE6 Distributor 3.

Using Tilt Control software, the SLICE6 Distributor 3 also supports up to 5 Tilt 4.0 sensors. These sensors will auto-populate when the software detects the SLICE6 Distributor 3.

UP Connector

The UP connector supports primary input power, Ethernet communications, an external back-up battery and start record signal. System status, ON and event signals are also supported via simple contact closure. Data from the internal temperature sensor may be monitored and recorded from within the software.

Note	
	An event or trigger signal applied anywhere in the SLICE6 DAS chain is distributed throughout the DAS chain and forwarded to the SLICE6 Distributor 3 but is NOT exported outside the SLICE6 Distributor 3. This also applies to level trigger. Level trigger is NOT recommended when SLICE6 DAS is used in in-dummy testing.

The UP connector supports use and charging of lithium-ion batteries as a back-up power source. Only DTS-supplied batteries should be used. The battery can be hardware enabled and a temperature sensor (included in DTS batteries) is also supported.

The external battery will charge whenever sufficient primary input power is connected to the UP connector, however the fastest charge rate is when the SLICE6 Distributor 3 is in a power down state (i.e., the ON signal is absent). When the ON signal is present, the SLICE6 Distributor 3 is fully functional, however primary input power is principally used to

support the SLICE6 Distributor 3 and the attached DAS, thus reducing battery charging to a minimum. For information on power requirements, see page 11.

The UP connector interfaces to the Mini Distributor through the ATD umbilical cable. See page 14 for connector information and pin assignments. See page 18 for the network parameters of your equipment. For information on power requirements, see page 11.

Auxiliary (AUX) Connector

The AUX connector supports several optional functions including LED signal mirroring and 4 external temperature sensors. LED signal support mirrors the PWR and STS LED states, allowing system status visibility using an external pendant or other indicator when the SLICE6 Distributor 3 front panel is not visible. Data from external temperature sensors may be monitored and recorded from within the software. LED information begins on page 9.

SLICE6 DAS Connectors (DN-1 through DN-3)

These 3 connectors are identical and support output power, Ethernet, status, start, ON and event signals. Each connector supports up to 10 SLICE6 DAS². Ethernet communications between the SLICE6 Distributor 3 and the SLICE6 DAS are supported at 100 Mb.

Note	
	An event or trigger signal applied anywhere in the SLICE6 DAS chain is distributed throughout the DAS chain and forwarded to the SLICE6 Distributor 3 but is NOT exported outside the SLICE6 Distributor 3. This also applies to level trigger. Level trigger is NOT recommended when SLICE6 DAS is used in in-dummy testing.

For detailed information on SLICE6 DAS operation, please see the [SLICE6 DAS User's Manual](#).

² When combined, a maximum of 24 DAS or 144 channels are supported.

LEDs

There are 2 LED indicators. The STS LED indicates communication and arm status and the PWR LED indicates power status. At system power-up, the red-green-blue LED initialization sequence is performed by the STS LED followed by the PWR LED.

LED behavior is summarized below.

			
External Battery Capacity ¹	Charging, Powered Off	Charging, Powered On	Discharging, Powered On
>90%			
50% - 90%	 (0.5 Hz)	 (0.5 Hz)	 (0.5 Hz)
20% - 50%	 (2 Hz)	 (2 Hz)	 (2 Hz)
<20% –or– fault			

¹ The SLICE6 Distributor 3 does not contain an internal battery and must be connected to external power (primary input or back-up battery³) at all times.

Caution	
	Do not perform any critical tests when the battery status LED indicator is red (battery low).

³ Back-up battery should not be used for primary power.

	Recorder Mode	Circular Buffer Mode
	Armed and waiting for Start Record signal to begin data collection	
	Start Record signal received and recording data; waiting for Event signal (optional)	Armed and recording data; waiting for Event signal
	One of the following: • Event signal received (optional) –or– • Fault signal received and data collection completed (no comm) –or– • Fault	One of the following: • Event signal received –or– • Fault signal received and data collection completed (no comm) –or– • Fault
	Data collection completed, PC downloading data; communicating with the host.	

Powering the SLICE6 Distributor 3

The SLICE6 Distributor 3 does not contain an internal battery and must be connected to external power at all times. The SLICE6 Distributor 3 should be powered from a high-quality power source with output voltage and current ratings appropriate for the installation. A green or blue PWR LED (solid or flashing) means voltage and current input levels are within specifications and polarity is correct. Be sure to consider any power drop due to cable length.

Primary input power (UP connector): 14-23 VDC range⁴

Output power to DAS (via primary input power): 12 VDC, 2.5 A maximum per DAS connector (30 W maximum)

Total DAS output power (via primary input power): 12 VDC, 5 A maximum, 60 W maximum

The external battery⁵ will charge whenever sufficient primary input power is connected to the SLICE6 Distributor 3, however the fastest charge rate (700 mA) is when the ON signal is absent. When the ON signal is present, the SLICE6 Distributor 3 is fully functional, however primary input power is principally used to support the SLICE6 Distributor 3 and the attached DAS, thus reducing battery charging to a minimum. When completely discharged, the battery will consume a maximum of 6 W to charge.

Output power to DAS (via BATTERY): 6-8.5 VDC, 3.5 A maximum per DAS connector (30 W maximum)

If primary input power is disconnected while the SLICE6 Distributor 3 is on, the unit will switch to battery power. When the battery's available capacity drops below 5%, a fault will occur.

Power-Up and Power-Down Procedures

With sufficient power applied, the SLICE6 Distributor 3 will power up (enable control system electronics, communications, output power and battery charging) within ~30 s when an ON signal is present. If an ON signal is absent, only battery charging is enabled. Allow additional time for connected devices to power up.

Power down is immediate upon removal of the ON signal and external power. Wait ~30 s before reinitializing the system.

⁴ 75 W maximum power consumption when fully operational, armed and charging the external battery.

⁵ Use DTS-supplied, lithium-ion batteries only.

Mounting Considerations

Securely bolt the unit to the test article or dynamic testing device to provide the best shock protection. Mounting methods and hardware selection should be calculated to withstand expected shock loading and allow proper grounding. Check bolt tightness periodically to ensure the unit is securely fastened to the baseplate and the baseplate is securely fastened to the testing platform.

Mounting specifications are provided on page 17.

Thermal Considerations

Under normal conditions when used continuously at the maximum power output level and bolted to a structure that provides a heat sink, it is unlikely that the unit will overheat.

Grounding

DTS strongly recommends that the all equipment be properly grounded to minimize any data noise due to high-current transients. The test vehicle or dynamic testing device should be connected to earth ground.

All SLICE6 equipment should be grounded to each other and bolted to the test article. DTS recommends checking continuity between the enclosures of each unit to confirm resistance readings of <1 ohm.

If the installation does not permit bolting the SLICE6 Distributor 3 and connected TDAS or SLICE systems to a common ground, DTS recommends connecting ground wires between the various enclosures.

Contact DTS if you have any questions regarding proper methods to ground the system.

Care and Handling

The SLICE6 Distributor 3 is designed to operate reliably in dynamic testing environments. While it is resistant to many environmental conditions, you should not subject the unit to harsh chemicals, submerge it in water, or drop it onto any hard surface.

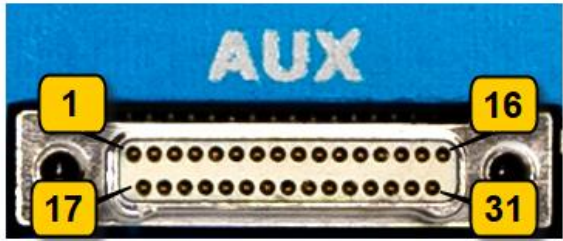
Caution	
	Electronic equipment dropped from desk height onto a solid floor may experience up to 10,000 g. Under these conditions, damage to the exterior and/or interior of the unit is likely.

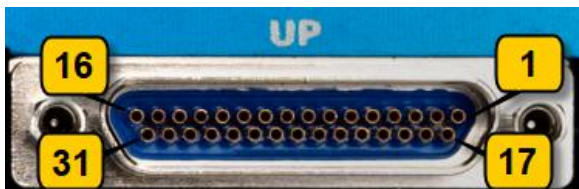
Each SLICE6 Distributor 3 is supplied with calibration data from the factory. DTS recommends annual recalibration to ensure that the unit is performing within factory specifications. The SLICE6 Distributor 3 is not user-serviceable and should be returned to the factory for service or repair.

When not in use or if shipping is required, we suggest that you place the unit in the padded container originally provided with your unit.

Connector Information

Pin Assignments

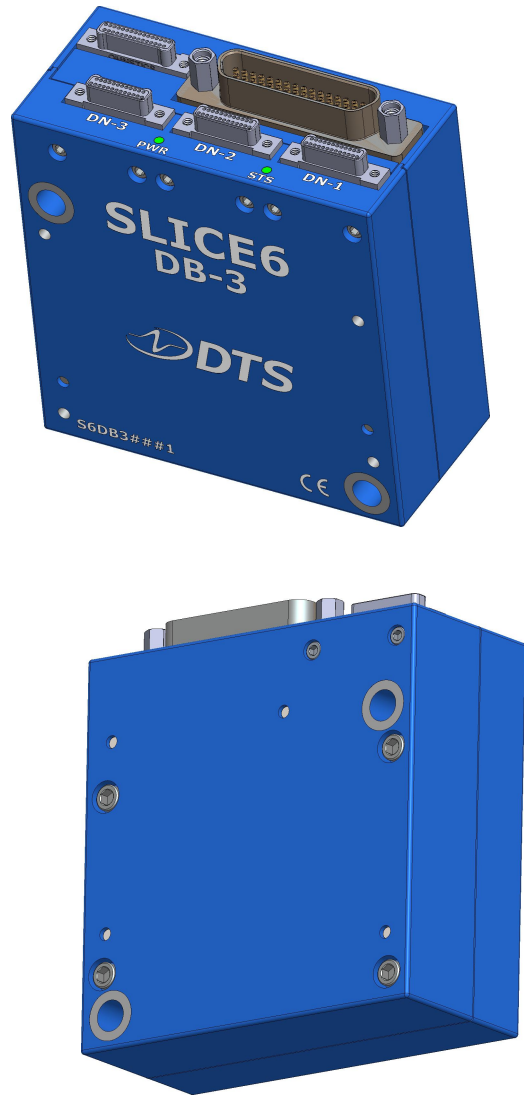
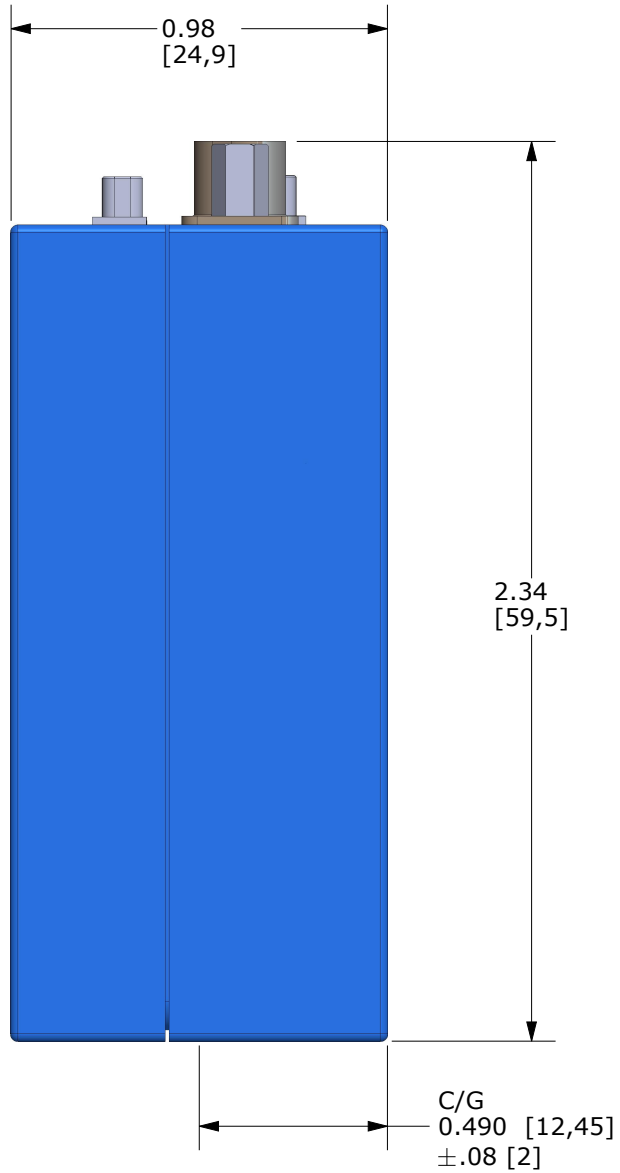
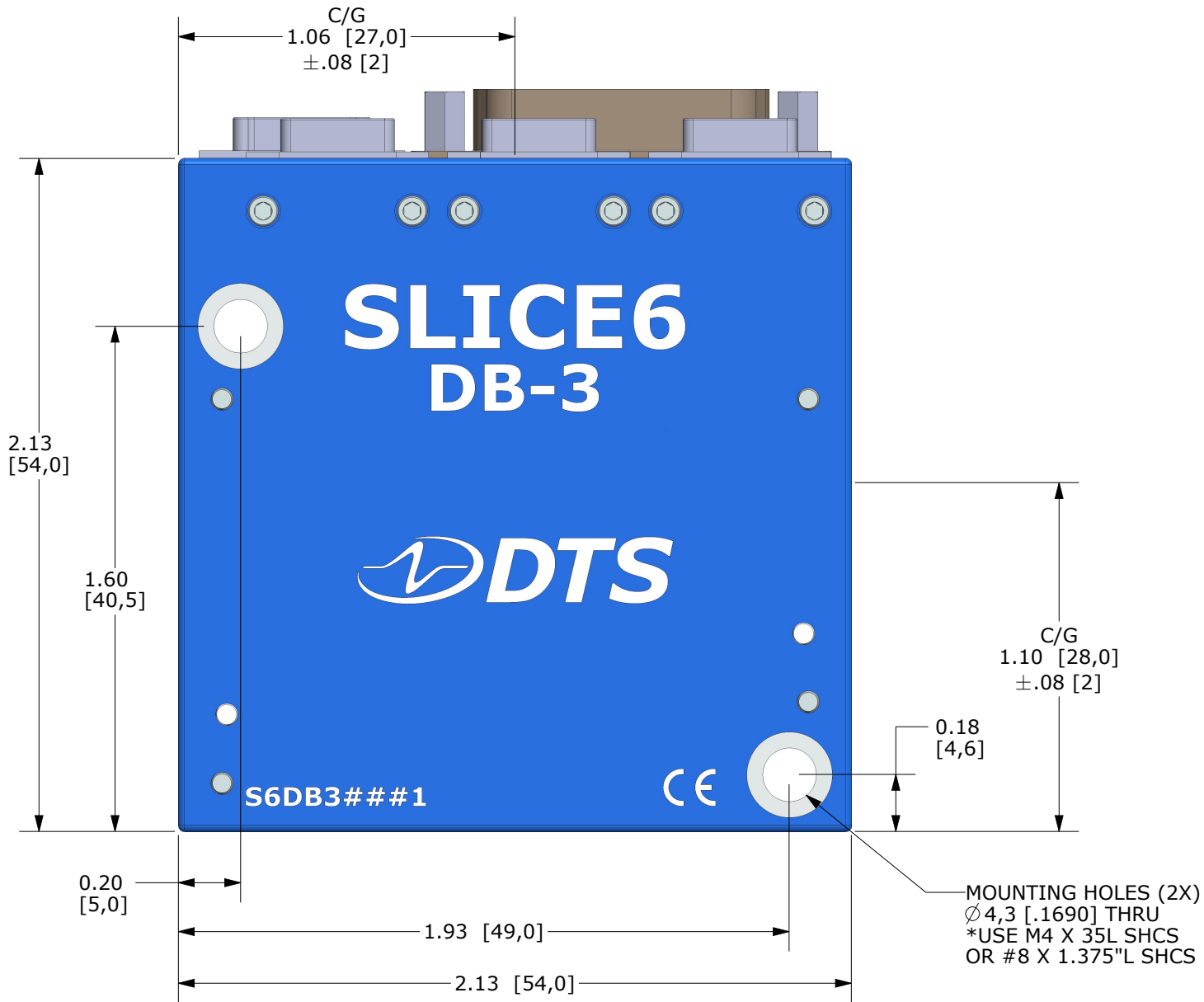
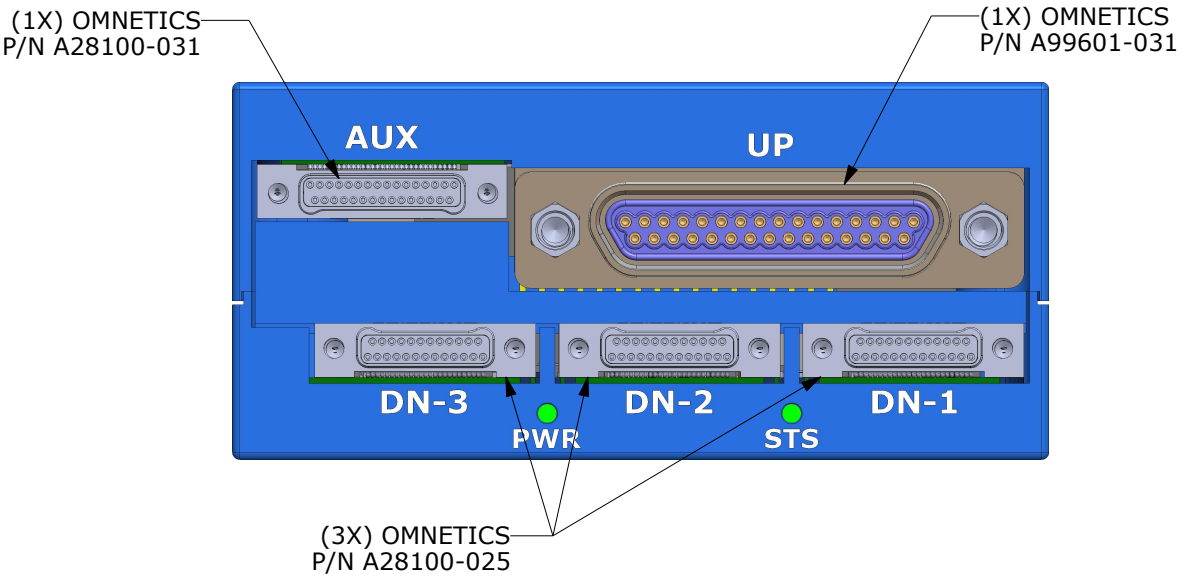
AUX Connector				
Omnetics A38100-831  (looking into the connector) Suggested Mating Connector: Omnetics A29000-131 (includes jack screws and 18" pigtails)	1	Ground	17	Temp sensor 1 VDC
	2	Temp sensor clock (1)	18	Temp sensor 1 enable
	3	Temp sensor clock (2)	19	Temp sensor clock (4)
	4	Temp sensor clock (3)	20	Temp sensor 2 VDC
	5	Ground	21	Temp sensor 2 enable
	6	Temp sensor data (1)	22	Temp sensor data (4)
	7	Temp sensor data (2)	23	Temp sensor 3 VDC
	8	Temp sensor data (3)	24	Temp sensor 3 enable
	9	No connection	25	Temp sensor 4 VDC
	10	Ground	26	Temp sensor 4 enable
	11	STS LED, blue (cathode)	27	LED VDC (anode for STS LED)
	12	Ground	28	LED VDC (anode for PWR LED)
	13	STS LED, red (cathode)	29	PWR LED, red (cathode)
	14	No connection	30	PWR LED, green (cathode)
	15	STS LED, green (cathode)	31	PWR LED, blue (cathode)
	16	Ground		

UP Connector				
Omnetics A114630-801  (looking into the connector)	1	Ground	17	Ethernet Tx (-)
	2	Ethernet Tx (+)	18	Ethernet Rx (-)
	3	Ethernet Rx (+)	19	Ground
	4	Ground	20	Start recording input (apply 5 V with respect to Ground)
	5	/ON (contact closure input to Ground)	21	Event + (contact closure to pin 6)
	6	Event - (contact closure to pin 21)	22	Status (reference to Ground)
	7	Condition OK	23	Ground
	8	Ground	24	Ground
	9	Ground	25	VDC input
	10	VDC input	26	VDC input
	11*	Temperature sensor	27*	Battery enable (reference to Ground)
	12*	Temperature sensor return	28*	+VDC input from external battery
	13*	+VDC input from external battery	29*	+VDC input from external battery
	14*	+VDC input from external battery	30*	-VDC input from external battery
	15*	-VDC input from external battery	31*	-VDC input from external battery
	16*	-VDC input from external battery		

* For use with DTS-supplied batteries only.

Warning	
	Do not apply external voltages to the event, communication, status or ON signals—this could result in damage to the unit.

DN Connectors				
Omnetics A38100-825  (looking into the connector) Suggested Mating Connector: Omnetics A29000-125 (includes jack screws and 18" pigtails)	1	/ON-DAS (contact closure input to Ground)	14	Ethernet Tx (+)
	2	No connection	15	Ethernet Tx (-)
	3	STATUS-DAS	16	Ethernet Rx (+)
	4	/START-DAS (contact closure input to Ground)	17	Ethernet Rx (-)
	5	No connection	18	No connection
	6	/EVENT-DAS (contact closure input to Ground)	19	No connection
	7	Ground	20	No connection
	8	No connection	21	No connection
	9	Ground	22	Ground
	10	Ground	23	Ground
	11	VDC output	24	VDC output
	12	VDC output	25	VDC output
	13	Ground		



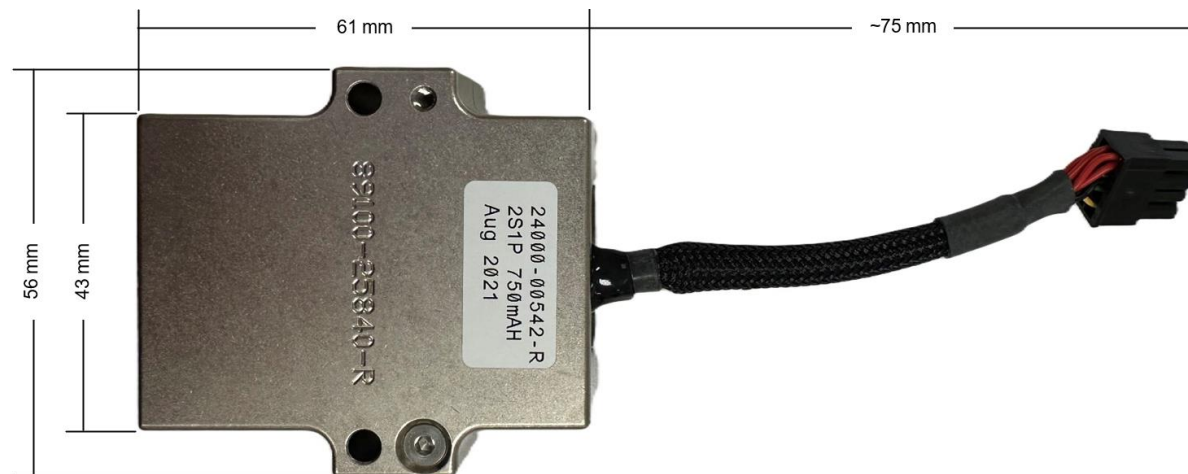
MASS: 130 ± 13 GRAMS

 DTS SEAL BEACH, CA 90740 562-493-0158 www.dtsweb.com		DESCRIPTION: S6DB-3, MOUNTING DRAWING			
MATERIAL: 6061-T6 ALUMINUM W/ BLUE ANODIZE		DTS P/N: 13006-90610		REV: 0	
UNLESS OTHERWISE SPECIFIED:				DRAWN: J CASEY	
UNITS = MM [INCH] DIMENSIONAL TOLERANCES ±.254 [0.010"] INTERPRET PER ASME Y14.5. DO NOT SCALE.		DATE: 2021-04-06	SIZE: B	SCALE: 1:1	SHEET: 1 OF 1

Accessories and Support Equipment

DTS recommends that you use cables we supply to ensure compatibility and performance. See below for a list of available cables or contact your DTS representative.

Description	DTS Cable Part Number
SLICE6 ATD ID and Status LED Pendant	13006-90350
Cable, SLICE6 Distributor AUX to ID Pendant + 2 Temperature Sensors	13006-90380
Cable, SLICE6 Distributor 3 (DB-3) Exit/UP to pigtail term (two bundles) (150 mm & 118")	13006-90620
Cable, SLICE6 Distributor 3 (DB-3) UP to Battery (15 cm) + SYSTEM (295 cm)	13006-90660
SLICE6 Distributor Interface Device	13006-90410
Cable, SLICE6 Distributor 3 (DB-3) Exit to Battery Pack Extension Cable	13006 -9104x ⁶
SLICE6 Distributor 3 (DB-3) Battery Assembly - 30 s of power for 10 SLICE6 DAS (60 channels) - Time to recharge from full discharge: ~2 hours - Nominal output: 7.4 V (5.5-8.4 V range); 750 mAh	24000-00542-R



⁶ x = multiple lengths available

Hardware Configuration Specifications

The SLICE6 Distributor 3 is typically delivered with the default network specifications as follows:

IP address	192.168.5.1xx where: xx = 01-99 for S/Ns S6DB30001-S6DB30099
Netmask	255.255.248.0
MAC address	00:19:9B:00:CX:xx where X = hex for the last 4 digits of the S/N and where: xx = 01-99 for S/Ns S6DB 3 0001-S6DB 3 0099

The SLICE Network Configuration Utility (discussed below) can be used to determine the current network specifications of your unit. If the utility is not available, the packing slip for your equipment identifies the network specifications as shipped from the factory. If the packing slip is not available, try using the default specifications described in the table above.

If you need information on the specifics of your equipment, please submit a request through the DTS Help Center web portal (support.dtsweb.com) and include the serial number(s) of the equipment and parameters you are asking about.

Using the SLICE Network Configuration Utility

The SLICE Network Configuration Utility (available from the DTS Help Center) can be used to view or change the unit's IP address.

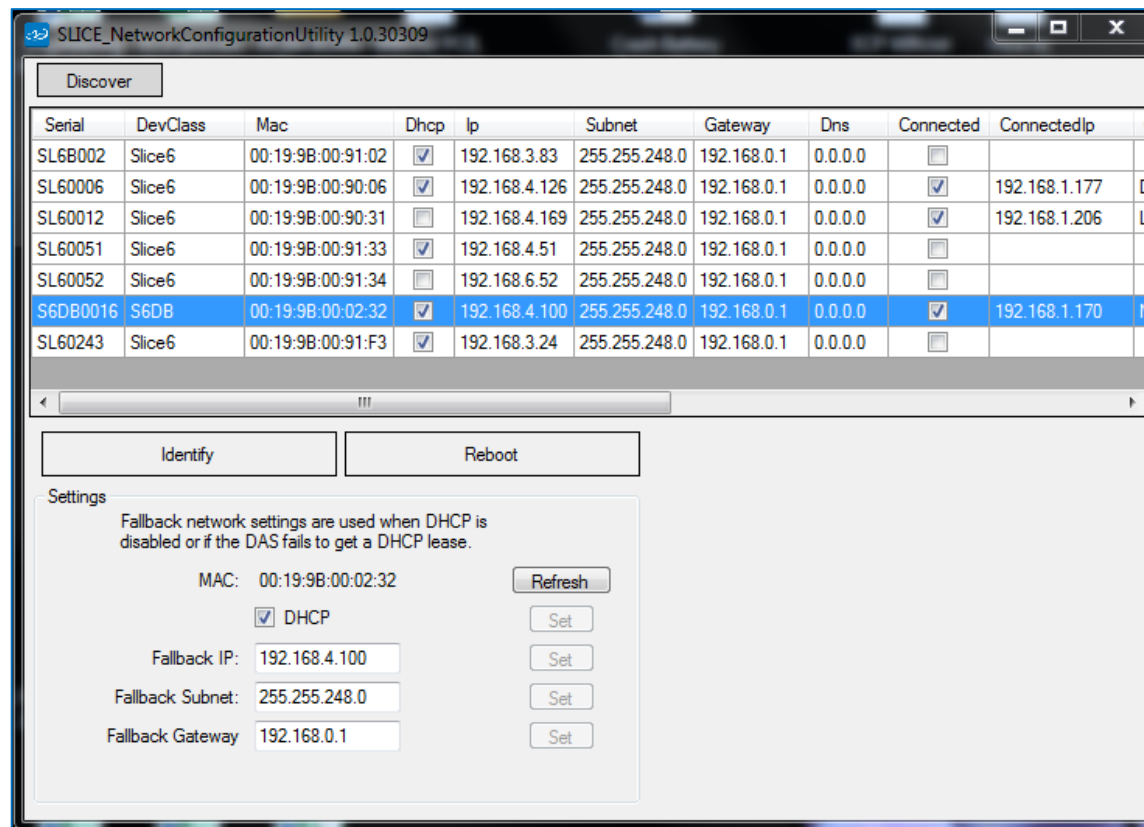
Use of the utility requires a network that supports multicast and the workstation running the utility must also allow it. Confirm that:

- The PC's Ethernet properties are not using anything that can block multicast; e.g., DNE LightWeight Filter.
- The Windows Firewall will allow multicast traffic.
- Any third-party anti-virus software will allow multicast traffic.

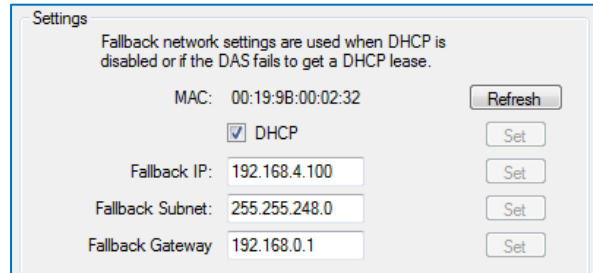
1. Open the SLICE Network Configuration Utility.



2. The software will immediately look for all attached devices and list them in the table.
 - Click **Discover** to refresh the list.
 - Click **Identify** for any selected device to cause the unit's LED to flash.



3. Select the SLICE6 device from the list. (A SLICE6 Distributor is selected in the image above.) The device Settings are shown at the bottom of the window. The current IP address may or may not match the fallback IP address, depending on whether DHCP is selected.



Settings

Fallback network settings are used when DHCP is disabled or if the DAS fails to get a DHCP lease.

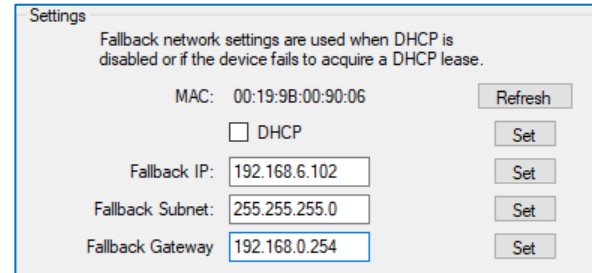
MAC: 00:19:9B:00:02:32

☒ DHCP

Fallback IP: 192.168.4.100

Fallback Subnet: 255.255.248.0

Fallback Gateway: 192.168.0.1



Settings

Fallback network settings are used when DHCP is disabled or if the device fails to acquire a DHCP lease.

MAC: 00:19:9B:00:90:06

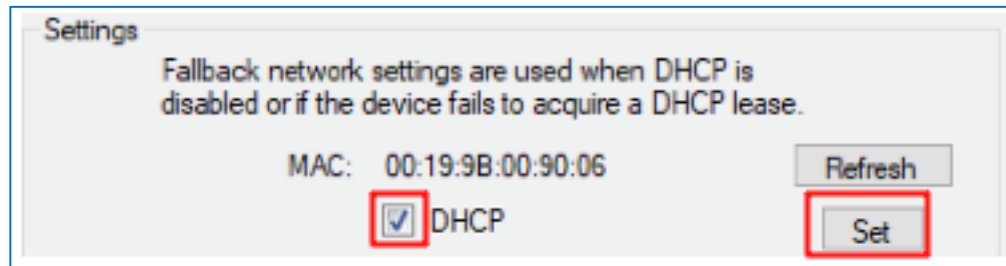
☐ DHCP

Fallback IP: 192.168.6.102

Fallback Subnet: 255.255.255.0

Fallback Gateway: 192.168.0.254

4. To enable DHCP, select the check box then select **Set**. Proceed to step 7.



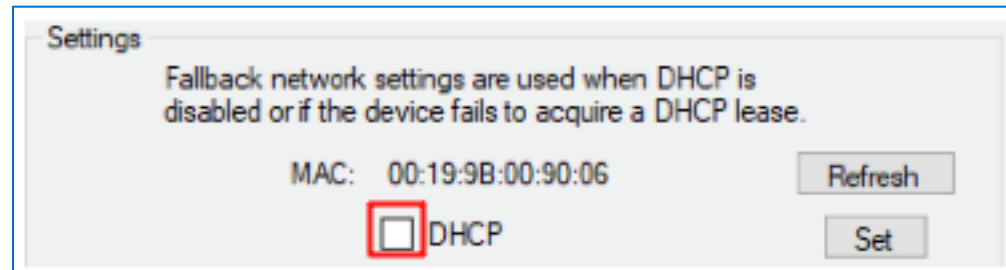
Settings

Fallback network settings are used when DHCP is disabled or if the device fails to acquire a DHCP lease.

MAC: 00:19:9B:00:90:06

☒ DHCP

5. To disable DHCP and manually enter IP address and other information, unselect the check box.



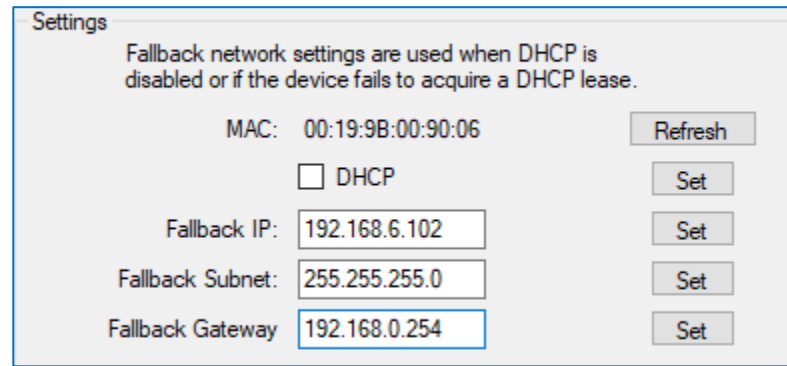
Settings

Fallback network settings are used when DHCP is disabled or if the device fails to acquire a DHCP lease.

MAC: 00:19:9B:00:90:06

☐ DHCP

6. Enter the new parameters and select **Set** for each item updated. (Note: The MAC address is not user configurable.)



Settings

Fallback network settings are used when DHCP is disabled or if the device fails to acquire a DHCP lease.

MAC: 00:19:9B:00:90:06

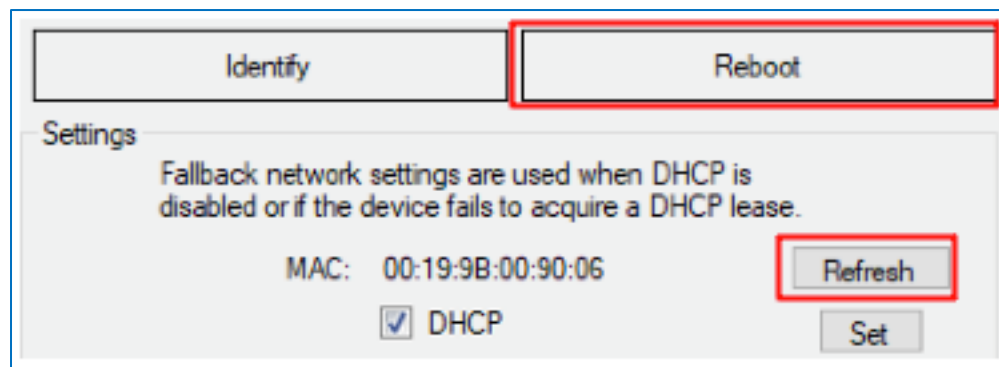
☐ DHCP

Fallback IP:

Fallback Subnet:

Fallback Gateway:

7. Select **Refresh** to view the settings (optional), then **Reboot** the device.



Identify **Reboot**

Settings

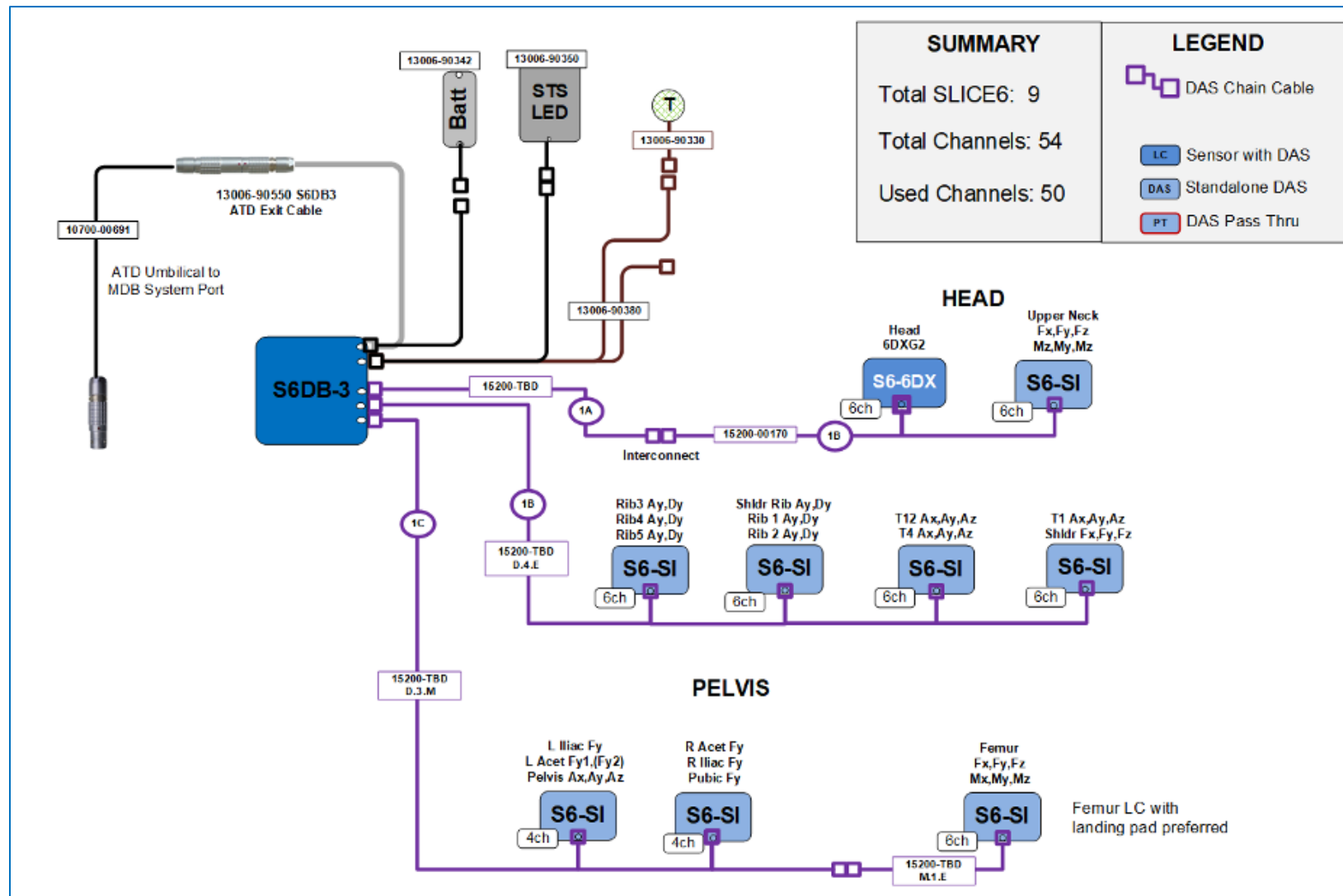
Fallback network settings are used when DHCP is disabled or if the device fails to acquire a DHCP lease.

MAC: 00:19:9B:00:90:06

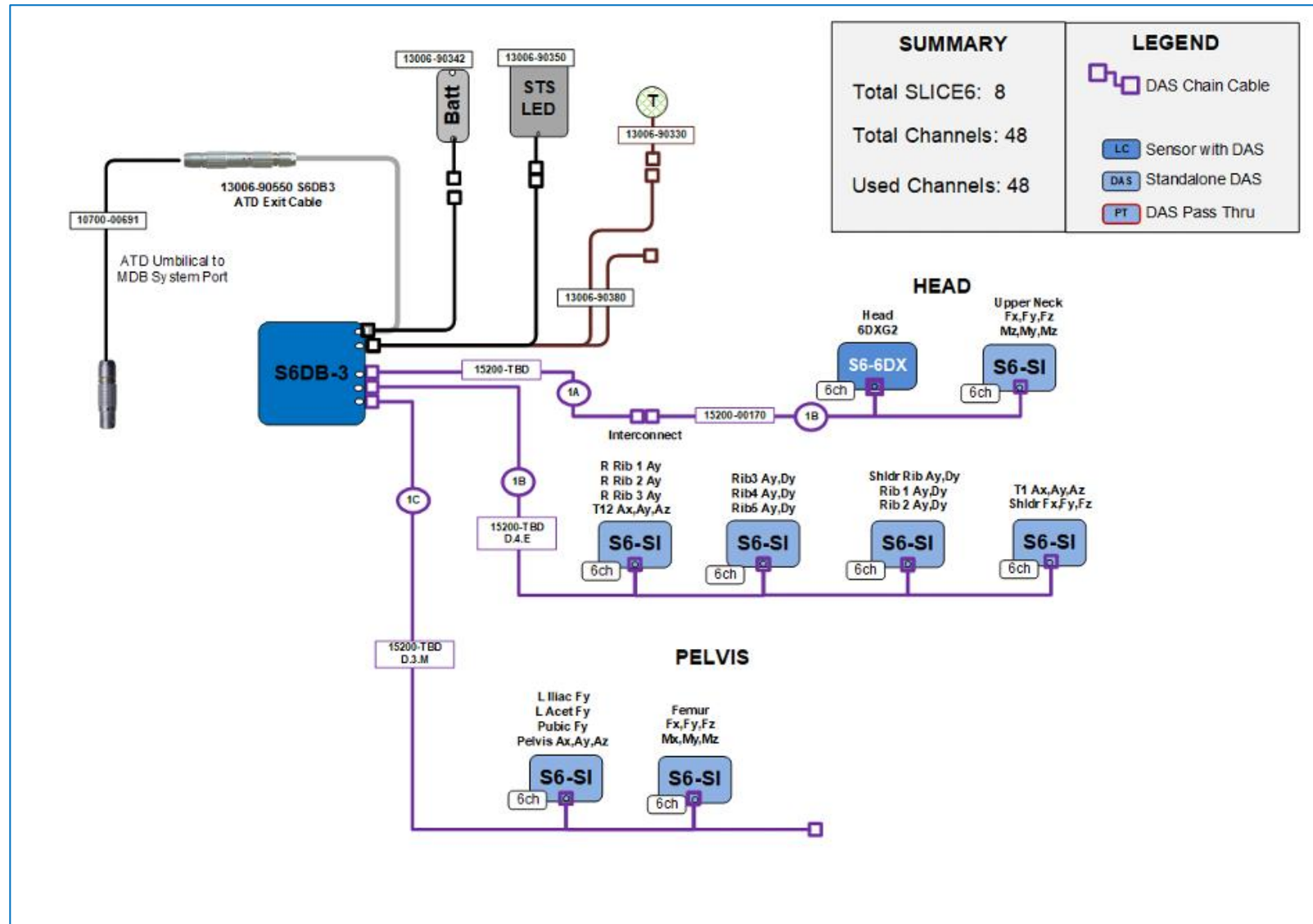
☒ DHCP

Application Examples

Example 1: 54 Total Channels, 50 in Use



Example 2: 48 Total Channels, All in Use





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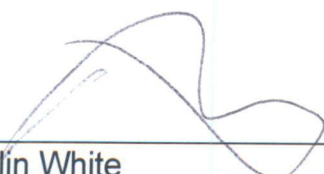
DECLARATION OF CE CONFORMITY

Description	Model
Data Acquisition Module	SLICE6 DAS Module
Distribution Unit	SLICE6 Distributor
Distribution Unit	SLICE6 Distributor 3

The undersigned hereby declares that the products listed above, manufactured by Diversified Technical Systems, Inc., Seal Beach, California, USA, conform to the following directive and standards:

Applicable Council Directive: **89/336/EEC – Electromagnetic Compatibility**

Applicable Harmonized Standards: **EN 55022:1998, EN 55024:1998**



Rollin White
President, DTS

January 15, 2025
Date

[Revision History](#)

Rev	Date	By	Description
0	31 Mar 2025	E. Kippen/ P. Vaitaitis	Initial release.