



# HiDANplus-HDP-LAN16

*High Reliability Intelligent Data Acquisition Node Plus*

## Technical Specifications

HDM-650200030 Rev. A



**RTD Embedded Technologies, Inc.**

103 Innovation Boulevard  
State College, PA 16803 USA  
Telephone: 814-234-8087  
Fax: 814-234-5218

[www.rtd.com](http://www.rtd.com)

[sales@rtd.com](mailto:sales@rtd.com)  
[techsupport@rtd.com](mailto:techsupport@rtd.com)





# Revision History

---

Rev A	03/30/2017	Initial Release
-------	------------	-----------------

*Advanced Analog I/O, Advanced Digital I/O, aAIO, aDIO, a2DIO, Autonomous SmartCal, "Catch the Express", cpuModule, dspFramework, dspModule, eBuild, expressMate, ExpressPlatform, "MIL Value for COTS prices", multiPort, PlatformBus, and PC/104EZ are trademarks, and "Accessing the Analog World", dataModule, IDAN, HiDAN, HiDANplus, RTD, the RTD logo, and StackNET are registered trademarks of RTD Embedded Technologies, Inc. (formerly Real Time Devices, Inc.). PS/2 is a trademark of International Business Machines Inc. PCI, PCI Express, and PCIe are trademarks of PCI-SIG. PC/104, PC/104-Plus, PCI-104, PCIe/104, PCI/104-Express and 104 are trademarks of the PC/104 Consortium. All other trademarks appearing in this document are the property of their respective owners.*

*Failure to follow the instructions found in this manual may result in damage to the product described in this manual, or other components of the system. The procedure set forth in this manual shall only be performed by persons qualified to service electronic equipment. Contents and specifications within this manual are given without warranty, and are subject to change without notice. RTD Embedded Technologies, Inc. shall not be liable for errors or omissions in this manual, or for any loss, damage, or injury in connection with the use of this manual.*

*Copyright © 2017 by RTD Embedded Technologies, Inc. All rights reserved.*

# Table of Contents

---

<b>1</b>	<b>Introduction</b>	<b>5</b>
1.1	Product Overview.....	5
1.2	Contact Information .....	5
1.2.1	Sales Support .....	5
1.2.2	Technical Support .....	5
<b>2</b>	<b>Specifications</b>	<b>6</b>
2.1	Physical Attributes .....	6
2.2	Installed Modules.....	6
<b>3</b>	<b>System Dimensions</b>	<b>7</b>
3.1	HDP-LAN16 Front View .....	7
3.2	HDP-LAN16 Rear View .....	8
3.3	HDP-LAN16 Side View .....	9
3.4	HDP-LAN16 Top View .....	10
<b>4</b>	<b>External Connectors</b>	<b>11</b>
4.1	External I/O .....	11
4.2	HDP-LAN16 LAN 1 & LAN 3.....	11
4.3	HDP-LAN16 LAN 2 & LAN 4.....	14
4.4	HDP-LAN16 PWR.....	16
<b>5</b>	<b>Limited Warranty</b>	<b>17</b>

# Table of Figures

---

Figure 1: Board Stack-up.....	6
Figure 2: HDP-LAN16 Dimensional Drawing Front View .....	7
Figure 3: HDP-LAN16 Dimensional Drawing Rear View .....	8
Figure 4: HDP-LAN16 Dimensional Drawing Right View .....	9
Figure 5: HDP-LAN16 Dimensional Drawing Top View.....	10
Figure 6: HDP-LAN16 Front View.....	11

# Table of Tables

---

Table 1: Physical Attributes .....	6
Table 2: Installed Modules .....	6
Table 3: HDP-LAN16 LAN 1 & LAN 3 37-Socket .....	12
Table 4: HDP-LAN16 LAN 2 & LAN 4 37-Socket .....	14
Table 5: HDP-LAN16 10-Pin.....	16

# 1 Introduction

---

## 1.1 Product Overview

The HiDANplus-HDP-LAN16 is a 16-port Unmanaged Gigabit Ethernet Switch with sixteen 10/100/1000 Ethernet switch in groups of four in four MIL-DTL-D3899 III connectors. Any port can be the uplink, remaining links will all be downlinks. All ports have automatic speed negotiation and MDI crossover to eliminate the need for crossover cables. It requires 8 – 36 VDC input power. The state of the switch can be determined by the PWR LED located on the front of the frame.

## 1.2 Contact Information

### 1.2.1 SALES SUPPORT

For sales inquiries, you can contact RTD Embedded Technologies sales via the following methods:

Phone: 1-814-234-8087 Monday through Friday, 8:00am to 5:00pm (EST).  
E-Mail: [sales@rtd.com](mailto:sales@rtd.com)

### 1.2.2 TECHNICAL SUPPORT

For help with this product, or any other product made by RTD, you can contact RTD Embedded Technologies technical support via the following methods:

Phone: 1-814-234-8087 Monday through Friday, 8:00am to 5:00pm (EST).  
E-Mail: [techsupport@rtd.com](mailto:techsupport@rtd.com)

## 2 Specifications

### 2.1 Physical Attributes

*Table 1: Physical Attributes*

Parameter	Value	Unit
Weight	5.7*	lbs.
Power Consumption	13.2*	W
Operating Temperature	-40 to 85*	°C
Storage Temperature	-40 to 85*	°C

\*estimated value

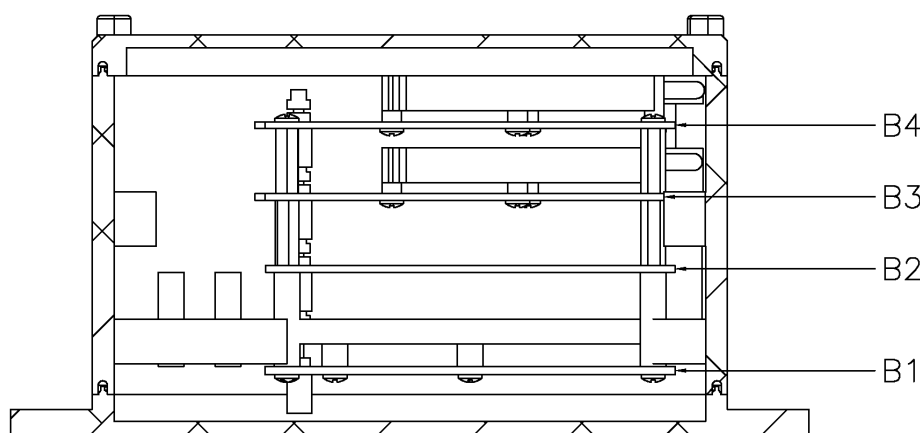
**Power consumption is heavily influenced by the running software and system activity.  
Please refer to the hardware manuals for detailed consumption scenarios.**

### 2.2 Installed Modules

Reference the following table for board manual part numbers and board stacking location. Note that boards stacked on the left side of the frame do not have board manuals.

*Table 2: Installed Modules*

Board Location	Part Number	Description	Board Manual
B1	HD-ATX3510HR-190W	PCIe/104 DC/DC Power Supply	BDM-610020096
B2	PCIe-104-SB15	Spacer Board	BDM-610040018
B3	ID-LAN35H08HR-D	PCIe/104 Eight-Port Gigabit Ethernet Switch	BDM-610020116
B4	ID-LAN35E08HR-D	PCIe/104 Eight-Port Gigabit Ethernet Switch	BDM-610020116

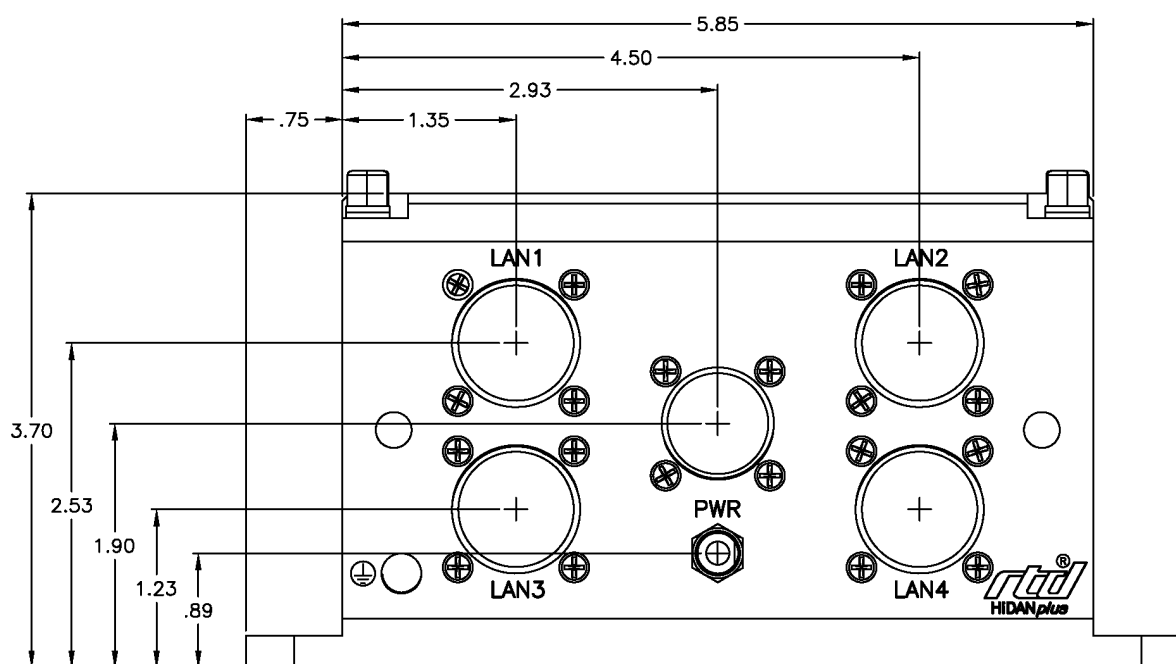


*Figure 1: Board Stack-up*

# 3 System Dimensions

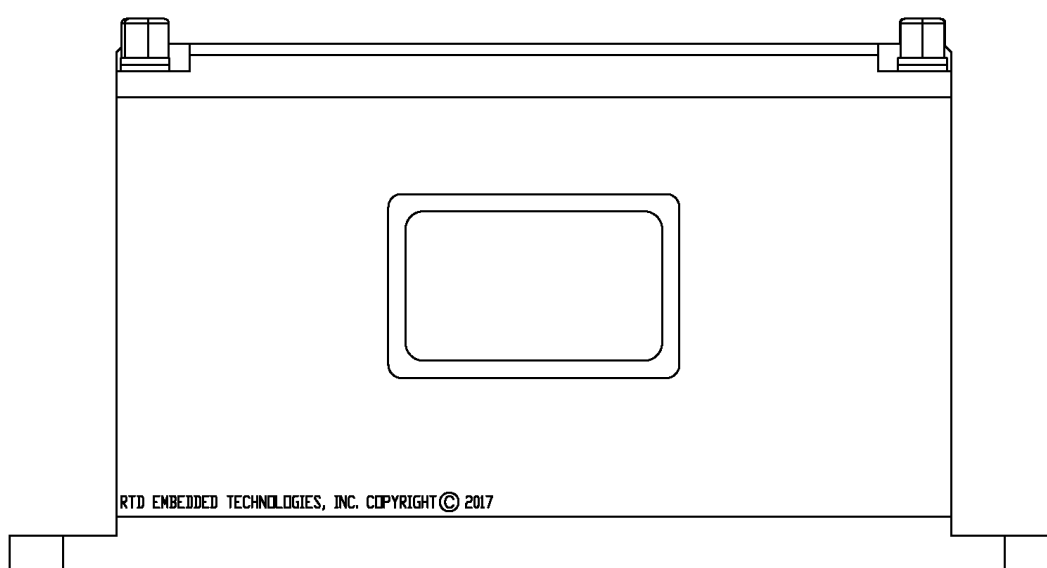
## 3.1 HDP-LAN16 Front View

Figure 2: HDP-LAN16 Dimensional Drawing Front View



## 3.2 HDP-LAN16 Rear View

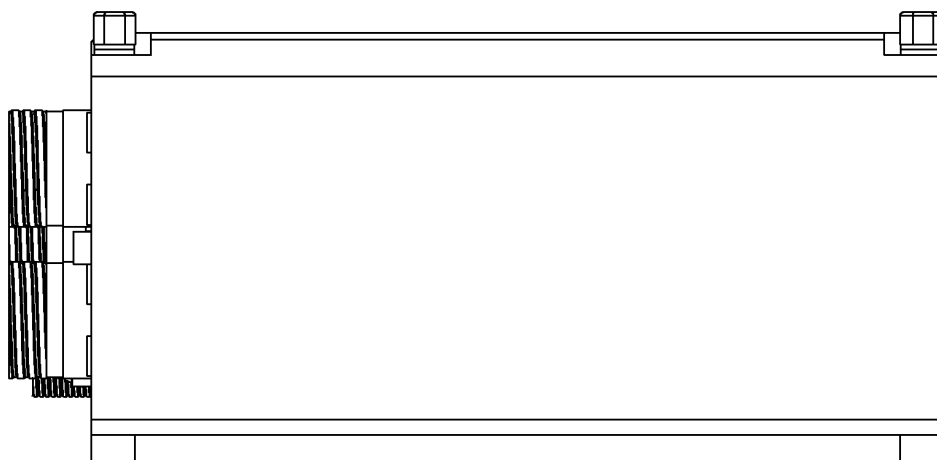
Figure 3: HDP-LAN16 Dimensional Drawing Rear View





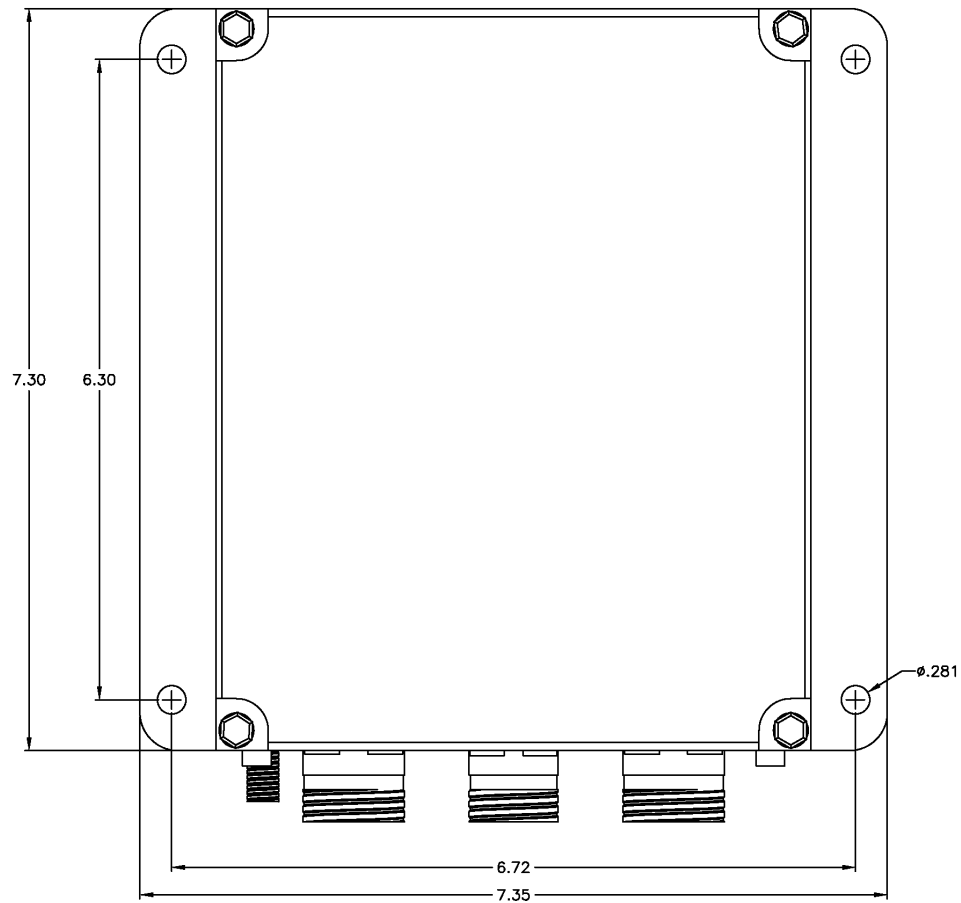
### 3.3 HDP-LAN16 Side View

Figure 4: HDP-LAN16 Dimensional Drawing Right View



### 3.4 HDP-LAN16 Top View

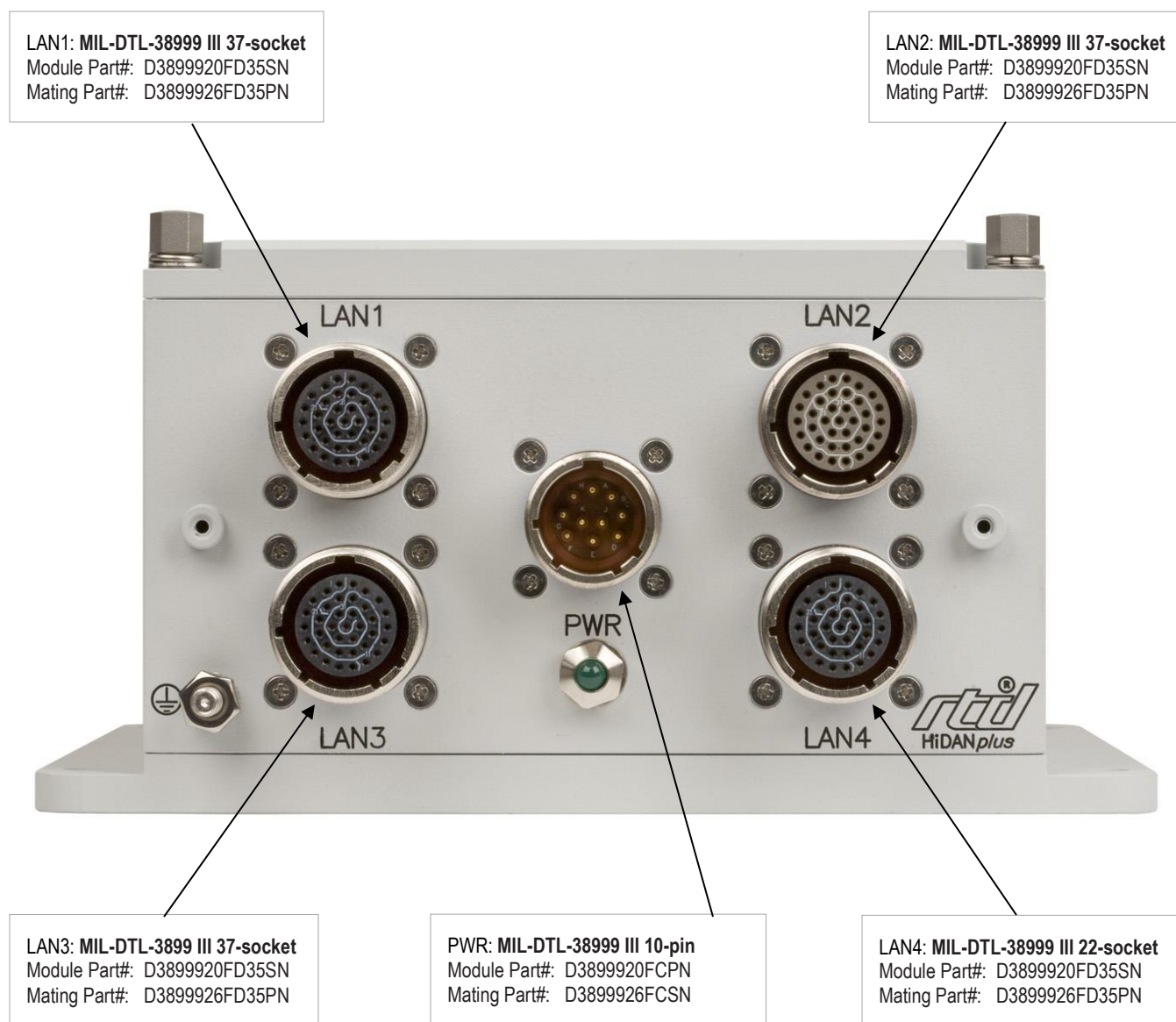
Figure 5: HDP-LAN16 Dimensional Drawing Top View



# 4 External Connectors

## 4.1 External I/O

Figure 6: HDP-LAN16 Front View



## 4.2 HDP-LAN16 LAN 1 & LAN 3

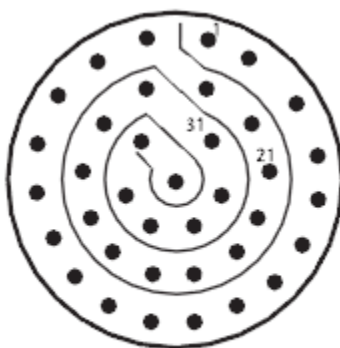
Table 3: HDP-LAN16 LAN 1 & LAN 3 37-Socket

Document #: PWD-472000387						REV: A	
Title: HDPxxxXX LAN 1 Cable							
Connector Jx LAN shall be the following type: D3899920FD35SN MIL CONNECTOR (SOCKET)							
LANx (Jx) PIN	C	S	LAN35x08 (Bx)		SIGNAL NAME	DESCRIPTION	WIRE AWG
			CON	PIN			
1					N/C	No Connect	
2					N/C	No Connect	
3					N/C	No Connect	
4					N/C	No Connect	
5					N/C	No Connect	
6		Green	PORT 1	1	B+	Receive B+ (10/100)	24
7	Green	Green	PORT 1	2	B -	Receive B- (10/100)	24
8	Blue	Blue	PORT 1	3	C+	(1000)	24
9		Blue	PORT 1	4	C -	(1000)	24
10		Orange	PORT 1	5	A+	Transmit A+ (10/100)	24
11	Orange	Orange	PORT 1	6	A -	Transmit A- (10/100)	24
12		Brown	PORT 1	7	D+	(1000)	24
13	Brown	Brown	PORT 1	8	D -	(1000)	24
14		Green	PORT 2	1	B+	Receive B+ (10/100)	24
15	Green	Green	PORT 2	2	B -	Receive B- (10/100)	24
16	Blue	Blue	PORT 2	3	C+	(1000)	24
17		Blue	PORT 2	4	C -	(1000)	24
18		Orange	PORT 2	5	A+	Transmit A+ (10/100)	24
19	Orange	Orange	PORT 2	6	A -	Transmit A- (10/100)	24
20		Brown	PORT 2	7	D+	(1000)	24
21	Brown	Brown	PORT 2	8	D -	(1000)	24
22		Green	PORT 3	1	B+	Receive B+ (10/100)	24
23	Green	Green	PORT 3	2	B -	Receive B- (10/100)	24
24	Blue	Blue	PORT 3	3	C+	(1000)	24
25		Blue	PORT 3	4	C -	(1000)	24
26		Orange	PORT 3	5	A+	Transmit A+ (10/100)	24
27	Orange	Orange	PORT 3	6	A -	Transmit A- (10/100)	24
28		Brown	PORT 3	7	D+	(1000)	24
29	Brown	Brown	PORT 3	8	D -	(1000)	24
30		Green	PORT 4	1	B+	Receive B+ (10/100)	24
31	Green	Green	PORT 4	2	B -	Receive B- (10/100)	24
32	Blue	Blue	PORT 4	3	C+	(1000)	24
33		Blue	PORT 4	4	C -	(1000)	24
34		Orange	PORT 4	5	A+	Transmit A+ (10/100)	24
35	Orange	Orange	PORT 4	6	A -	Transmit A- (10/100)	24
36		Brown	PORT 4	7	D+	(1000)	24
37	Brown	Brown	PORT 4	8	D -	(1000)	24

C = Wire Color

S = Wire Stripe Color

Table 3: Continued



**15-35**

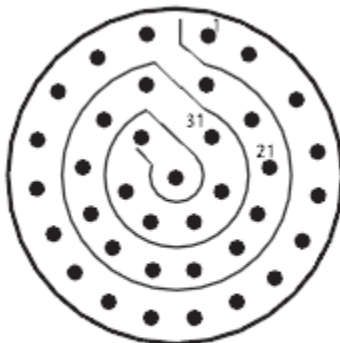
### 4.3 HDP-LAN16 LAN 2 & LAN 4

Table 4: HDP-LAN16 LAN 2 & LAN 4 37-Socket

Document #: PWD-472000388							REV: A
Title: HDPxxxXX LAN 2 Cable							
Connector Jx LAN shall be the following type: D3899920FD35SN MIL CONNECTOR (SOCKET)							
LANx (Jx) PIN	C	S	LAN35x08 (Bx)		SIGNAL NAME	DESCRIPTION	WIRE AWG
			CON	PIN			
1					N/C	No Connect	
2					N/C	No Connect	
3					N/C	No Connect	
4					N/C	No Connect	
5					N/C	No Connect	
6		Green	PORT 5	1	B+	Receive B+ (10/100)	24
7	Green	Green	PORT 5	2	B -	Receive B- (10/100)	24
8	Blue	Blue	PORT 5	3	C+	(1000)	24
9		Blue	PORT 5	4	C -	(1000)	24
10		Orange	PORT 5	5	A+	Transmit A+ (10/100)	24
11	Orange	Orange	PORT 5	6	A -	Transmit A- (10/100)	24
12		Brown	PORT 5	7	D+	(1000)	24
13	Brown	Brown	PORT 5	8	D -	(1000)	24
14		Green	PORT 6	1	B+	Receive B+ (10/100)	24
15	Green	Green	PORT 6	2	B -	Receive B- (10/100)	24
16	Blue	Blue	PORT 6	3	C+	(1000)	24
17		Blue	PORT 6	4	C -	(1000)	24
18		Orange	PORT 6	5	A+	Transmit A+ (10/100)	24
19	Orange	Orange	PORT 6	6	A -	Transmit A- (10/100)	24
20		Brown	PORT 6	7	D+	(1000)	24
21	Brown	Brown	PORT 6	8	D -	(1000)	24
22		Green	PORT 7	1	B+	Receive B+ (10/100)	24
23	Green	Green	PORT 7	2	B -	Receive B- (10/100)	24
24	Blue	Blue	PORT 7	3	C+	(1000)	24
25		Blue	PORT 7	4	C -	(1000)	24
26		Orange	PORT 7	5	A+	Transmit A+ (10/100)	24
27	Orange	Orange	PORT 7	6	A -	Transmit A- (10/100)	24
28		Brown	PORT 7	7	D+	(1000)	24
29	Brown	Brown	PORT 7	8	D -	(1000)	24
30		Green	PORT 8	1	B+	Receive B+ (10/100)	24
31	Green	Green	PORT 8	2	B -	Receive B- (10/100)	24
32	Blue	Blue	PORT 8	3	C+	(1000)	24
33		Blue	PORT 8	4	C -	(1000)	24
34		Orange	PORT 8	5	A+	Transmit A+ (10/100)	24
35	Orange	Orange	PORT 8	6	A -	Transmit A- (10/100)	24
36		Brown	PORT 8	7	D+	(1000)	24
37	Brown	Brown	PORT 8	8	D -	(1000)	24

C = Wire Color  
S = Wire Stripe Color

Table 4: Continued



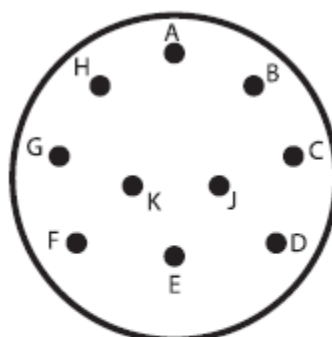
**15-35**

## 4.4 HDP-LAN16 PWR

Table 5: HDP-LAN16 10-Pin

Document #: PWD-472000384							REV: A
Title: HDPxxxAG POWER Cable							
Connector shall be the following type: D3899920FC98PN MIL CONNECTOR (PIN)							
PWR PIN	C	S	ATX3510 (B1)		SIGNAL NAME	DESCRIPTION	WIRE
			CON	PIN			AWG
A	Yellow	Yellow	TB2	1	+12 Vout	+12 Volts Output	20
B	Red	Red	TB2	3	+5 Vout	+ 5 Volts Output	20
C			TB2	4	GND	Ground	20
D			TB1	2	GND	Ground (twisted with J)	20
E			TB1	4	GND	Ground (twisted with K)	20
F		Blue	X1	1	X1-RUN	X1 Control (ON/OFF)	24
G			X1	2	X1-GND	X1 Ground	24
H		Yellow			SHIELD	Chassis Shield	24
J			TB1	1	18-36 vdc	Input Voltage	20
K			TB1	3	18-36 vdc	Input Voltage	20

C = Wire Color  
S = Wire Stripe Color



**13-98**



## 5 Limited Warranty

---

RTD Embedded Technologies, Inc. warrants the hardware and software products it manufactures and produces to be free from defects in materials and workmanship for one year following the date of shipment from RTD Embedded Technologies, Inc. This warranty is limited to the original purchaser of product and is not transferable.

During the one year warranty period, RTD Embedded Technologies will repair or replace, at its option, any defective products or parts at no additional charge, provided that the product is returned, shipping prepaid, to RTD Embedded Technologies. All replaced parts and products become the property of RTD Embedded Technologies. Before returning any product for repair, customers are required to contact the factory for a Return Material Authorization (RMA) number.

This limited warranty does not extend to any products which have been damaged as a result of accident, misuse, abuse (such as: use of incorrect input voltages, improper or insufficient ventilation, failure to follow the operating instructions that are provided by RTD Embedded Technologies, "acts of God" or other contingencies beyond the control of RTD Embedded Technologies), or as a result of service or modification by anyone other than RTD Embedded Technologies. Except as expressly set forth above, no other warranties are expressed or implied, including, but not limited to, any implied warranties of merchantability and fitness for a particular purpose, and RTD Embedded Technologies expressly disclaims all warranties not stated herein. All implied warranties, including implied warranties for merchantability and fitness for a particular purpose, are limited to the duration of this warranty. In the event the product is not free from defects as warranted above, the purchaser's sole remedy shall be repair or replacement as provided above. Under no circumstances will RTD Embedded Technologies be liable to the purchaser or any user for any damages, including any incidental or consequential damages, expenses, lost profits, lost savings, or other damages arising out of the use or inability to use the product.

Some states do not allow the exclusion or limitation of incidental or consequential damages for consumer products, and some states do not allow limitations on how long an implied warranty lasts, so the above limitations or exclusions may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

**RTD Embedded Technologies, Inc.**

103 Innovation Boulevard  
State College, PA 16803 USA  
Telephone: 814-234-8087  
Fax: 814-234-5218

[www.rtd.com](http://www.rtd.com)

[sales@rtd.com](mailto:sales@rtd.com)  
[techsupport@rtd.com](mailto:techsupport@rtd.com)

