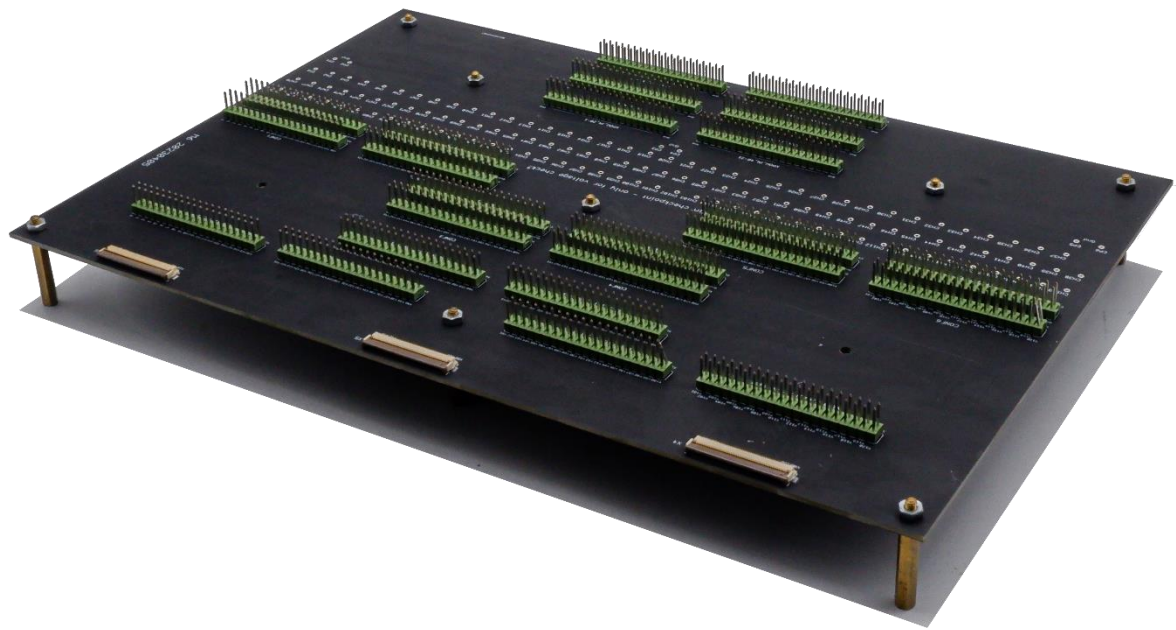




M6 Specification

February 2024





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Date: 19 February 2024

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Safety Note

Do not operate this product in any manner not specified by Nicslab. Failure to comply with these precautions or with specific warnings or instructions elsewhere in this manual violates safety standards of design, manufacture, and intended use of the instrument. Nicslab assumes no responsibility for any damage caused by mishandling that is beyond normal usage defined in this manual of this product.

Before Applying DC Power Supply

Verify that the DC power supply is good condition and safe to use. It is imperative to use ONE DC power supply as a source power for this product and the input voltage is no more than 36 V, or it can impair this product. Make all connections to the unit before applying power.

Do Not Discard the Instrument Cover

Only authorized personnel from Nicslab should remove the instrument cover.

Do Not Alter the Instrument

Do not put any unauthorized parts or modify the instrument without Nicslab approval and warranty.

Caution

This symbol indicates the hazard of any operating procedure, practice, or the like that, if not correctly performed or adhered to, could result in damage to the product or loss of important data.

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1. Multi-connectors Details

Multi-connector for XPOW is designed to have flexibility and reconfigurability of the main system. There are several versions of multi-connector. Please check your multi-connector version.

Hardware Configuration

For type 6 or M6 multi-connector, as shown in Fig. 1 and Fig. 2, callouts from A – R (detail described in Table 1) corresponds to all the configurations in order to be connected to the device under test (DUT). Points A, B, C, D are the connector to be connected to DUT. The reconfiguration pins are at points J, I, H, G, F, E (group 1) and P, O, N, M, K, and L (group 2). These two groups are separated and required to be connected using jumper wire acting as a reconfiguration arrangement. Point Q is the signal checkpoints and S is the ground. These pin checkpoints are used for checking the voltage output or connection using a multimeter. For channel outputs 1-40, the checkpoint is at point P (1 – 40). The R point is the pin for connection to the main XPOW box with a flat cable. Points A, B, C are directly connected with point D according to its label (for example Y1 on point B is connected to Y1 to point D).

M6

Dimension : 20 (L) x 30 (W) x 1.2 (H) cm

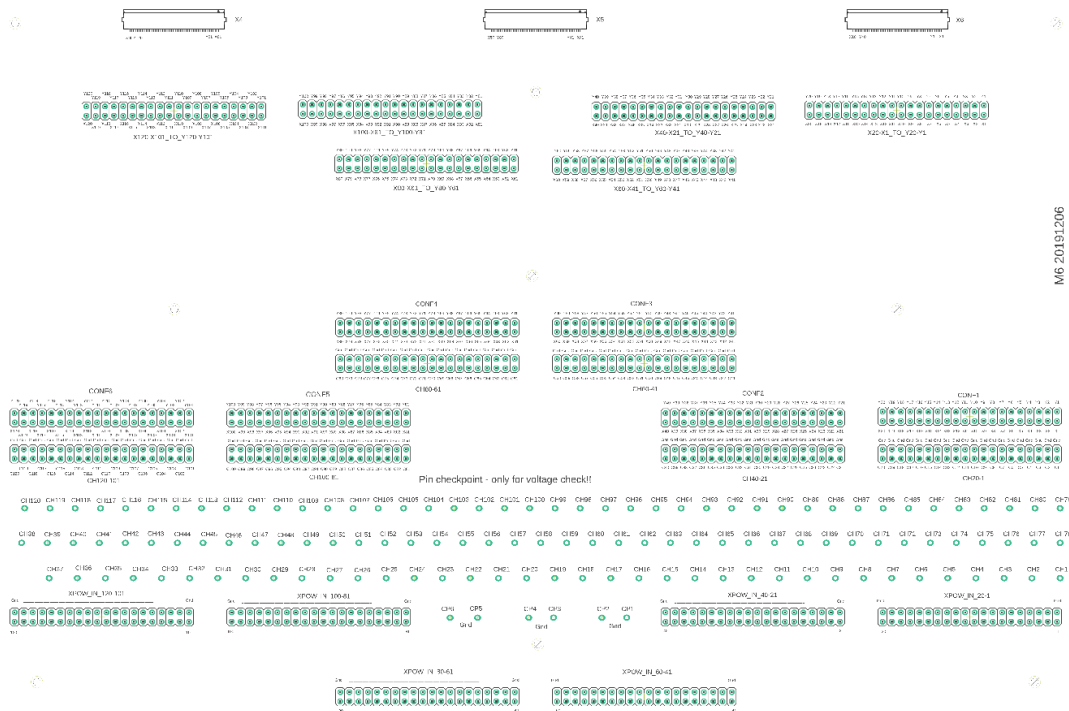


Figure 1. M6 – Multi-Connector configuration - 1

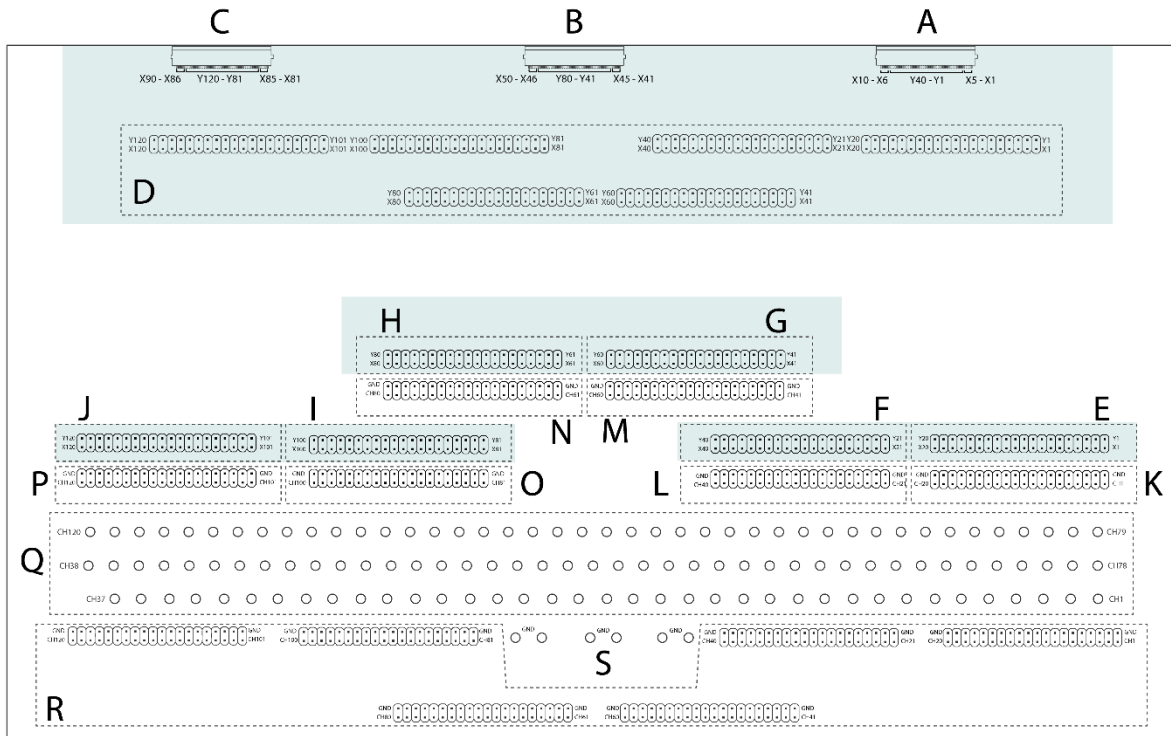


Figure 2. M6 – Multi-Connector configuration - 2

Below is an explanation of each point in the multi connector configuration from A to R:

Table 1. M6 - Multi-Connector point information

Callout	Component Description
A	FPC-1 50 pins (X10-X6, Y40-Y1, X5-X1)
B	FPC-2 50 pins (X50-X46, Y80-Y41, X45-X41)
C	FPC-3 50 pins (X90-X86, Y120-Y81, X85-X81)
D	2x20-1 pin male header 2.54 mm (X1-X120, Y1-Y120)
E	2x20-2 pin male header 2.54 mm (X1-X20, Y1-Y20)
F	2x20-3 pin male header 2.54 mm (X21-X40, Y21-Y40)
G	2x20-4 pin male header 2.54 mm (X41-X60, Y41-Y60)
H	2x20-5 pin male header 2.54 mm (X61-X80, Y61-Y80)
I	2x20-6 pin male header 2.54 mm (X81-X100, Y81-Y100)
J	2x20-7 pin male header 2.54 mm (X101-X120, Y101-Y120)
K	2x20-9 pin male header 2.54 mm (GNDs (top), C1-20 (bottom))
L	2x20-8 pin male header 2.54 mm (GNDs (top), C21-40 (bottom))

M	2x20-10 pin male header 2.54 mm (GNDs (top), C41-60 (bottom))
N	2x20-11 pin male header 2.54 mm (GNDs (top), C61-80 (bottom))
O	2x20-12 pin male header 2.54 mm (GNDs (top), C81-100 (bottom))
P	2x20-13 pin male header 2.54 mm (GNDs (top), C101-120 (bottom))
Q	Channel 1 – 120 output check point pin (1-120)
R	1–120 CH in male pin header 2.54 mm (1–120)
S	GND check point (6 pin)

Table 1 is the description of each point of the multi-connector PCB. The code X and Y with corresponds number or same number mean it is connected to each other. Callout A, B, and C sections are connected to D, also the same case for Callout E, F, G, H, I, J which are connected to D. For example: pin Y1 at point A (FPC-1 50 pin) is connected to Y1 at point D (2x20-1 pin header) and Y1 at point E (2x20-2 pin header). Another example, pin X3 at point D (2x20-1 pin header) is connected to X3 at point E (2x20-2 pin header).

Point R is the point of connectors that need to be connected to the main system. These points and cable configuration are preconfigured as factory default where GND and correspond channel outputs from the main system are connected to multi-connectors.

Point P, O, K and L are connectors that are directly connected/corresponded to point R where on the top line are GND and bottom line (C1 – C120) are channel outputs. In default factory configuration (with a cable attached to point J, I, F, E, P, O, K and L) X1 – X120 are grounded and Y1 – 120 are channels.

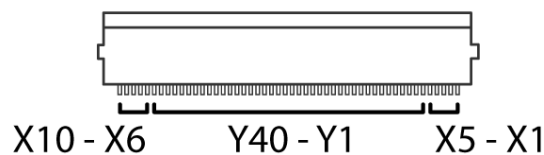
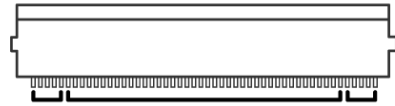
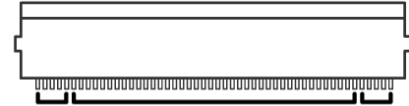


Figure 3. M6 – Multi-connector configuration at point A



X50 - X46 Y80 - Y41 X45 - X41

Figure 4. M6 – Multi-connector configuration at point B



X90 - X86 Y120 - Y81 X85 - X81

Figure 5. M6 – Multi-connector configuration at point C

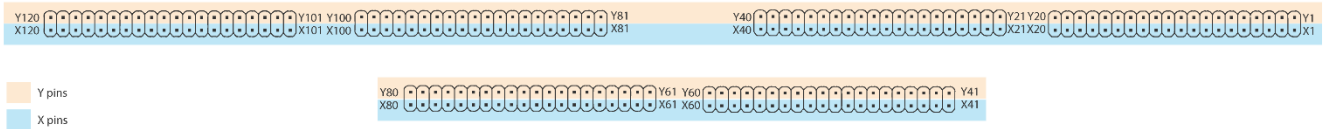


Figure 6. M6 – Multi-connector configuration at point D

Hardware Installation

Example on how to configure multi-connectors to test the device:

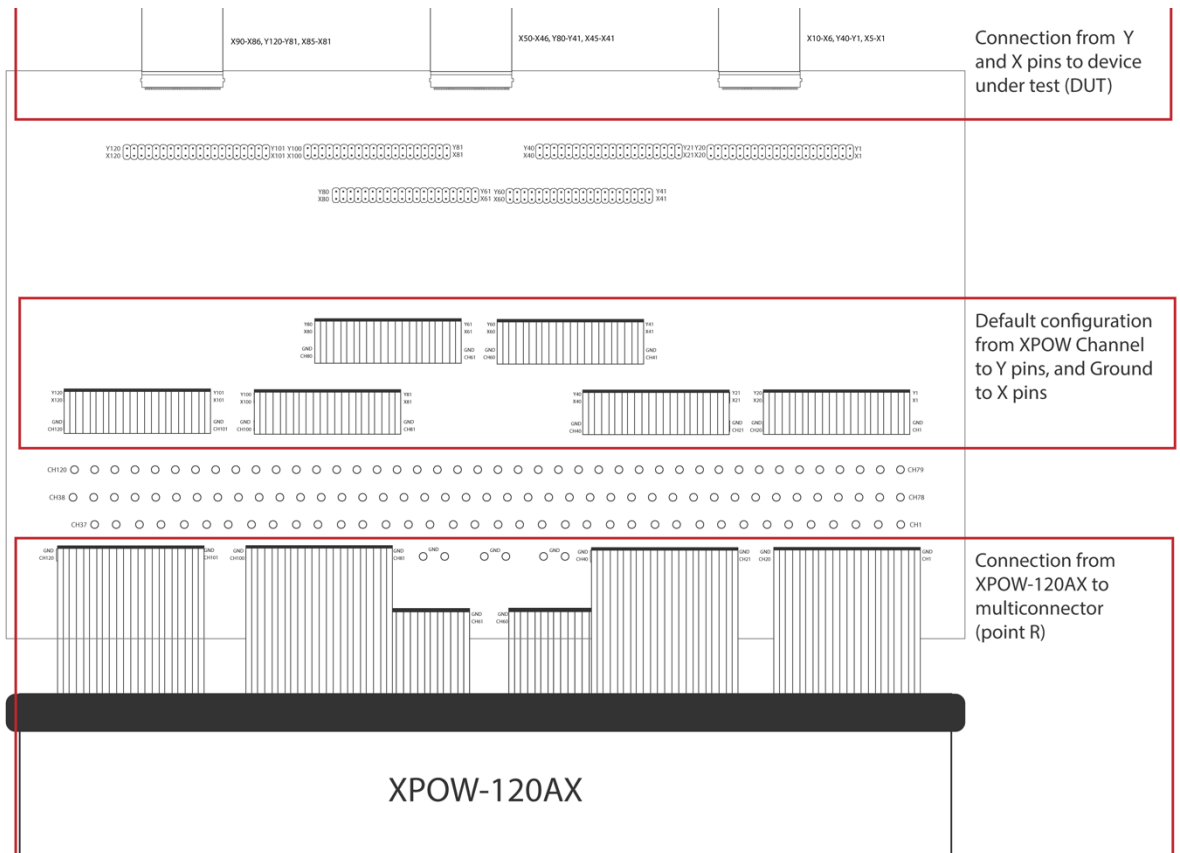
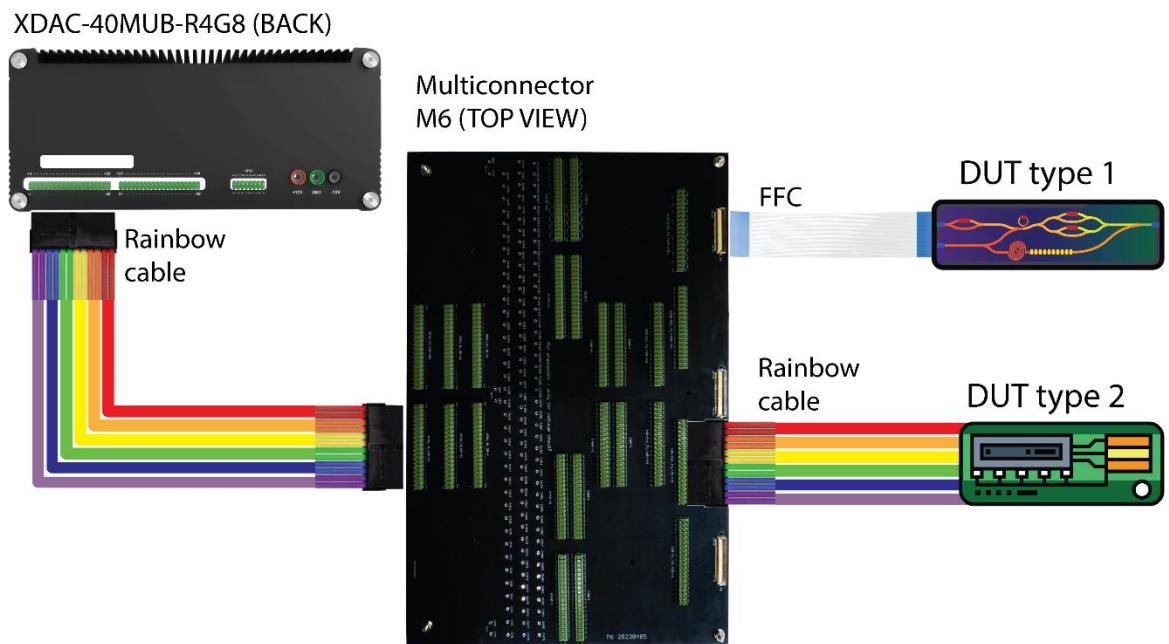


Figure 7. M6 – Multi-connector configuration example



DUT = Device under test

Figure 8. Multi-connectors testing configuration

Example 1

Suppose you have DUT with pin header 2.54 mm connectors with 8 channel input. With default factory configuration, channels 1 – 8 of DUT can be directly connected to point D. You may select output from X1 – X120 at point D for grounds and Y1 – Y120 at point D for signals (with default configuration).

Example 2

Suppose you have a chip with FFC/FPC-50 pin connector. You would like to select and configure point A (FPC-1 50 pin) for your DUT. In default configuration (jumper wire default), all Ys is the signals, and Xs are the ground. At point A, the default configuration is 40 channel signals (Ys), and 10 ground lines (Xs). To set X as another signal, you may set this by assigning the jumper signal (at points F, E, K, and L) to the corresponded output point.



2. Company Policy

Warranty – We guarantee to provide accurate descriptions and a high-quality product. Please do not hesitate to contact us at support@nicslab.com if you would like to have more information. If you have any problems with your order, please notify us within 60 days from the date of shipment of any defects. You agree to pay for the return shipping on exchanges and returns and we will reimburse this cost upon verification of a defect with the product. Moreover, a warranty will not apply if the product has been subject to misuse, neglect, accident, modification, or has been soldered or altered in any way.

Return and refund policy – If you are not happy with the product you purchased, for any reason, it is possible to return it for a refund within 5 days of receipt (10 days for an exchange).

Please advise us by email: support@nicslab.com for return authorization.

- Return for refund: within 5 days of receiving your product. (unopened)
- Return for replacement: within 10 days of receiving your product. (damaged or defective)

Please note that no return will be accepted without a return authorization. A return must be in its original and clean condition. Returns in a damaged, scratched or burnt condition will not be accepted. The product must be returned in its original packaging with its receipt and a small note for the reason for the return. This will help us to serve you better and improve our products. Reimbursement only applies upon the confirmation of the above-mentioned conditions.

All items will be reimbursed within 3 days of receiving the product (shipping fee excluded). You will need to pay for shipping (if you would like to have a refund instead of a replacement). We will be responsible for refund shipping fees if the return is a result of a shipping error from our side.

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Book a meeting [here](#).