



## Product Specification

for the

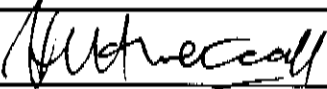
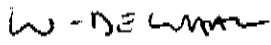

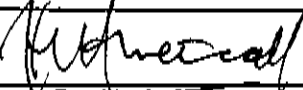
### 16-Channel Connectorised Serial I/O Cable Assembly

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## Abbreviations and Acronyms

AWG	American Wire Gauge
C	Degrees Centigrade
CD	Carrier Detect
cPCI	Compact Peripheral Component Interconnect
CTS	Clear To Send
DSR	Data Set Ready
DTR	Data Terminal Ready
GND	Signal Ground
LFH	Low Force Helix
ICD	Interface Control Document
I/O	Input / Output
PCI	Peripheral Component Interconnect
PMC	PCI Mezzanine Card
RS-232	(Electronics Industries Association) Recommended Standard 232
RS-422	(Electronics Industries Association) Recommended Standard 422
RI	Ring Indicator
RTS	Request To Send
RxD	Received Data
SIO	Serial Input / Output
TxD	Transmitted Data
V	Volt
UL	Underwriters Laboratories

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1. **Introduction and Scope**

1.1 Introduction

C<sup>2</sup>I<sup>2</sup> Systems manufactures and sells a family of Serial I/O Adapters and Boards in the PMC, PCI-104, PCI and cPCI formfactors. Certain versions of these adapters employ frontpanel I/O.

In such cases, a cable is required to provide physical access to the serial I/O signals available on the frontpanel connector of these serial I/O adapters and the corresponding serial data terminal equipment.

The 16-Channel Connectorised Serial I/O Cable Assembly consists of a 160-pin Molex connector (Part No. 71624-3000) connected to sixteen male DE-9 connectors using sixteen cables of nominally 2,0 m in length.

1.2 Scope

This document details the mapping of the signals required for the 16-Channel Connectorised Serial I/O Cable Assembly and specification of the cable used.

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2. **Applicable and Reference Documents**

2.1 Applicable Documents

2.1.1 None.

2.2 Reference Documents

2.2.1 None.

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3. **Description**

The Cable Assembly is described as follows :

3.1 Cable Number

The Part Number for the cable is CCII/LCP/9-CCM/002/9-CCM/002

3.2 Application

The cable is intended to be used with the 16-Channel Isolated Serial I/O cPCI Board, Part Numbers CCII/SIO/3CPCI/16PU/FP/COM, CCII/SIO/3CPCI/16PU/FP/IND and CCII/SIO/3CPCI/16PU/FP/RGD.

3.3 Configuration

The Cable Assembly is configured with :

- All channels : 160-pin LFH (Low Force Helix) Connector which interfaces to the board;
- Channels 1 to 8 : DE-9 Male connector, RS-232 only;
- Channels 9 to 16 : DE-9 Male connector, RS-232 and RS-422.

3.4 Cable Specification

3.4.1 Description

Underwriters Laboratories (UL) Style 2464, 30 AWG, 9-Core, Single Copper Foil Shield, Black PVC Jacket, nominal Outer Diameter 5 mm.

3.4.2 Maximum Temperature

Maximum operating temperature is 80 C.

3.4.3 Maximum Voltage

Maximum rated voltage 300 V.

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4. **Pinouts**

The pinout mapping of the cable assembly is as follows :

Pin No.	Connector J1 Signal Name Molex (71624-3000)	Pin No.	DE-9 Connector Signal Name
<b>RS-232 (Channel 1)</b>			
133	CD	1	Carrier Detect
147	RxD	2	Received Data
148	TxD	3	Transmitted Data
140	DTR	4	Data Terminal Ready
128	GND	5	Ground
139	DSR	6	Data Set Ready
146	RTS	7	Request To Send
145	CTS	8	Clear To Send
136	RI	9	Ring Indicator
<b>RS-232 (Channel 2)</b>			
130	CD	1	Carrier Detect
155	RxD	2	Received Data
156	TxD	3	Transmitted Data
138	DTR	4	Data Terminal Ready
127	GND	5	Ground
137	DSR	6	Data Set Ready
154	RTS	7	Request To Send
153	CTS	8	Clear To Send
131	RI	9	Ring Indicator
<b>RS-232 (Channel 3)</b>			
89	CD	1	Carrier Detect
118	RxD	2	Received Data
117	TxD	3	Transmitted Data
109	DTR	4	Data Terminal Ready
121	GND	5	Ground
110	DSR	6	Data Set Ready
119	RTS	7	Request To Send
120	CTS	8	Clear To Send
90	RI	9	Ring Indicator

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Pin No.	Connector J1 Signal Name Molex (71624-3000)	Pin No.	DE-9 Connector Signal Name
<b>RS-232 (Channel 4)</b>			
93	CD	1	Carrier Detect
102	RxD	2	Received Data
101	TxD	3	Transmitted Data
111	DTR	4	Data Terminal Ready
122	GND	5	Ground
112	DSR	6	Data Set Ready
103	RTS	7	Request To Send
104	CTS	8	Clear To Send
94	RI	9	Ring Indicator
<b>RS-232 (Channel 5)</b>			
135	CD	1	Carrier Detect
150	RxD	2	Received Data
149	TxD	3	Transmitted Data
141	DTR	4	Data Terminal Ready
126	GND	5	Ground
142	DSR	6	Data Set Ready
151	RTS	7	Request To Send
152	CTS	8	Clear To Send
134	RI	9	Ring Indicator
<b>RS-232 (Channel 6)</b>			
132	CD	1	Carrier Detect
158	RxD	2	Received Data
157	TxD	3	Transmitted Data
143	DTR	4	Data Terminal Ready
125	GND	5	Ground
144	DSR	6	Data Set Ready
159	RTS	7	Request To Send
160	CTS	8	Clear To Send
129	RI	9	Ring Indicator
<b>RS-232 (Channel 7)</b>			
91	CD	1	Carrier Detect
115	RxD	2	Received Data
116	TxD	3	Transmitted Data
108	DTR	4	Data Terminal Ready
124	GND	5	Ground
107	DSR	6	Data Set Ready
114	RTS	7	Request To Send
113	CTS	8	Clear To Send
92	RI	9	Ring Indicator

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Pin No.	Connector J1 Signal Name Molex (71624-3000)	Pin No.	DE-9 Connector Signal Name
<b>RS-232 (Channel 8)</b>			
95	CD	1	Carrier Detect
99	RxD	2	Received Data
100	TxD	3	Transmitted Data
106	DTR	4	Data Terminal Ready
123	GND	5	Ground
105	DSR	6	Data Set Ready
98	RTS	7	Request To Send
97	CTS	8	Clear To Send
96	RI	9	Ring Indicator
<b>Channel 9</b>			
<b>RS-422</b>			
17	TxD+	1	Transmitted Data +
18	TxD-	2	Transmitted Data -
20	RxD+	3	Received Data +
19	RxD-	4	Received Data -
<b>RS-232</b>			
60	GND	5	Ground
56	TxD	6	Transmitted Data
57	RxD	7	Received Data
58	RTS	8	Request To Send
59	CTS	9	Clear To Send
<b>Channel 10</b>			
<b>RS-422</b>			
12	TxD+	1	Transmitted Data +
13	TxD-	2	Transmitted Data -
15	RxD+	3	Received Data +
14	RxD-	4	Received Data -
<b>RS-232</b>			
55	GND	5	Ground
51	TxD	6	Transmitted Data
52	RxD	7	Received Data
53	RTS	8	Request To Send
54	CTS	9	Clear To Send

Pin No.	Connector J1 Signal Name Molex (71624-3000)	Pin No.	DE-9 Connector Signal Name
<b>Channel 11</b>			
<b>RS-422</b>			
7	TxD+	1	Transmitted Data +
8	TxD-	2	Transmitted Data -
10	RxD+	3	Received Data +
9	RxD-	4	Received Data -
<b>RS-232</b>			
45	GND	5	Ground
44	TxD	6	Transmitted Data
42	RxD	7	Received Data
43	RTS	8	Request To Send
41	CTS	9	Clear To Send
<b>Channel 12</b>			
<b>RS-422</b>			
5	TxD+	1	Transmitted Data +
4	TxD-	2	Transmitted Data -
2	RxD+	3	Received Data +
3	RxD-	4	Received Data -
<b>RS-232</b>			
50	GND	5	Ground
49	TxD	6	Transmitted Data
47	RxD	7	Received Data
48	RTS	8	Request To Send
46	CTS	9	Clear To Send
<b>Channel 13</b>			
<b>RS-422</b>			
25	TxD+	1	Transmitted Data +
24	TxD-	2	Transmitted Data -
22	RxD+	3	Received Data +
23	RxD-	4	Received Data -
<b>RS-232</b>			
65	GND	5	Ground
64	TxD	6	Transmitted Data
63	RxD	7	Received Data
62	RTS	8	Request To Send
61	CTS	9	Clear To Send

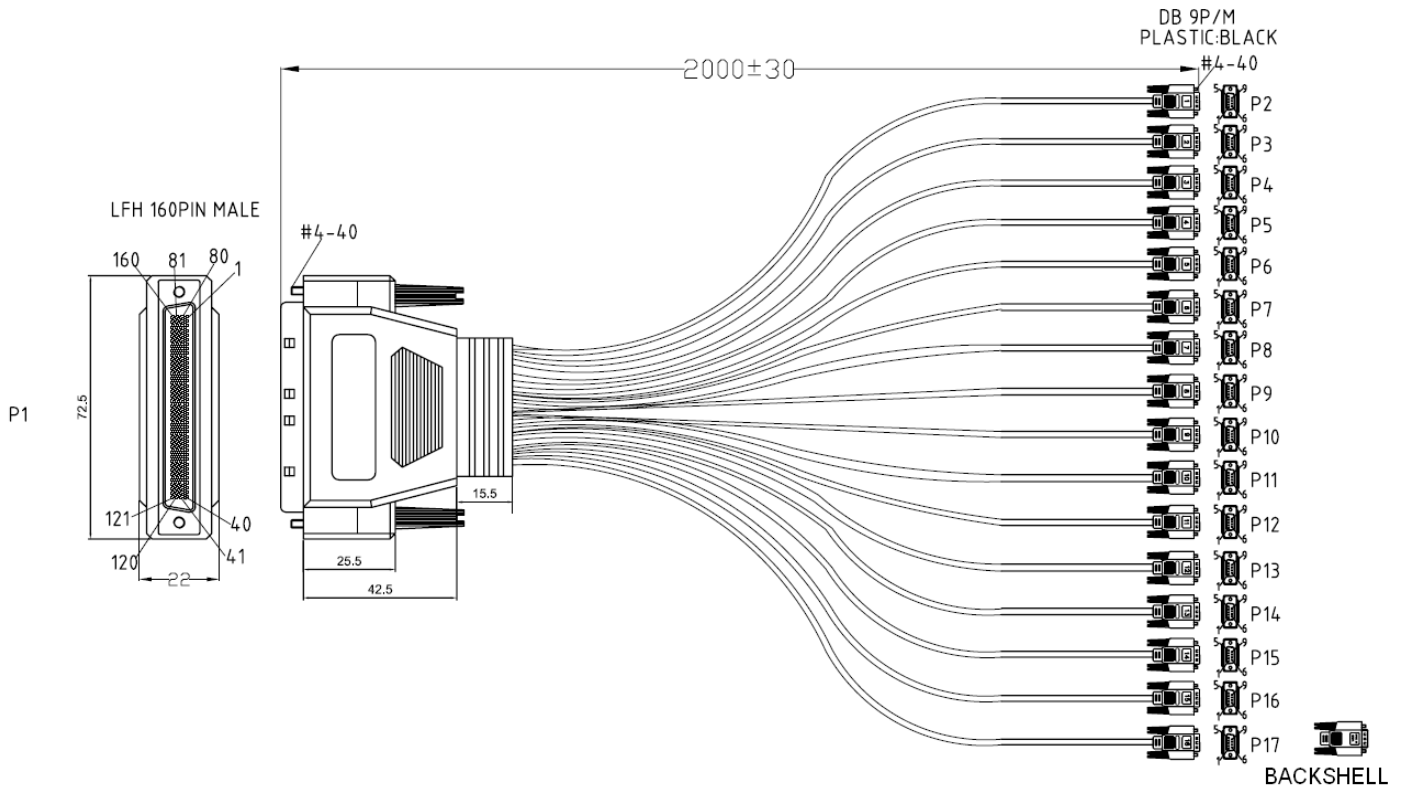
Pin No.	Connector J1 Signal Name Molex (71624-3000)	Pin No.	DE-9 Connector Signal Name
<b>Channel 14</b>			
<b>RS-422</b>			
30	TxD+	1	Transmitted Data +
29	TxD-	2	Transmitted Data -
27	RxD+	3	Received Data +
28	RxD-	4	Received Data -
<b>RS-232</b>			
70	GND	5	Ground
69	TxD	6	Transmitted Data
68	RxD	7	Received Data
67	RTS	8	Request To Send
66	CTS	9	Clear To Send
<b>Channel 15</b>			
<b>RS-422</b>			
37	TxD+	1	Transmitted Data +
38	TxD-	2	Transmitted Data -
40	RxD+	3	Received Data +
39	RxD-	4	Received Data -
<b>RS-232</b>			
75	GND	5	Ground
74	TxD	6	Transmitted Data
73	RxD	7	Received Data
72	RTS	8	Request To Send
71	CTS	9	Clear To Send
<b>Channel 16</b>			
<b>RS-422</b>			
32	TxD+	1	Transmitted Data +
33	TxD-	2	Transmitted Data -
35	RxD+	3	Received Data +
34	RxD-	4	Received Data -
<b>RS-232</b>			
80	GND	5	Ground
76	TxD	6	Transmitted Data
77	RxD	7	Received Data
78	RTS	8	Request To Send
79	CTS	9	Clear To Send



# Annexure A

## Drawing

### A.1 Drawing of Cable Assembly



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## Annexure B

### Photograph

#### B.1 Photograph of a Typical Cable Assembly



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