

## Quick Installation Guide

#### Introduction

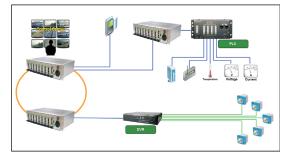
SWITCH

INDUSTRIAL

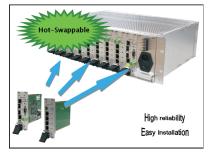
CARD

ORing's CompactPCI series Ethernet switches are designed for industrial applications, such as factory automation, vehicle, and railway applications. CPS-3080-C is a CompactPCI interface managed Redundant Ring Ethernet switch with 8x10/100Base-T(X) ports in CompactPCI socket which is specifically designed for the toughest and fully compliant with EN50155 requirement. With completely support of Ethernet Redundancy protocol, O-Ring (recovery time < 10ms over 250 units of connection), Open-Ring, O-Chain and MSTP/RSTP/STP (IEEE 802.1s/w/D) can protect your mission-critical applications from network interruptions or temporary malfunctions with its fast recovery technology. Another Open-Ring technology is also supported which can applied for other vendor's proprietary ring. O-Chain is the revolutionary network redundancy technology that provides the add-on network redundancy topology for any backbone network, O-Chain allows multiple redundant network rings of different redundancy protocols to join and function together as a larger and more robust compound network topology. O-Chain providing ease-of-use while maximizing fault-recovery swiftness, flexibility, compatibility, and cost-effectiveness in one set of network redundancy topology. CPS-3080-C supports wide operating temperature from -40°C to 70°C which can fulfill most of the requirement of operation environment. Except the Web-based interface, Telnet and console (CLI) configuration, CPS-3080-C can also be managed centralized and conveniently by Open-Vision. Therefore, the switch is one of the most reliable choices for rolling stock and highly-managed Ethernet application.

#### Network connection



#### Hot-Swappable





# **CPS-3080-C**

#### **Specifications**

Beport with CompactPCI Interface (PICMG 2.0 compatible)         EEE 802.3 for 100Base-T         EEE 802.3 of r100Base-TX         EEE 802.3 as for 100Base-TX         EEE 802.3 as for 10APC (LAR Aggregation Control Protocol)         EEE 802.3 as for Flow control         EEE 802.1 as for Flow control         EEE 802.1 as for Flow control         EEE 802.1 por COS (Class of Service)         EEE 802.1 as for AUP (LINK Aggregation Control Protocol)         EEE 802.1 so for NBTP (Multiple Spanning Tree Protocol)         EEE 802.1 so for AUP (LINK Layer Discovery Protocol)         EEE 802.1 as for Authentication         EEE 802.1 so for Authentication         Witching latency: 7 us         witching bandwidth: 1.6Gbps         ax. Number of Available VLANs: 4096         SMP multicast groups: 1024         out rate limiting: User Define         nable/disable ports, MAC based port security         ort see and secure network traffic         uports Q-I-n-Q VLAN for performance & security to expand the VLAN space         aduits centralized passwor
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EEE 802.3 u for 100Base-TX EEE 802.3 u for 100Base-TX EEE 802.3 u for Flow control EEE 802.3 u for Flow control EEE 802.1 10 for STP (Spanning Tree Protocol) EEE 802.1 u for VLAN Tagging EEE 802.1 u for RSTP (Rapid Spanning Tree Protocol) EEE 802.1 u for Authentication EEE 802.1 u for suffer and the state of the stat
EEE 802.3 au for 100Base-TX EEE 802.3 au for 1ACP (Link Aggregation Control Protocol ) EEE 802.3 au for Flow control EEE 802.1 bu for STP (Spanning Tree Protocol) EEE 802.1 au for NCSTP (Ragid Spanning Tree Protocol) EEE 802.1 au for NCSTP (Ragid Spanning Tree Protocol) EEE 802.1 st for NCSTP (Rultiple Spanning Tree Protocol) EEE 802.1 st for Authentication EEE 802.1 st for Authentication EEE 802.1 st for Authentication EEE 802.1 st for step (Link Layer Discovery Protocol) 192 MAC addresses tore-and-Forward witching bandwidth: 1.6Gbps witching bandwidth: 1.6Gbps witching bandwidth: 1.6Gbps av. Number of Available VLAKs: 4096 AWP multicast groups: 1024 ort rate limiting: User Define Table/disable ports, MAC based port security ort based network access control (802.1x) LAN (802.1q) to segregate and secure network traffic upports Q-in-Q ULAN for performance.8 security to expand the VLAN space adlus centralized password management MVPV1/V2/V3 encrypted authentication and access security TP/RSTP/MSTP (IEEE 802.1D/W/s) edundant Ring (O-Ring) with recovery time less than 10ms over 250 units OS/Differs yupported JAN (802.1q) with VLAN tagging and GXPP supported JAN (802.1q) with VLAN tagging and GXPP supported JAN (802.1q) with VLAN tagging and GXPP supported JAN Snooping for multicast filtering ort configuration, status, statistics, monitoring, security MYF for synchronizing of Icoks over network upport PTP Client (precision Time Protocol) Icok synchronization HCP Server (Client support VT (Multicast VLAN Registration) support
tore-and-Forward witching latency: 7 us witching bandwidth: 1.6Gbps ax. Number of Available VLANs: 4096 SMP multicast groups: 1024 ort rate limiting: User Define nable/disable ports, MAC based port security ort based network access control (802.1x) LAN (802.1q) to segregate and secure network traffic upports Q-in-Q VLAN for performance & security to expand the VLAN space adius centralized password management MMPV1/V2C/V2 ancrysted authentication and access security TP/RSTP/MSTP (IEEE 802.1D/w/s) edundant Ring (0-Ring) with recovery time less than 10ms over 250 units OS/Diffsers ysupported Uality of Service (802.1p) for real-time traffic LAN (802.2) uply the VLAN taging and GXPP supported SMP Snooping for multicast filtering ort configuratistics, monitoring, security NTP for synchronizing of clocks over network upport PTP Client (Precision Time Protocol) clock synchronization HCP Server (Lient support
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ort based network access control (802.1x) LAN (802.10) to segregate and secure network traffic upports Q-In-Q VLAN for performance & security to expand the VLAN space adius centralized password management MMPV1/V2c/V2 ancrytoted authentication and access security TP/RSTP/MSTP (IEEE 802.1D/w/s) edundant Ring (0-Ring) with recovery time less than 10ms over 250 units OS/Diffsers ysupported uality of Service (802.1p) for real-time traffic LAN (802.10) with VLAN tagging and GXPR Supported SMP Snooping for multicast filtering ort configuratistics, monitoring, security NTP for synchronizing of clocks over network upport PTP Client (Precision Time Protocol) clock synchronization HCP Server / Client support Ort Trunk support NC (Multicast VLAN Registration) support
edundant Ring (0-Ring) with recovery time less than 10ms over 250 units OS/Diffsers vsupported uality of Service (802.1p) for real-time traffic LAN (802.10) with VLAH tagging and GVRP supported SMP Snooping for multicast filtering ort configuration, status, statistics, monitoring, security NTP for synchronizing of clocks over network upport PTP Client (Precision Time Protocol) clock synchronization HCP Server (Client Support VG (Multicast VLAN Registration) support
-Ring pen-Ring -Chain RP TP/RSTP/MSTP
yslog server / client to record and view events clude SMTP for event warning notification via email vent selection support
S-232 in RJ45 connector with console cable. Baud rate setting: 9600bps, 8, N, 1
reen: Power LED x 1
reen: Indicate system operated in O-Ring Master mode
reen: Indicate system operated in O-Ring mode
mber: Indicate unexpected event occurred
reen for port Link/Act
ompactPCI bus powered
watts
resent
0(W)x187(D)x119.7(H) mm (0.79x7.36x4.71 inch.)
60 g
40 to 85°C (-40 to 185°F)
40 to 70°C (-40 to 158°F)
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## Industrial CompactPCI Managed **Ethernet Switch**

Regulatory Appro	vals
EMI	FCC Part 15, CISPR (EN55022) class A
EMS	EN61000-4-2 (ESD), EN61000-4-3 (RS), EN61000-4-4 (EFT), EN61000-4-5 (Surge), EN61000-4-6 (CS), EN61000-4-8, EN61000-4-11
Shock	IEC60068-2-27
Free Fall	IEC60068-2-32
Vibration	IEC60068-2-6
Safety	EN60950-1
Warranty	5 years

#### **Features**

- > Leading EN50155 compliant Ethernet switch for rolling stock application
- > Supports 3U and 4HP CompactPCI form factor and hot swapping
- > PICMG 2.0 specification compatible
- > Support 8x10/100Base-T(X) ports on CompactPCI sockets
- > World's fastest Redundant Ethernet Ring: O-Ring (recovery time < 10ms over 250 units of connection)
- > Open-Ring support the other vendor's ring technology in open architecture
- > O-Chain allow multiple redundant network rings
- > Support standard IEC 62439-2 MRP (Media Redundancy Protocol) function
- > STP/RSTP/MSTP supported
- Supports Auto Negotiation Speed
- > Support PTP Client (Precision Time Protocol) clock synchronization
- > IGMP v2/v3 (IGMP snooping support) for filtering multicast traffic
- > Port Trunking for easy of bandwidth management
- > SNMP v1/v2c/v3 support for secure network management
- > RMON for traffic monitoring
- > Support LLDP (Link Layer Discovery Protocol)
- > Port lock to prevent access from unauthorized MAC address
- $\triangleright$  Event notification through Syslog, Email, SNMP trap, and Relay Outputon)
- > Windows utility (Open-Vision) support centralized management and configurable by Web-based ,Telnet, Console (CLI)

### **Functional Block**

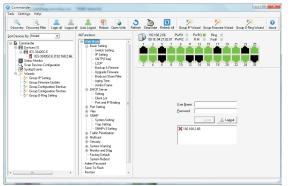


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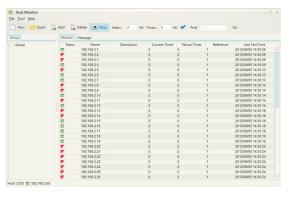
## Open-Vision

ORing's switches are intelligent switches. Different from other traditional redundant switches, ORing provides a set of Windows utility (Open-Vision) for user to manage and monitor all of industrial Ethernet switches on the industrial network.

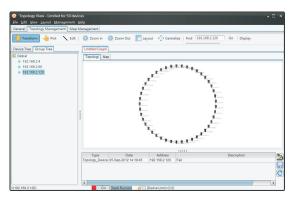
#### Commander



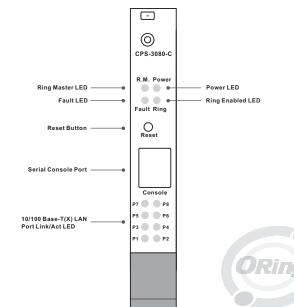
Host Monitor



#### Topology View



### Front Panel



**CPS-3080-C** 

### Accessory





3 QIG

## Packing list

Model name	Model Description	Accessory
CPS-3080-C	3U CompactPCI EN50155 8-port managed Ethernet switch with $8x10/100Base-T(X)$	①X1,②X1, ③X1

2 CD

## Industrial CompactPCI Managed Ethernet Switch

### **Console Port Pin Definition**

PC (male) pin assignment	RS-232 with DB9 (female) pin assignment (RJ45 to DB9 cable)	RJ 45 pin assignment
Pin #2 RxD	Pin #2 TxD	Pin #2 TxD
Pin #3 TxD	Pin #3 RxD	Pin #3 RxD
Pin #5 GND	Pin #5 GND	Pin #5GND

### Backplane Pin Definition

22         GND         NC         STXD         NC         NC         NC         SRXD         GND           21         GND         NC         NC         NC         NC         NC         NC         NC         GND           20         GND         LED5_0         LED5_1         GND         LED7_0         LED7_1         GND           19         GND         LED4_0         LED4_1         GND         LED2_0         LED2_1         GND           18         GND         LED0_0         LED1_1         GND         LED2_0         LED2_1         GND           16         GND         P8_TX+         P8_RX         GND         NC         NC         GND           15         GND         P8_TX+         P8_TX-         GND         NC         NC         GND           13         GND         P7_TX+         P7_TX-         GND         NC         NC         GND           14         GND         P6_TX+         P6_TX-         GND         NC         NC         GND           10         GND         P6_TX+         P6_TX-         GND         NC         NC         GND           10         GND         P5_TX+	Pin	z	Α	в	с	D	E	F	
21         GND         NC         NC         NC         NC         NC         GND         LED5_0         LED5_1         GND         LED7_0         LED7_1         GND           19         GND         LED1_0         LED1_1         GND         LED2_1         GND         LED2_1         GND           18         GND         LED1_0         LED1_1         GND         LED2_1         GND           16         GND         PB_TX+         PB_TX-         GND         NC         NC         GND           14         GND         PT_TX+         PT_TX-         GND         NC         NC         GND           12         GND         P6_TX+         P6_TX-         GND         NC         NC         GND           10         GND         P5_TX+         P6_TX-         GND         NC         NC         GND           10         GND         P5_TX+         P5_TX-         GND         NC         NC         GND           11         GND         P4_TX+         P4_TX-         GND         NC         NC         GND           12         GND         P4_TX+         P4_TX-         GND         NC         NC         GND									
20         GND         LED5_0         LED5_1         GND         LED7_1         GND           19         GND         LED4_0         LED1_1         GND         LED3_0         LED3_1         GND           17         GND         LED0_0         LED1_1         GND         LED2_0         LED3_1         GND           17         GND         P8,RX         P8,RX         GND         N.C         N.C         GND           14         GND         P7,RX         P7,RX         GND         N.C         N.C         GND           13         GND         P6,RX         P7,RX         P7,TX         GND         N.C         N.C         GND           14         GND         P6,TX         P6,TX         GND         N.C         N.C         GND           13         GND         P5,TX         P5,TX         GND         N.C         N.C         GND           14         GND         P4,TX         P1,TX         GND         N.C         N.C         GND           15         GND         P3,TX         P3,TX         GND         N.C         N.C         GND           14         GND         P1,TX         P1,TX         GND									
19         GND         LEDa_0         LEDa_1         GND         NC         NC         GND           16         GND         PATX+         PATX+         PTX-         GND         NC         NC         NC         GND         NC         NC         GND         NC         NC         GND         ND         NC         NC         GND         ND         NT         NC         ND         NC         NC         ND         NC         NC         ND         NC         NC         ND         NC         NC         ND         NC         NC         ND									
18         GND         LED_0         LED_1         GND         LED_1         GND         LED_1         GND         LED_1         GND         LED_1         GND         LED_1         GND         IED_1         GND         IED_1         GND         IED_1         GND         IED_1         GND         IED_1         GND         NC         NC         NC         GND         IED_1         GND         NC         NC         GND         IED_1         GND         NC         NC         N			_			_	_		
17         GND         LED_0         LED_1         GND         LED_1         GND         LED_1         GND           16         GND         P8_RX+         P8_RX-         GND         NC         NC         GND           15         GND         P8_TX+         P8_RX-         GND         NC         NC         GND           14         GND         P7_RX+         P7_RX-         GND         NC         NC         GND           13         GND         P7_RX+         P7_RX-         GND         NC         NC         GND           14         GND         P7_TX+         P5_RX-         GND         NC         NC         GND           12         GND         P6_TX+         P5_RX-         GND         NC         NC         GND           10         GND         P5_TX+         P5_RX-         GND         NC         NC         GND           7         GND         P4_RX+         P4_RX-         GND         NC         NC         GND           4         GND         P3_TX+         P3_TX-         GND         NC         NC         GND           2         GND         P1_RX+         P1_RX-         GND						-	-		
16         GND         P8_RX+         P8_RX-         GND         NC         NC         GND         GND           15         GND         P8_TX+         P8_TX+         GND         NC         NC         GND           14         GND         P7_TX+         P7_RX-         GND         NC         NC         GND           12         GND         P6_RX+         P6_RX-         GND         NC         NC         GND           11         GND         P6_TX+         P5_TX-         GND         NC         NC         GND           9         GND         P5_TX+         P5_TX-         GND         NC         NC         GND           8         GND         P4_RX+         P4_RX-         GND         NC         NC         GND           6         GND         P3_TX+         P3_RX-         GND         NC         NC         GND           3         GND         P2_RX+         P2_RX-         GND         NC         NC         GND           2         GND         P1_RX+         P1_RX-         GND         NC         NC         GND           21         GND         NC         NC         NC         NC <th></th> <th></th> <th>_</th> <th>_</th> <th></th> <th>-</th> <th>-</th> <th></th> <th></th>			_	_		-	-		
15         GND         PA_TX+         PA_TX+         GND         NC         NC         GND         GND           14         GND         P7_TX+         P7_TX-         GND         NC         NC         GND           13         GND         P7_TX+         P7_TX-         GND         NC         NC         GND         GND           12         GND         P6_RX+         P6_RX-         GND         NC         NC         GND           10         GND         P5_TX+         P5_TX-         GND         NC         NC         GND           9         GND         P5_TX+         P4_RX-         GND         NC         NC         GND           7         GND         P4_RX+         P4_RX-         GND         NC         NC         GND           7         GND         P3_TX+         P3_RX-         GND         NC         NC         GND           4         GND         P3_TX+         P3_TX-         GND         NC         NC         GND           2         GND         P1_TX+         P1_TX-         GND         NC         NC         GND           2         GND         NC         +5V         NC <th></th> <th></th> <th>_</th> <th>_</th> <th></th> <th>-</th> <th>-</th> <th></th> <th></th>			_	_		-	-		
14         GND         PT_RX+         PT_RX-         GND         NC         NC         GND         GND           13         GND         P7_TX+         P7_TX-         GND         NC         NC         GND         GND         Inc         NC         GND         Inc         GND         Inc         NC         GND         Inc         Inc         GND         Inc         NC         GND         Inc         Inc         GND         Inc         NC         GND         Inc         Inc         Inc         GND         Inc         Inc         GND         Inc         Inc         GND <th></th> <th></th> <th>_</th> <th>-</th> <th></th> <th></th> <th></th> <th></th> <th></th>			_	-					
13         GND         P_TX+         P_TX+         P_TX-         GND         NC         NC         GND         GND         SC         SC         GND         SC         GND         SC         GND         SC         GND         SC         GND         SC         GND         SC         GND <th></th> <th></th> <th>-</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th>			-						
12         GND         P6_RX+         P6_RX-         GND         NC         NC         GND         GND           11         GND         P6_TX+         P6_TX-         GND         NC         NC         GND           10         GND         P5_RX+         P5_RX-         GND         NC         NC         GND         GND           9         GND         P4_RX+         P4_RX-         GND         NC         NC         GND           7         GND         P4_RX+         P4_RX-         GND         NC         NC         GND           4         GND         P4_RX+         P4_RX-         GND         NC         NC         GND           4         GND         P2_RX+         P3_RX-         GND         NC         NC         GND           2         GND         P1_RX+         P1_RX-         GND         NC         NC         GND           24         GND         NC         SV         NC         NC         NC         GND           22         GND         NC         GND         SV(VIO)         NC         NC         GND           23         GND         NC         GND         SV(VIO)			-	-					
11         GND         PE_TX+         PE_TX+         GND         NC         NC         GND         GND           10         GND         P5_TX+         P5_FX-         GND         NC         NC         GND           9         GND         P5_TX+         P5_TX-         GND         NC         NC         GND           8         GND         P4_TX+         P4_FX-         GND         NC         NC         GND           6         GND         P4_TX+         P4_FX-         GND         NC         NC         GND           6         GND         P3_TX+         P3_TX-         GND         NC         NC         GND           4         GND         P2_TX+         P2_TX-         GND         NC         NC         GND           3         GND         P1_TX+         P1_TX-         GND         NC         NC         GND           24         GND         NC         HSV         NC         NC         HSV         GND           23         GND         HSV         NC         NC         HSV         NC         GND           24         GND         NC         GND         HS         SV(VIO)			-	_					
10         GND         P5_RX+         P5_RX-         GND         NC         NC         GND         GND           9         GND         P5_TX+         P5_TX-         GND         NC         NC         GND           8         GND         P4_RX+         P4_RX-         GND         NC         NC         GND           6         GND         P3_RX+         P4_RX-         GND         NC         NC         GND           6         GND         P3_RX+         P4_RX-         GND         NC         NC         GND           6         GND         P3_RX+         P4_RX-         GND         NC         NC         GND           7         GND         P2_RX+         P2_RX-         GND         NC         NC         GND           4         GND         P1_RX+         P1_RX-         GND         NC         NC         GND           2         GND         P1_RX+         P1_RX-         GND         NC         NC         GND           21         GND         NC         +5V         NC         NC         NC         GND           22         GND         NC         GND         +3.3V         NC	11	GND	-	_		NC	NC	GND	J2/P2
9         GND         P5_TX+         P5_TX-         GND         NC         NC         GND         GND           8         GND         P4_RX+         P4_RX-         GND         NC         NC         GND           7         GND         P4_TX+         P4_RX-         GND         NC         NC         GND           6         GND         P3_RX+         P3_RX-         GND         NC         NC         GND           5         GND         P3_RX+         P3_RX-         GND         NC         NC         GND           4         GND         P2_RX+         P2_RX-         GND         NC         NC         GND           2         GND         P1_RX+         P1_RX-         GND         NC         NC         GND           1         GND         P1_TX+         P1_RX-         GND         NC         NC         GND           24         GND         NC         +5V         SV(VO)         NC         NC         GND           21         GND         NC         GND         +3.3V         NC         NC         GND           21         GND         NC         GND         SV(VO)         NC			_	_		-			
8         GND         PA_RX+         PA_RX-         GND         NC         NC         GND         GND           7         GND         P4_TX+         P4_TX-         GND         NC         NC         GND           6         GND         P3_RX+         P3_RX-         GND         NC         NC         GND           5         GND         P3_TX+         P3_TX-         GND         NC         NC         GND           4         GND         P2_RX+         P2_RX-         GND         NC         NC         GND           3         GND         P2_TX+         P2_TX-         GND         NC         NC         GND           2         GND         P1_TX+         P1_TX-         GND         NC         NC         GND           24         GND         NC         GND         NC         NC         NC         GND           23         GND         NC         GND         NC         GNC         NC         GND           24         GND         NC         GND         +3.3V         NC         NC         NC         GND           21         GND         NC         GND         5V(VO)         NC<			-	_					
7         GND         PA_TX+         PA_TX+         GND         NC         NC         GND         GND           6         GND         P3_RX+         P3_RX-         GND         NC         NC         GND           5         GND         P3_TX+         P3_TX-         GND         NC         NC         GND           4         GND         P2_RX+         P2_RX-         GND         NC         NC         GND           2         GND         P1_RX+         P1_RX-         GND         NC         NC         GND           1         GND         P1_RX+         P1_TX-         GND         NC         NC         GND           24         GND         NC         SV         NC         NC         NC         GND           23         GND         NC         GND         SV/VIO)         NC         NC         GND           24         GND         NC         GND         SV/VIO)         NC         NC         GND           23         GND         NC         GND         SV/VIO)         NC         NC         GND           20         GND         NC         GND         SV/VIO)         NC <td< td=""><th>8</th><td></td><td>_</td><td>_</td><td></td><td></td><td></td><td></td><td></td></td<>	8		_	_					
6         GND         P3_RX+         P3_RX-         GND         NC         NC         GND         GND           5         GND         P3_TX+         P3_TX-         GND         NC         NC         GND           4         GND         P2_RX+         P2_RX-         GND         NC         NC         GND           3         GND         P2_TX+         P2_TX-         GND         NC         NC         GND           1         GND         P1_TX+         P1_TX-         GND         NC         NC         GND           1         GND         P1_TX+         P1_TX-         GND         NC         NC         GND           24         GND         NC         HSV         NC         NC         HSV         GND           21         GND         NC         GND         +3.3V         NC         NC         GNC         GND           20         GND         NC         GND         +3.3V         NC         NC         GND         GND           18         GND         NC         GND         5V(VIO)         NC         GND         GND           16         GND         NC         GND         5V(			_						
5         GND         P3         TX+         P3         TX         GND         NC         NC         GND         GND         NC         GND         NC         GND         NC         GND         GND         NC         GND         GND         GND         NC         GND         GND         NC         GND         GND <th< th=""><th></th><th></th><th>_</th><th>_</th><th></th><th></th><th></th><th></th><th></th></th<>			_	_					
4         GND         P2_RX+         P2_RX-         GND         NC         NC         GND         GND           3         GND         P2_TX+         P2_TX-         GND         NC         NC         GND           2         GND         P1_RX+         P1_RX-         GND         NC         NC         GND           1         GND         P1_TX+         P1_RX-         GND         NC         NC         GND           2         GND         P1_TX+         P1_TX-         GND         NC         NC         GND           1         GND         P1_TX+         P1_TX-         GND         NC         NC         GND           24         GND         NC         +5V         SV(VIO)         NC         NC         GND           23         GND         NC         GND         +3.3V         NC         NC         NC         GND           24         GND         NC         GND         5V(VIO)         NC         NC         GND           21         GND         NC         GND         5V(VIO)         NC         NC         GND           19         GND         NC         GND         SV(VIO)	5		-	_		NC	NC	GND	
2         GND         PI_RX+         PI_RX-         GND         NC         NC         GND           1         GND         P1_TX+         P1_TX-         GND         NC         NC         GND           25         GND         +5V         NC         NC         +3.3V         +5V         GND           24         GND         NC         +5V         NC         NC         +5V         NC         GND           23         GND         +3.3V         NC         NC         +5V         NC         GND           22         GND         NC         GND         +3.3V         NC         NC         NC         GND           20         GND         NC         GND         5V(VIO)         NC         GNC         GND           18         GND         NC         GND         +3.3V         NC         NC         GND           16         GND         NC         GND         5V(VIO)         NC         GND         GND           11         GND         NC         GND         5V(VIO)         NC         GND         GND           12         11         GND         NC         GND         NC	-	-	-	-					
2         GND         PI_RX+         PI_RX-         GND         NC         NC         GND           1         GND         P1_TX+         P1_TX-         GND         NC         NC         GND           25         GND         +5V         NC         NC         +3.3V         +5V         GND           24         GND         NC         +5V         SV(VIO)         NC         NC         GND           23         GND         +3.3V         NC         NC         +5V         NC         GND           22         GND         NC         GND         +3.3V         NC         NC         NC         GND           20         GND         NC         GND         5V(VIO)         NC         GND         GND           11         GND         NC         GND         +3.3V         NC         NC         GND           16         GND         NC         GND         5V(VIO)         NC         MC         GND           11         GND         NC         GND         NC         GND         NC         GND           12         11         GND         NC         GND         NC         GND	3	GND	- P2 TX+		GND	NC	NC	GND	
1         GND         PTX+         PTX+         GND         NC         NC         GND         GND           25         GND         +5V         NC         NC         +3.3V         +5V         GND           24         GND         NC         +5V         5V(VIO)         NC         NC         GND           23         GND         +3.3V         NC         NC         +5V         NC         GND           22         GND         NC         GND         +3.3V         NC         NC         NC         GND           21         GND         +3.3V         NC         NC         NC         GND         GND           20         GND         NC         GND         5V(VIO)         NC         NC         GND           18         GND         NC         GND         +3.3V         NC         NC         GND         GND           16         GND         NC         GND         5V(VIO)         NC         GND         GND         GND         14         13         13         13         13         13         13         14         13         14         14         14         14         14         14 <th>2</th> <th>GND</th> <th>-</th> <th></th> <th></th> <th>NC</th> <th></th> <th></th> <th></th>	2	GND	-			NC			
25         GND         +5V         NC         NC         +3.3V         +5V         GND           24         GND         NC         +5V         5V(VIO)         NC         NC         GND           23         GND         +3.3V         NC         NC         +5V         NC         MC         GND           23         GND         NC         GND         NC         NC         HSV         NC         GND           22         GND         NC         GND         +3.3V         NC         NC         NC         GND           20         GND         NC         GND         5V(VIO)         NC         NC         GND           19         GND         +3.3V         NC         NC         GND         GND         GND           16         GND         +3.3V         NC         NC         GND         NC         GND           16         GND         NC         GND         5V(VIO)         NC         NC         GND           14         13         14         13         14         14         13         14           13         GND         NC         GND         NC         GND	1		-	-		NC	NC		
24         GND         NC         +5V         5V(VIO)         NC         NC         GND           23         GND         +3.3V         NC         NC         +5V         NC         GND           22         GND         NC         GND         +3.3V         NC         NC         NC         NC         GND           21         GND         NC         GND         +3.3V         NC         NC         NC         GND           20         GND         NC         GND         5V(VIO)         NC         NC         GND           19         GND         NC         GND         5V(VIO)         NC         GND         GND           18         GND         NC         GND         +3.3V         NC         NC         GND         GND           16         GND         NC         GND         SV(VIO)         NC         NC         GND           14         13         12           SU         SU         GND         NC         GND           10         GND         NC         GND         NC         GND         NC         GND         GND           11         GND			_	_					
23         GND         +3.3V         NC         NC         +5V         NC         GND           22         GND         NC         GND         +3.3V         NC         NC         NC         GND           21         GND         +3.3V         NC         NC         NC         NC         GND           20         GND         +3.3V         NC         NC         NC         NC         GND           20         GND         NC         GND         5V(VO)         NC         NC         GND           19         GND         +3.3V         NC         NC         GND         NC         GND           17         GND         +3.3V         NC         NC         GND         NC         GND           16         GND         NC         GND         SV(VO)         NC         NC         GND           14         13         12         11         GND         NC         GND         NC         GND           10         GND         NC         GND         NC         GND         NC         GND           11         GND         NC         GND         NC         GND         GND	25	GND	+5V	NC	NC	+3.3V	+5V	GND	
22         GND         NC         GND         +3.3V         NC         NC         NC         GND           21         GND         +3.3V         NC         NC         NC         NC         NC         GND           20         GND         NC         GND         5V(VO)         NC         NC         GND         GND           19         GND         +3.3V         NC         NC         GND         NC         GND           18         GND         NC         GND         +3.3V         NC         NC         GND         GND           16         GND         NC         GND         5V(VO)         NC         NC         GND           14         GND         +3.3V         NC         NC         GND         NC         GND           13         12	24	GND	NC	+5V	5V(VIO)	NC	NC	GND	
21         GND         +3.3V         NC         NC         NC         NC         NC         GND         H3.7V         NC         GND         NC         GND         Style         Style         GND         Style         Style         GND         Style         Style         Style         GND         Style         Style         Style         Style         Style         Style         Style </td <th>23</th> <td>GND</td> <td>+3.3V</td> <td>NC</td> <td>NC</td> <td>+5V</td> <td>NC</td> <td>GND</td> <td></td>	23	GND	+3.3V	NC	NC	+5V	NC	GND	
20         GND         NC         GND         SV(VIO)         NC         NC         GND         SU(VIO)         NC         NC         GND         SU(VIO)         NC         GND         SU(VIO)         NC         GND         SU(VIO)         NC         GND         SU(VIO)         NC         GND         NC         GND         SU(VIO)         NC         GND         NC         GND         SU(VIO)         SU(VIO)         NC         GND         SU(VIO)         <	22	GND	NC	GND	+3.3V	NC	NC	GND	
19         GND         +3.3V         NC         NC         GND         NC         GND         NC         GND         H3           18         GND         NC         GND         +3.3V         NC         NC         GND         NC         GND           17         GND         +3.3V         NC         NC         GND	21	GND	+3.3V	NC	NC	NC	NC	GND	
18         GND         NC         NC         NC         GND         S         GND         NC         GND         S         GND         NC         GND         S         GND         NC <t< th=""><th>20</th><th>GND</th><th>NC</th><th>GND</th><th>5V(VIO)</th><th>NC</th><th>NC</th><th>GND</th><th></th></t<>	20	GND	NC	GND	5V(VIO)	NC	NC	GND	
17         GND         +3.3V         NC         NC         GND         NC         GND         NC         GND           16         GND         NC         GND         5V(V/O)         NC         NC         GND           15         GND         +3.3V         NC         NC         GND         NC         GND           14	19	GND	+3.3V	NC	NC	GND	NC	GND	J1/P1
16         GND         NC         GND         SV(VIO)         NC         NC         GND           15         GND         +3.3V         NC         NC         GND         NC         GND           14         13	18	GND	NC	GND	+3.3V	NC	NC	GND	
15         GND         +3.3V         NC         NC         GND         NC         GND           14         13         -	17	GND	+3.3V	NC	NC	GND	NC	GND	
14         13           12	16	GND	NC	GND	5V(VIO)	NC	NC	GND	
13         13           12         11         GND         NC         NC         NC         GND         NC         GND           10         GND         NC         GND         +3.3V         NC         NC         GND           9         GND         NC         GND         NC         GND         NC         GND           7         GND         NC         GND         +3.3V         NC         NC         GND           6         GND         NC         GND         5V(ViO)         NC         GND         GND           5         GND         NC         NC         NC         GND         GND         GND         GND         NC         GND           4         GND         NC         NC         NC         SGND         NC         GND         GND         NC         GND         SGND         NC         SGND         NC         SGND         NC         GND         SGND         NC         SGND         NC         SGND	15	GND	+3.3V	NC	NC	GND	NC	GND	
12         NC         NC         NC         GND         NC         GND           11         GND         NC         GND         +3.3V         NC         GND           10         GND         NC         GND         +3.3V         NC         NC         GND           9         GND         NC         GND         NC         GND         NC         GND           7         GND         NC         GND         NC         NC         GND         NC         GND           6         GND         NC         GND         +3.3V         NC         NC         GND           5         GND         NC         NC         NC         GND         GND         GND           4         GND         NC         NC         SV(VIO)         NC         NC         GND           3         GND         NC         NC         NC         SV(VIO)         NC         GND           4         GND         NC         NC         NC         HO         GND         GND           3         GND         NC         NC         NC         NC         GND         GND           1         GND									
11         GND         NC         NC         NC         GND         NC         GND           10         GND         NC         GND         +3.3V         NC         NC         GND           9         GND         NC         GND         NC         GND         NC         GND           8         GND         NC         GND         5V(VIO)         NC         NC         GND           7         GND         NC         GND         NC         MC         GND         GND           6         GND         NC         GND         +3.3V         NC         NC         GND           5         GND         NC         GND         +3.3V         NC         NC         GND           4         GND         NC         NC         NC         GND         NC         GND           3         GND         NC         NC         NC         NC         GND         QND         QND         QND           2         GND         NC         +5V         NC         NC         NC         QND         QND         QND         QND         QND         QND         QND         QND         QND         QND<									
10         GND         NC         GND         +3.3V         NC         NC         GND           9         GND         NC         GND         NC         GND         NC         GND           8         GND         NC         GND         5V(VIO)         NC         NC         GND           7         GND         NC         MC         NC         GND         NC         GND           6         GND         NC         GND         +3.3V         NC         NC         GND           6         GND         NC         GND         NC         GND         NC         GND           5         GND         NC         GND         NC         NC         GND         GND           4         GND         NC         NC         NC         SV(VIO)         NC         NC         GND           3         GND         NC         NC         NC         NC         GND         GND         NC         SV(VIO)         NC         NC         GND           2         GND         NC         NC         NC         NC         NC         GND           1         GND         +5V         NC									
9         GND         NC         GND         NC         GND         NC         GND           8         GND         NC         GND         5V(VIO)         NC         NC         GND           7         GND         NC         NC         NC         GND         NC         GND           6         GND         NC         GND         +3.3V         NC         NC         GND           5         GND         NC         NC         NC         GND         NC         GND           4         GND         NC         NC         SV(VIO)         NC         NC         GND           3         GND         NC         NC         NC         4         GND         NC         +5V         NC         GND           2         GND         NC         +5V         NC         NC         NC         GND           1         GND         +5V         -12V         NC         +12V         +5V         GND	11	GND	NC	NC	NC	GND	NC	GND	
8         GND         NC         GND         SV(VIO)         NC         NC         GND           7         GND         NC         NC         NC         GND         NC         GND           6         GND         NC         GND         +3.3V         NC         NC         GND           5         GND         NC         NC         NC         GND         NC         GND           4         GND         NC         NC         5V(VIO)         NC         NC         GND           3         GND         NC         NC         NC         HO         GND           2         GND         NC         +5V         NC         NC         GND           1         GND         +5V         -12V         NC         +12V         +5V         GND									
7         GND         NC         NC         NC         GND         NC         GND           6         GND         NC         GND         +3.3V         NC         NC         GND           5         GND         NC         NC         NC         GND         NC         GND           4         GND         NC         NC         SV(VIO)         NC         NC         GND           3         GND         NC         NC         NC         HSV         NC         GND           2         GND         NC         +5V         NC         NC         NC         GND           1         GND         +5V         -12V         NC         +12V         +5V         GND									
6         GND         NC         GND         +3.3V         NC         NC         GND           5         GND         NC         NC         NC         GND         NC         GND           4         GND         NC         NC         SV(VIO)         NC         NC         GND           3         GND         NC         NC         NC         HO         GND           2         GND         NC         +5V         NC         NC         GND           1         GND         +5V         -12V         NC         +12V         +5V         GND									
5         GND         NC         NC         NC         GND         NC         GND           4         GND         NC         NC         SV(VIO)         NC         NC         GND           3         GND         NC         NC         NC         H5V         NC         GND           2         GND         NC         +5V         NC         NC         GND           1         GND         +5V         -12V         NC         +12V         +5V         GND									
4         GND         NC         NC         SV(VIO)         NC         NC         GND           3         GND         NC         NC         NC         +5V         NC         GND           2         GND         NC         +5V         NC         NC         GND           1         GND         +5V         -12V         NC         +12V         +5V         GND									
3         GND         NC         NC         NC         +5V         NC         GND           2         GND         NC         +5V         NC         NC         NC         GND           1         GND         +5V         -12V         NC         +12V         +5V         GND									
2         GND         NC         +5V         NC         NC         NC         GND           1         GND         +5V         -12V         NC         +12V         +5V         GND									
1 GND +5V -12V NC +12V +5V GND									
Pin Z A B C D E F									
	Pin	Z	Α	В	С	D	E	F	

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