



U 920A

PDM Signal Conditioner

User Manual

V1.6_20250422_EN

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The information presented herein reflects the current or intended specifications as of the date of publication. As we continuously improve our products and add new features, the contents of this publication are subject to change without prior notice.

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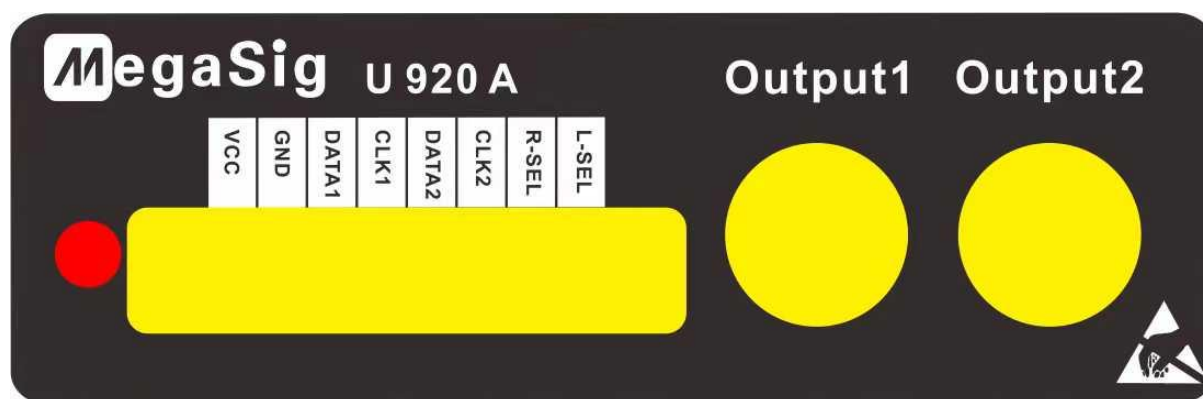
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Product Parameters

Product Parameters	
PDM Channels	2
Input Interface	EDGRM-3.81-8P
Output Interface	BNC
Input-output conversion	1%FS=5mVrms, 10%FS=50mVrms, 20%FS=100mVrms, 50%FS=250mVrms, 100%FS=500mVrms
Supported Microphone Power Supply (DC)	1.2V, 1.5V, 1.8V, 3.3V
Supported Microphone Clock (Hz)	768K, 800K, 812.5K, 1.2M, 1.536M, 2.4M, 3.072M, 3.25M
Product Dimensions (mm)	140*96*33
Interface Type	BNC
Net Weight(kg)	0.35
Package Dimensions(mm)	250*165*65
Package Weight(kg)	0.52
Operating Temperature	-20°C~50°C
Operating Voltage	DC 5V(USB-B)
Typical Power	1W
Full Load Power	3W
Communication Method	Serial Communication(USB-B)

Interface Functions

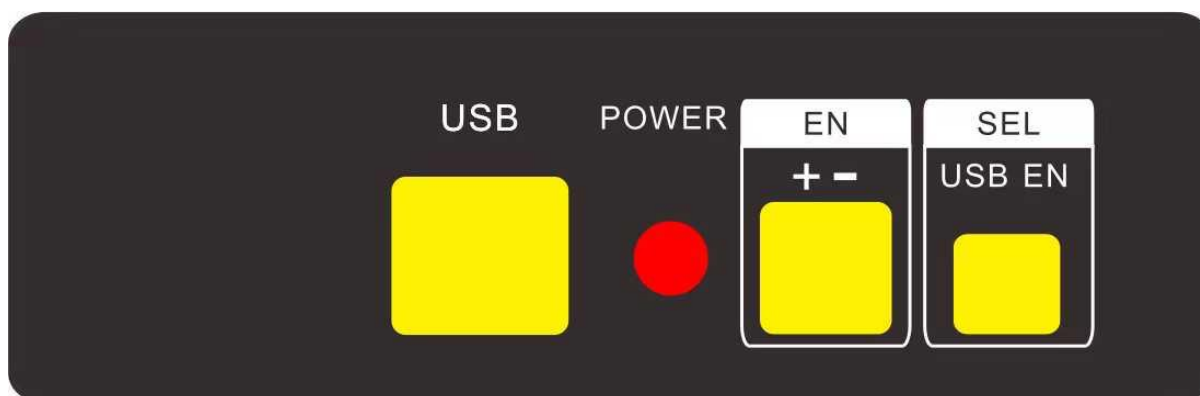
Front Panel Interface Functions



Front Panel Interface Function Description

Name	Pin Type	Function
VCC	POWER	Microphone Power Supply Interface
GND	POWER	Power Ground
DATA1	I	PDM Channel 1 Data Interface
CLK1	O	PDM Channel 1 Clock Interface (Clock by U 920A)
DATA2	I	PDM Channel 2 Data Interface
CLK2	O	PDM Channel 2 Clock Interface (Clock by U 920A)
R-SEL	O	High Level to PDM Microphone L/R Interface
L-SEL	O	Low Level to PDM Microphone L/R Interface
OUTPUT1	AO	Analog Output Channel 1
OUTPUT2	AO	Analog Output Channel 2

Rear Panel Interface Functions



Rear Panel Interface Function Description

Name	Pin Type	Function
USB	POWER/IO	USB 5V Power and Serial Communication Interface
PWRLED	LED	Power Indicator (Blue LED), steady on indicates normal power supply
EN	EN	Power Enable Interface
SEL	SEL	Select Whether to Enable the Power Interface

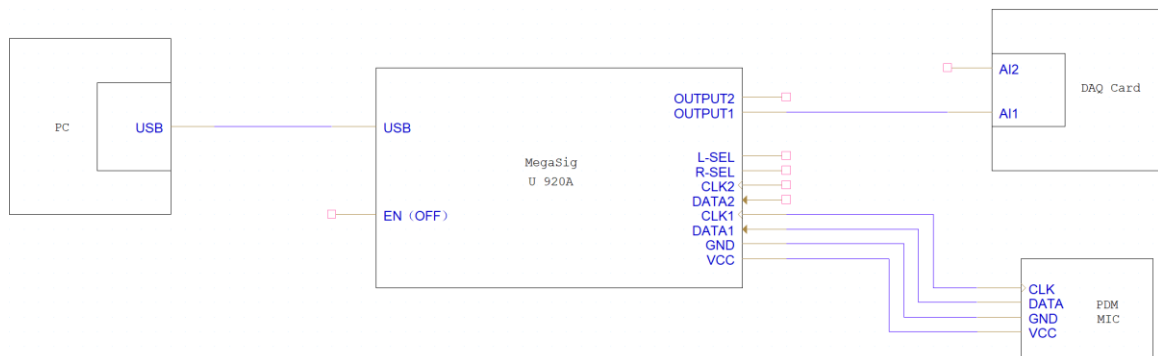
Precautions and Instructions for Use

Precautions

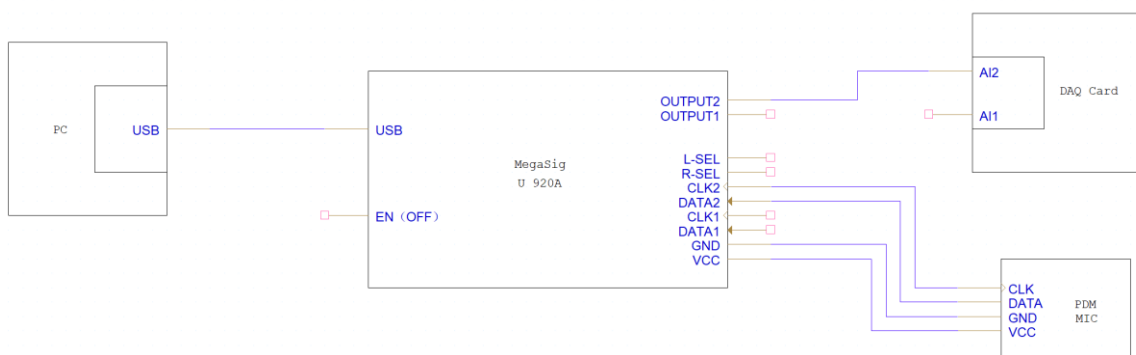
- The **VCC interface** is a power output interface, primarily used to supply power to the microphone. This interface does not have reverse voltage protection and must not be connected to an external power source.
- **CLK1** and **CLK2** clocks cannot be shared, as independent decoding chips are used internally.
- The **synchronization function** uses Channel 1 of the demodulator. Be sure not to connect it to Channel 2, otherwise no signal will be received.
- **R-SEL** provides a high level and **L-SEL** provides a low level, making it convenient to distinguish between left and right microphones.
- Be careful not to reverse the polarity when connecting the **EN (enable) interface**.
- When selecting a mode via the **SEL interface**, please ensure the device is powered off before making changes.

Wiring Instructions

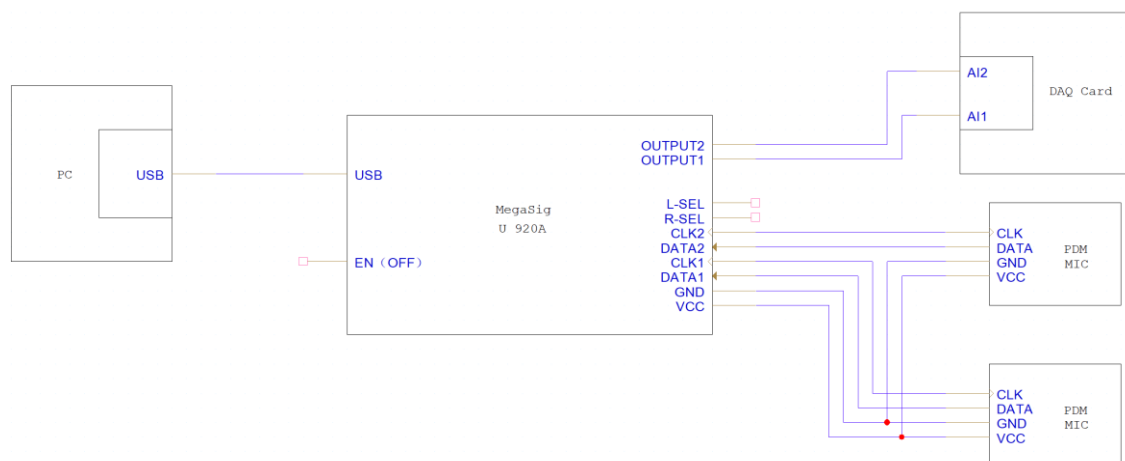
● Single-Channel Wiring Diagram



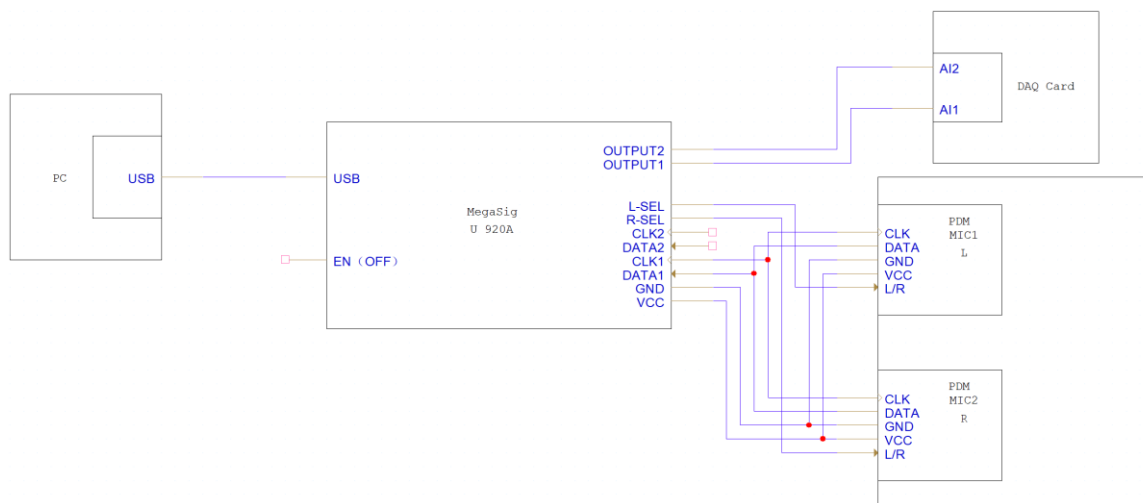
Or



● Asynchronous Dual-Channel Wiring Diagram



- Synchronous Dual-Channel Wiring Diagram



In synchronous dual-channel mode, if one of the microphones (L/R) is damaged, both OUTPUTs will output the signal from the undamaged microphone, meaning they will output the same signal.

- EN Function

If the EN function is enabled, a voltage of +3.3V to +5V must be applied to the EN interface for the U 920A to begin the decoding process. Otherwise, the U 920A will not perform any decoding operation.

Serial Command Table

Serial Communication Parameters:

- Baud Rate: 115200
- Data Bits: 8
- Parity: None
- Stop Bits: 1.0
- Flow Control: None

Function	Sent	Response	Command Description
Switch to 768kHz	>SET_CLK=0	SET_CLK= 768KHz	Switch to 768kHz. Successful, the response will be: SET_CLK=768KHz.
Switch to 800kHz	>SET_CLK=1	SET_CLK= 800KHz	Switch to 800kHz. Successful, the response will be: SET_CLK=800KHz.
Switch to 812.5kHz	>SET_CLK=2	SET_CLK= 812.5KHz	Switch to 812.5kHz. Successful, the response will be: SET_CLK=812.5KHz.
Switch to 1.2MHz	>SET_CLK=3	SET_CLK= 1.2MHz	Switch to 1.2MHz. Successful, the response will be: SET_CLK=1.2MHz.
Switch to 1.536MHz	>SET_CLK=4	SET_CLK= 1.536MHz	Switch to 1.536MHz. Successful, the response will be: SET_CLK=1.536MHz.
Switch to 2.4MHz	>SET_CLK=5	SET_CLK= 2.4MHz	Switch to 2.4MHz. Successful, the response will be: SET_CLK=2.4MHz.
Switch to 3.072MHz	>SET_CLK=6	SET_CLK= 3.072MHz	Switch to 3.072MHz. Successful, the response will be: SET_CLK=3.072MHz.
Switch to 3.25MHz	>SET_CLK=7	SET_CLK= 3.25MHz	Switch to 3.25MHz. Successful, the response will be: SET_CLK=3.25MHz.
Switch to 1.2V	>SET_VOLTAGE =0	Set Voltage 1.2V	Switch to 1.2V. Successful, the response will be: Set Voltage 1.2V.
Switch to 1.5V	>SET_VOLTAGE =1	Set Voltage 1.5V	Switch to 1.5V. Successful, the response will be: Set Voltage 1.5V.
Switch to 1.8V	>SET_VOLTAGE =2	Set Voltage 1.8V	Switch to 1.8V. Successful, the response will be: Set Voltage 1.8V.
Switch to 3.3V	>SET_VOLTAGE =3	Set Voltage 3.3V	Switch to 3.3V. Successful, the response will be: Set Voltage 3.3V.
Synchronous	>SET_STATE=0	SET_STATE= Synchronous	Synchronous. Successful, the response will be: SET_STATE=Synchronous.

Function	Sent	Response	Command Description
Asynchronous	>SET_STATE=1	SET_STATE= Asynchronous	Asynchronous. Successful, the response will be:SET_STATE=Asynchronous.
Query Current CLK Frequency	>GET_CLK	CLK = xxx	xxx represents the returned current frequency. For example, if 2.4MHz is set, the response will be: CLK=2.4MHz.