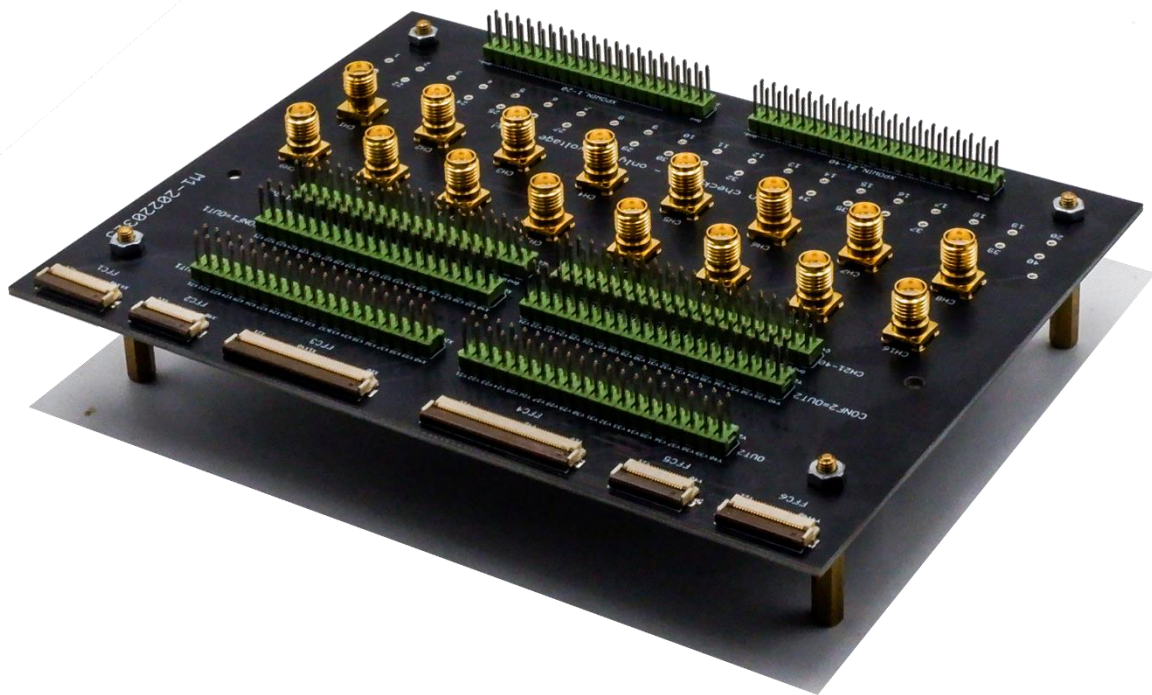




## M1 Specification

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February 2024







Version: 2.0

Date: 19 February 2024

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This product is designated for skilled user. You are entirely responsible for (1) choosing the appropriate Nicslab products for your operation, (2) designing, validating and testing your operation, (3) ensuring your operation meets applicable standards, and any other safety, security or other requirements.

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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/XDAC is designed to have flexibility and reconfigurability from the main system. There are several versions of multi-connector. Please check your multi-connector version.

## Hardware Configuration

For type 1 or M1 multi-connector, as shown in Fig. 1, 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 – H and M are the connector to be connected to DUT. The reconfiguration pins are at the point I – L. Point M is the SMA connectors for CH 1 – CH 16 outputs that are directly connected to the main system through point Q and R so they can be connected directly to DUT. Point N and O are the ground pin checkpoint where it can be used for checking the voltage output or connection using a multimeter. For channel outputs 1- 40, the checkpoint is at point P (1 – 40). See examples for more information on how to configure your DUT.

### M1

Dimension : 12 (L) x 16 (W) x 12 (H) cm

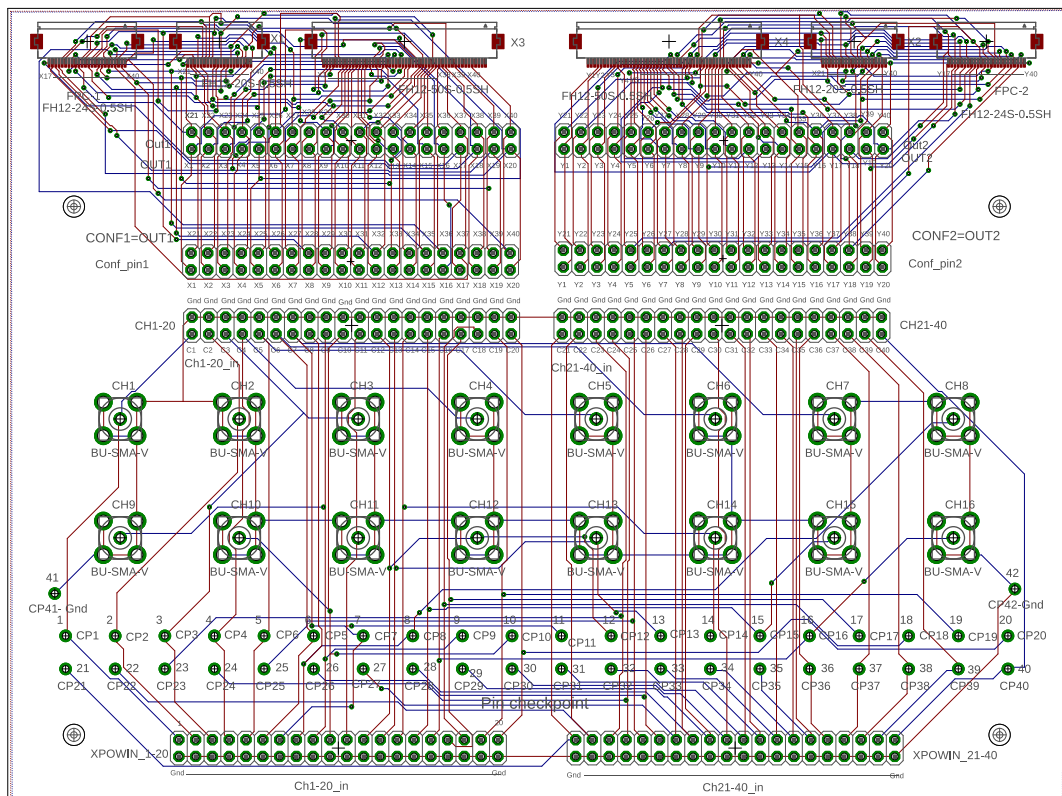


Figure 1. M1 – Multi-Connector configuration - 1

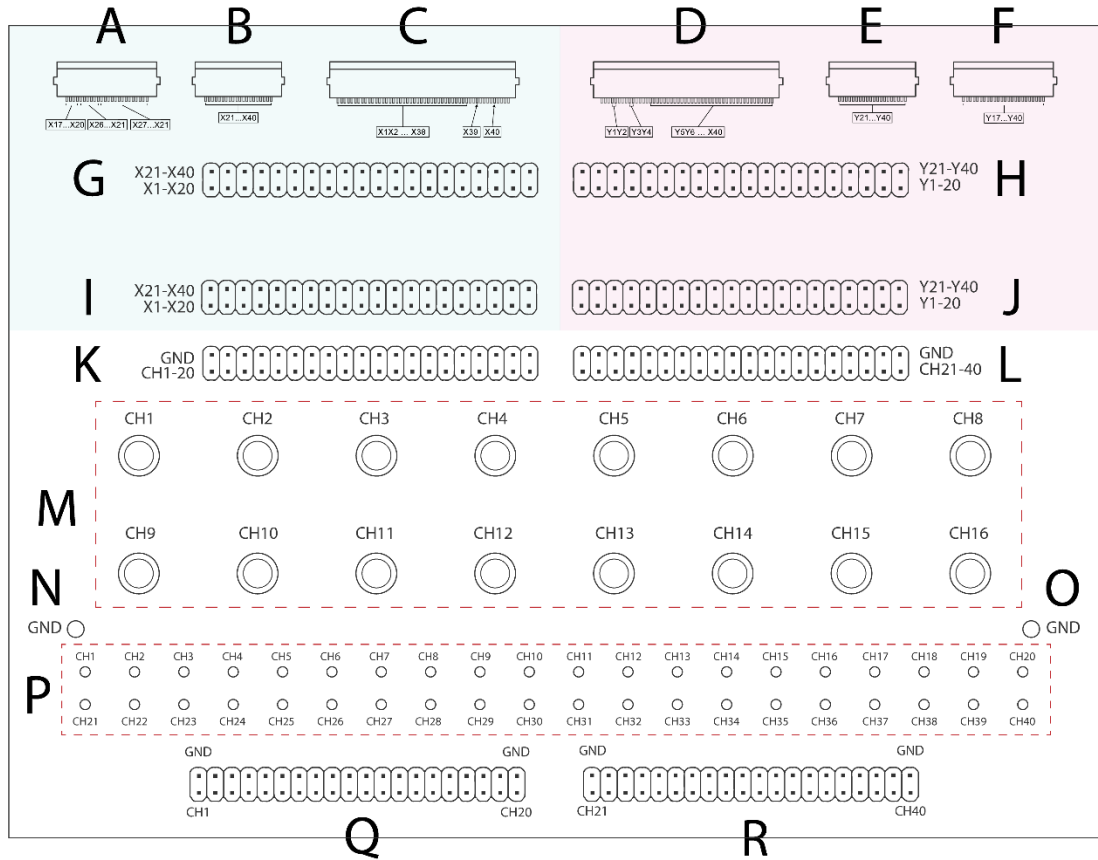


Figure 2. M1 – Multi-Connector configuration - 2

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

Table 1. M1 - Multi-Connector point information

Callout	Component Description
A	FPC-1 24 pin (X17–X20, X26–X21, X27–X40)
B	FPC-2 20 pin (X21–X40)
C	FPC-3 50 pin (X1–X38, X39, X40)
D	FPC-4 50 pin (Y1, Y2, Y3, Y4, Y5–Y40)
E	FPC-5 20 pin (Y21–Y40)
F	FPC-6 24 pin (Y17–Y40)
G	2x20-1 pin header 2.54 mm (X1–X40)
H	2x20-2 pin header 2.54 mm (Y1–Y40)
I	2x20-3 pin header 2.54 mm (X1–X40)
J	2x20-4 pin header 2.54 mm (Y1–Y40)
K	2x20-5 pin header 2.54 mm ((C1–C20) + GND)
L	2x20-6 pin header 2.54 mm ((C21–C40) + GND)

M	SMA connectors (CH1–CH16)
N	GND check point 1 pin (41)
O	GND check point 2 pin (42)
P	Channel 1 – 40 output check point pin (1-40)
Q	1-20 CH in 2x20-7 pin header 2.54 mm (1–20)
R	21–40 CH in pin header 2.54 mm (21–40)

Table 1 is the description of each point of the multi-connector PCB. The code X and Y with corresponding numbers or the same number means they connected to each other. Callout A, B, C, G, and I in the Green section are connected to each other, also the same case for Callout D, E, F, H, and J (Red section). For example, pin X1 at point C (FPC-3 50 pin) is connected to X1 at point G (2x20-1 pin header) and X1 point I (2x20-3 pin header). Another example, pin Y3 at point D (FPC-4 50 pin) is connected to Y3 at point H (2x20-2 pin header) and point J (2x20-4 pin header).

Point Q and R are 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 K and L are connectors that directly correspond to point Q and R where on the top line are GND and bottom line (C1 – C40) are channel outputs. In default factory configuration (with a cable attached to point I, J, K, and L) X1 – X20 and Y1 – Y20 are grounds and X21 – 40 are channel 1 – 20 outputs with Y21 – Y40 are channel 21-40.

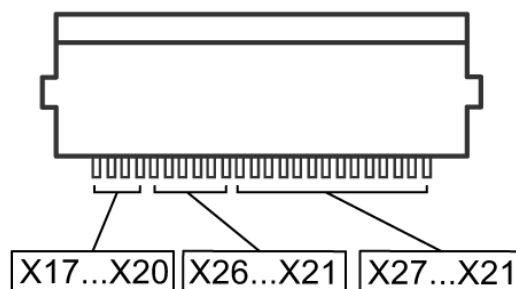


Figure 3. M1 - Point A connector in details



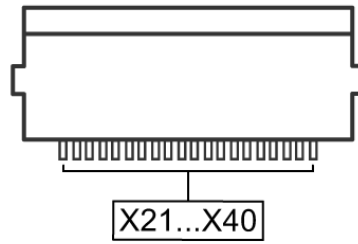


Figure 4. M1 - Point B connector in details

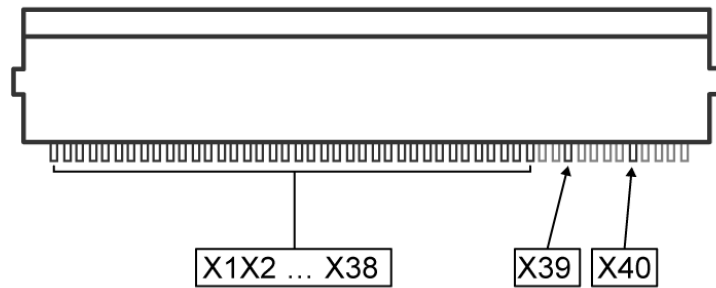


Figure 5. M1 - Point C connector in details

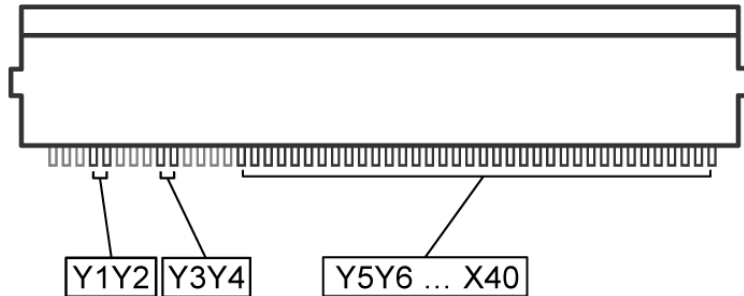


Figure 6. M1 - Point D connector in details

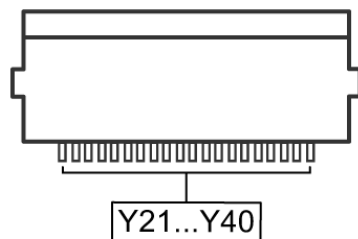


Figure 7. M1 - Point E connector in details

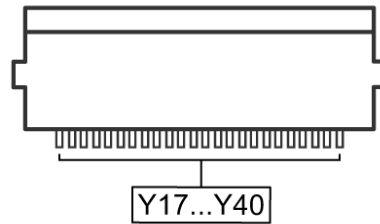


Figure 8. M1 - Point F connector in detail

## Hardware Installation

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

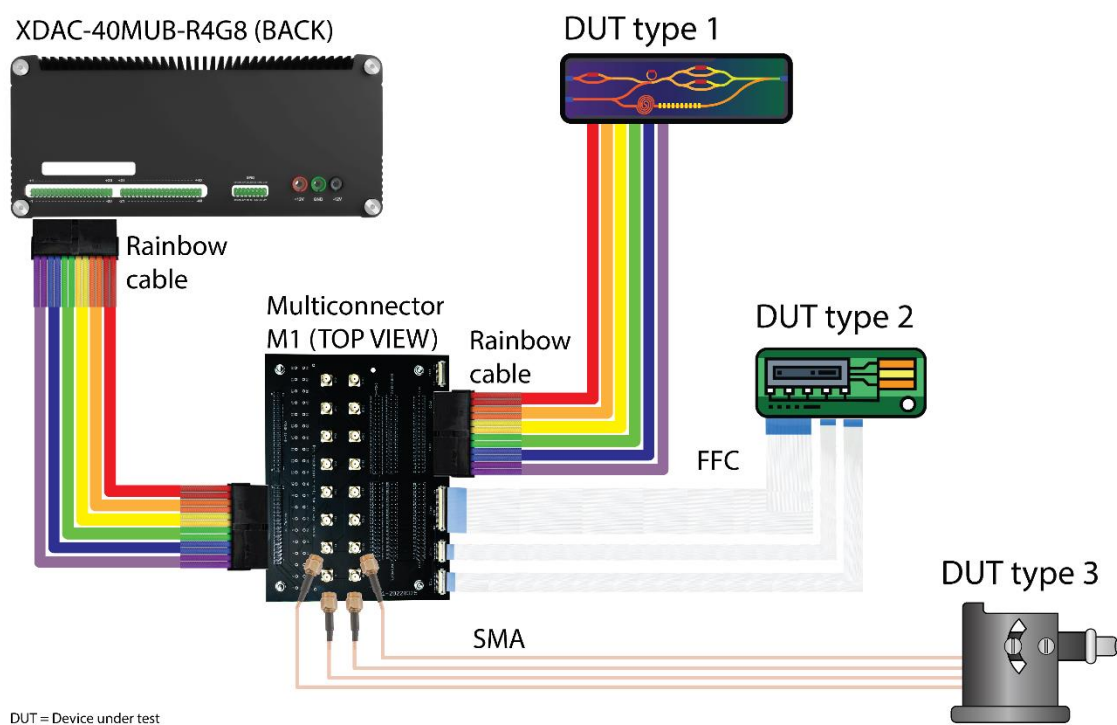


Figure 9. Multi-connectors testing configuration

### Example 1

Suppose you have a device/chip that needs to be tested. The device has three inputs (sma1, sma2, sma3) to be connected with an SMA connector. Because SMA connectors at the multi-connector board are connected directly to point Q and R which are directly connected to the main system, it can be directly connected to the SMA connector at the multi-connector board (choose CH1 – CH16) that is available. With this configuration, the channel on GUI to control can be selected from CH1 – CH16 depend on the selection.

### Example 2

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 G or H. You can select output from X21 – 40 at point G or Y21 – Y40 at point H. The GNDs are available at X1 – 20 and Y1 – 40.

### Example 3

Suppose you have a chip with an FPC-20 pin connector. You want to select and configure point B (FPC-2 20 pin) for your DUT. You plan to dedicate X21, X23, X25, X27, X29, X31 as GND, and X22, X24, X26, X28, X30, X32 as channel input. To configure this scheme, you need to connect X21, X23, X25, X27, X29, X31 at the point I to GND at point K with jumper cable respectively. For the channel outputs, you need to connect C1 – C6 at point K to X22, X24, X26, X28, X30, X32 with jumper cable respectively. From GUI, you will control X22 voltage to your DUT using CH1, X24 voltage to your DUT using CH2, and so on.

## 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](mailto: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](mailto: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.



### 3. Contact

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