

**phyCORE-XC161 (PCM-020)
phyCORE-XC167 (PCM-021)
OCDS 1 Connector Pin Description**

This application note contains important information regarding the use of the OCDS 1 interface provided on the Infineon XC161/XC167 controller mounted on a the phyCORE-XC16x Single Board Computer module in conjunction with the Keil ULink interface.

NOTE: The phyCORE-XC161 has recently undergone a PCB redesign to correct an error with the OCDS connector X2 pin assignment. Redesigned phyCORE-XC161 modules will have PCB revision 1214.2 or higher.

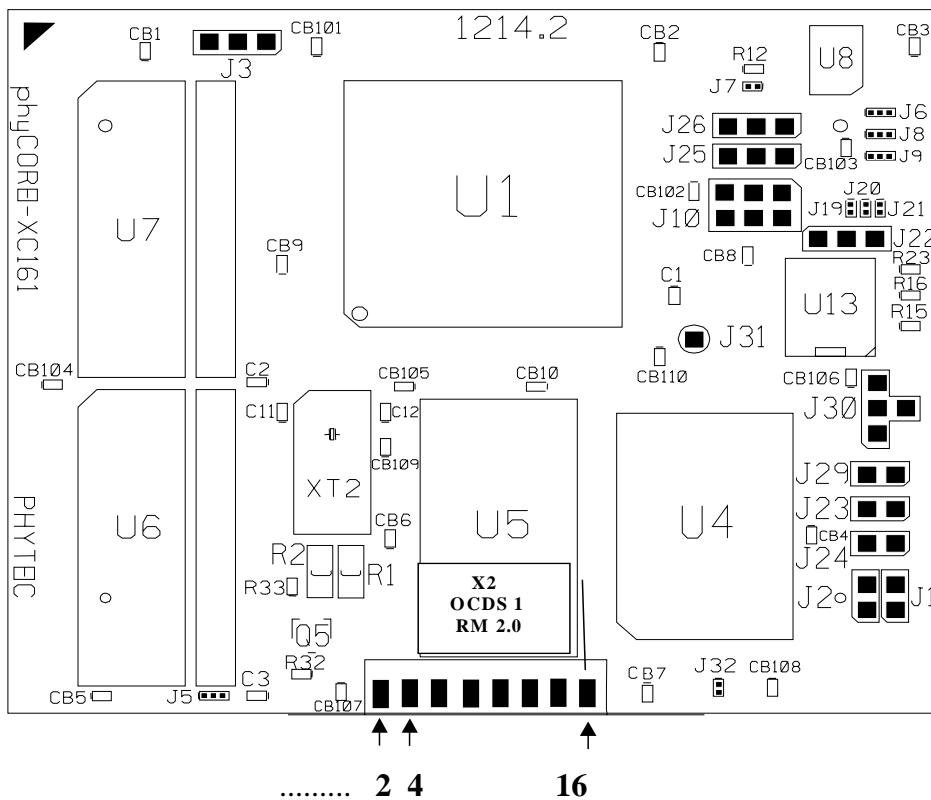


Figure 1: View of the phyCORE-XC161, Controller Side (PCB# 1214.2)

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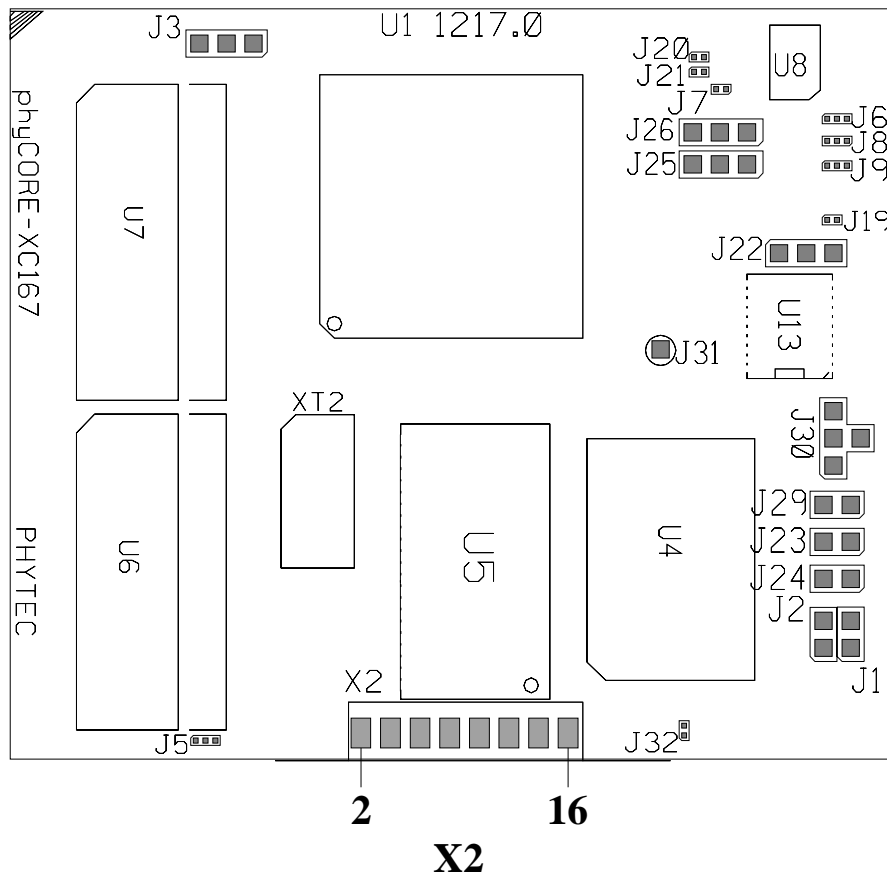


Figure 2: View of the phyCORE-XC167, Controller Side

All pins on the X2 OCDS 1 connector are in 2.0 mm pitch. The suitable pin header connector to populate solder space X2 can be ordered from PHYTEC (part number VL094).

Connecting the phyCORE-XC161/XC167 to a Debugger Interface, such as the Keil ULink Device

If a 16-pin header connector (PHYTEC part number VL094) populates X2 on the phyCORE-XC161/XC167, debug connectivity requires a flat-band adapter cable, PHYTEC part number WF040, to be connected inside the Keil ULink device. Follow the steps below:

- Open the KEIL ULink.
- Remove the flat-band cable that is connected to the header row labeled as "Infineon 16Pin".
- Plug the WF040 adapter cable into this connector. Make sure pin 1 of the cable (red wire) matches pin 1 of the connector.
- Close the KEIL ULink device.
- Connect the ULink to X2 on the phyCORE-XC161/XC167.

Please refer to the image below regarding proper interfacing.

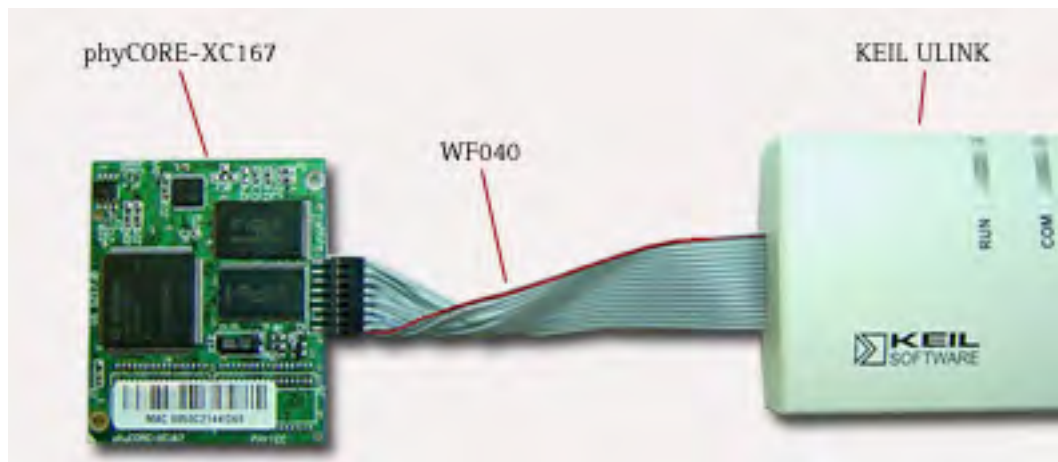


Figure 3: Connecting the phyCORE-XC161/XC167 to a Keil ULink Debug Interface (Image Showing XC167 as Example)

Please contact PHYTEC should you require any of these components or have any additional questions.

phyCORE-XC161 (PCM-020) with PCB Revision 1214.0

Older phyCORE-XC161 modules with PCB revision 1214.0 or 1214.1 had an error with the OCDS connector X2 pin assignment. Odd and even pin numbers were swapped. The following section only describes these older revisions of the phyCORE-XC161.

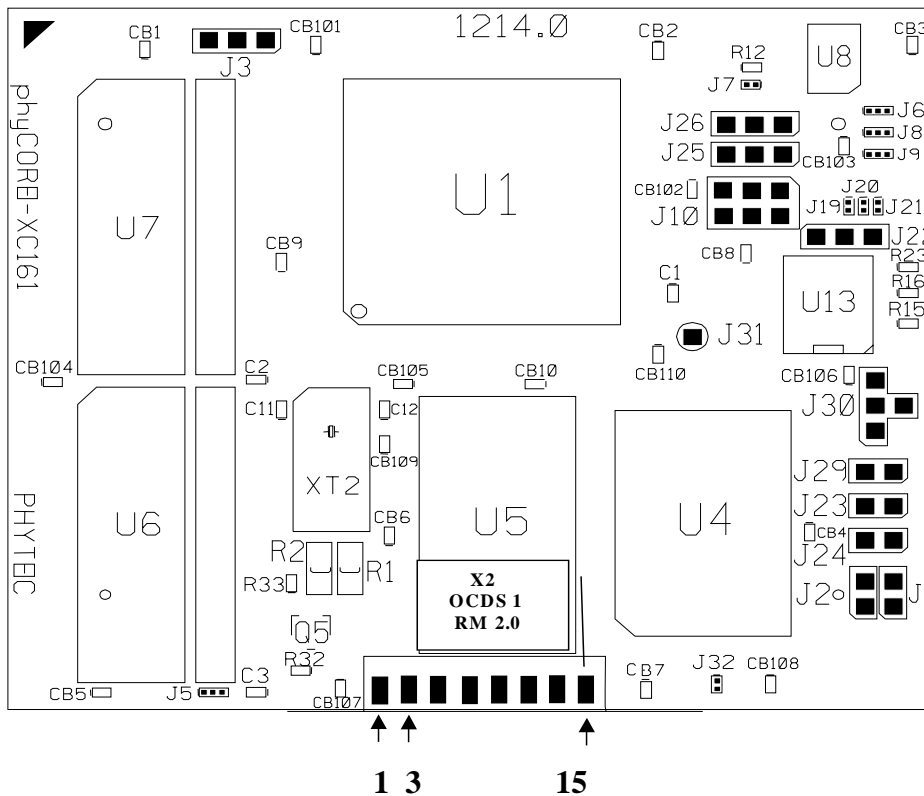


Figure 4: View of the phyCORE-XC161, Controller Side

Connecting the phyCORE-XC161 (PCB# 1214.0) to a Debugger Interface, such as the Keil ULink Device

If a 16-pin header connector (PHYTEC part number VL094) populates X2 on the phyCORE-XC161, debug connectivity requires two additional components:

- flat-band adapter cable, PHYTEC part number WF040
- male-to-male pin adapter, PHYTEC part number VA004, enabling mating of the ULink OCDS debug interface cable to the WF040 adapter cable

Please refer to the image below regarding proper interfacing of these components.

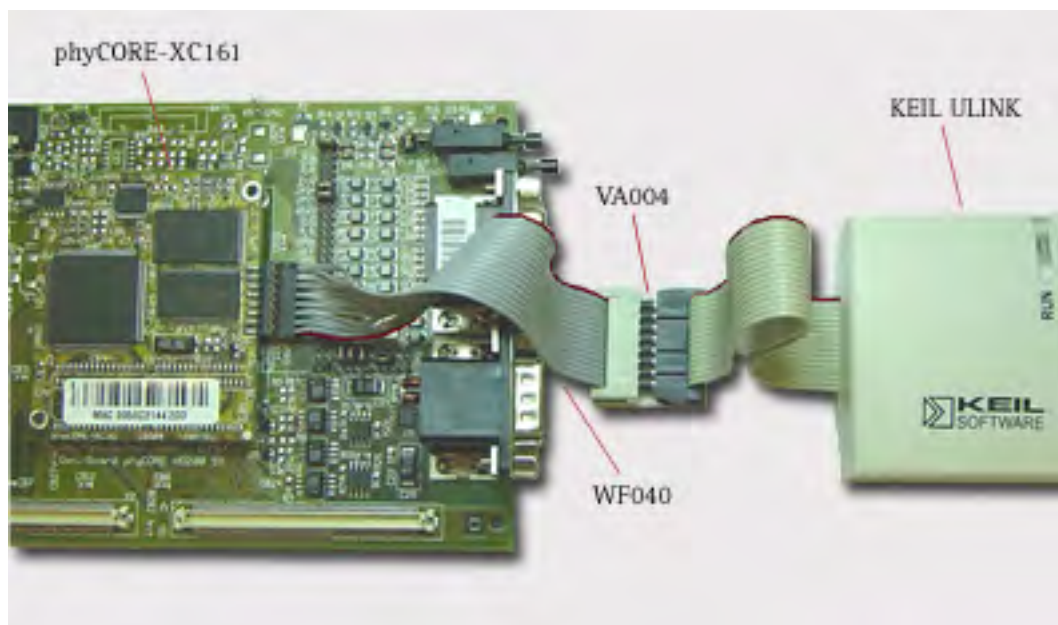


Figure 5: Connecting the phyCORE-XC161 to a Keil ULink Debug Interface (Only for PCB# 1214.0)