OVERVIEW

MWOCP68-CONC (Murata P/N 4407028) is a connector interface card that provides a convenient way to connect, configure and evaluate a single MWOCP68-3600-D-RM series 3600W front end power supply module. Convenient load connection studs are provided for both outputs, and signals are broken out into simple headers. Signal pullups and on-board 3V3 supply add further convenience. The provision for a PMBus™ header compatible with Murata's MW-PMBob I²C USB adapter (available separately) make this interface connector card very flexible, covering many applications.

This Connector Interface Card can also be used for continuous operation as an interposer or backplane within a host/system.

This application note includes the basic operation and layout detail and should be viewed together with the product datasheet and other related referenced documents where additional information can be found.

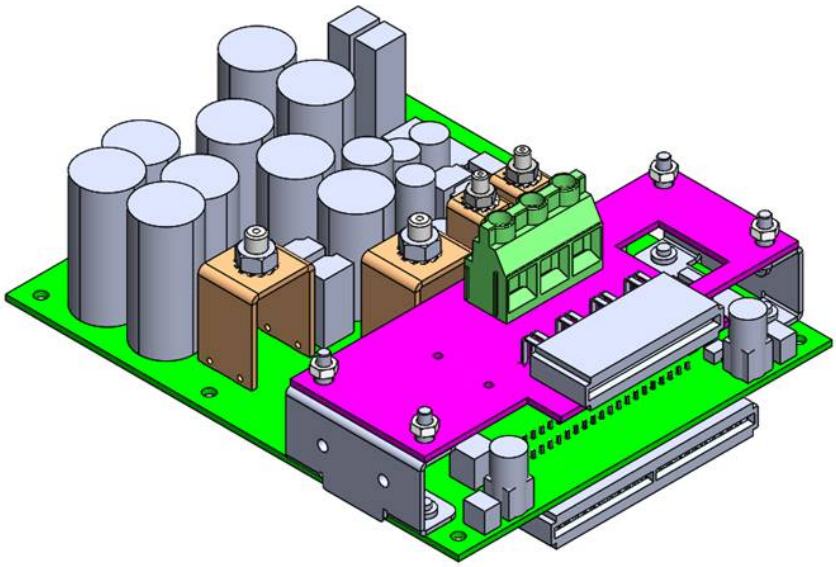
COMPATIBLE POWER SUPPLY MODULES

Model Number	Output power @ highline (180-300Vac & HVDC 192-400Vdc)	Main Output (Nominal)	Standby Output (Nominal)	Airflow Direction
MWOCP68-3600-D-RM	3600W	54.5Vdc	12.0Vdc	Front ⟶ Back

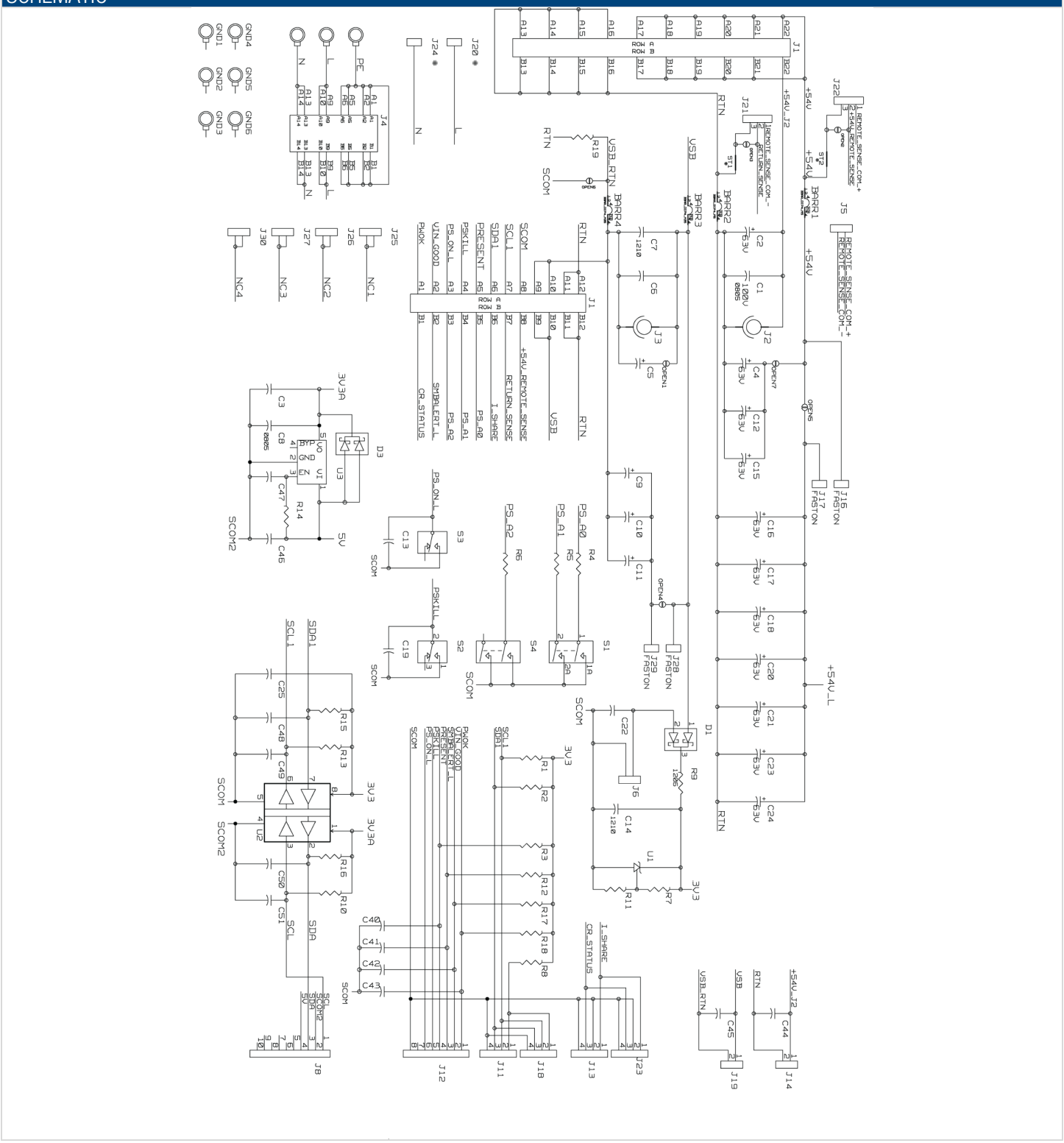
INTRODUCTORY SAFETY PRECAUTION

This Connector Interface Card is a component intended to be installed within a safety enclosure in accordance with all country and local safety requirements by an authorized, qualified person before operating this equipment. It is incumbent Upon the end-user to provide all necessary safeguards to protect against exposure to the hazardous AC mains voltage (192-305Vac or 192-400Vdc) that is present when connected and powered by an input source. Refer to additional safety notes as well as the power module datasheet for additional information.

PRODUCT MODEL ILLUSTRATION



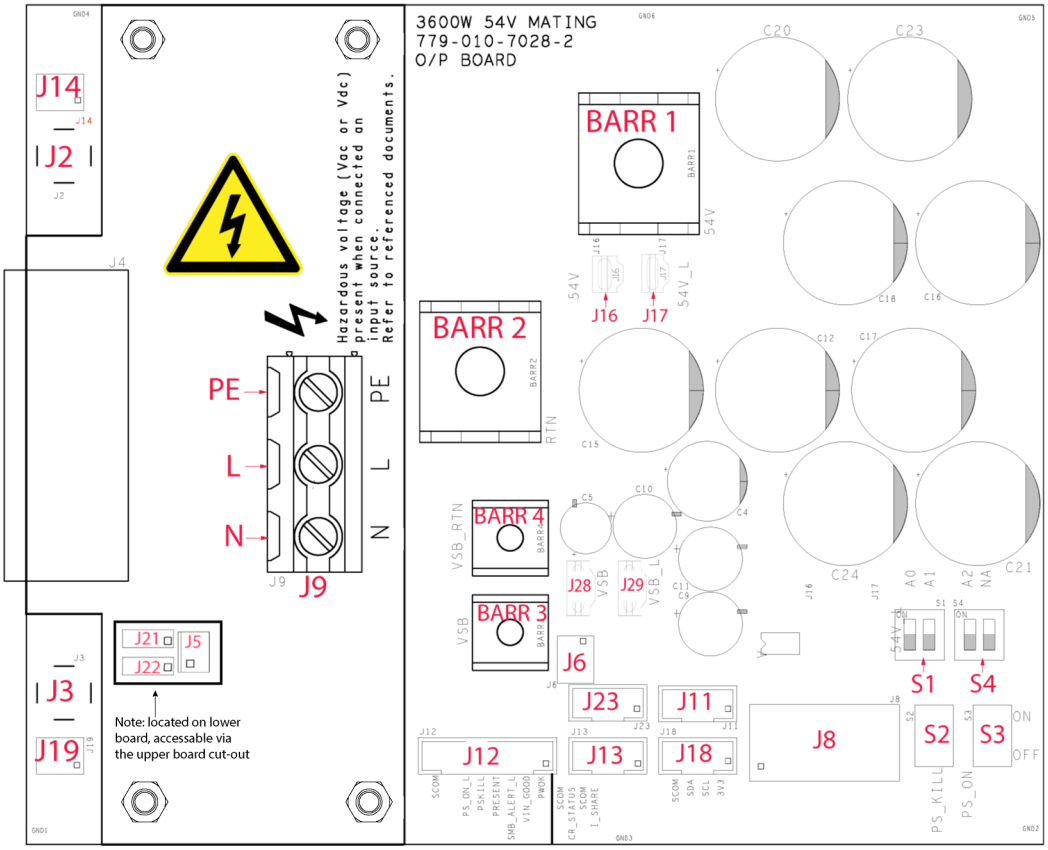
SCHEMATIC



FEATURE LOCATION LAYOUT

Top-View

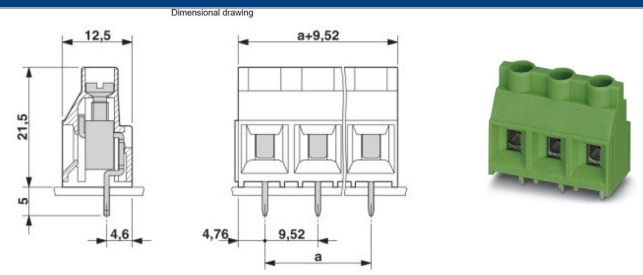
The illustration below is intended as a feature location guideline in conjunction with the descriptions found on the next pages and may not contain all fine details or be to scale. Refer to the mechanical section for additional details.



INPUT SOURCE Connections:

A three position Phoenix Contact terminal block, P/N 1714984, is provided for the Mains AC/HVDC input source connections (J9).

N: Mains Vac Neutral connection (HVDC Negative)
L: Mains Vac Line connection (HVDC Positive)
PE: PE (Protective Earth) connection



The terminal block is intended to connect the incoming AC source that ranges from 180VAC to 305VAC (phase to line voltage) or 192 to 400VDC. As such these voltage levels are considered hazardous and safety precautions must be observed. Each cable should be rated to withstand at least 600VAC and 10AWG (5.26mm^2) Consult appropriate region of deployment local electrical codes and safety regulations.

IT IS THE RESPONSIBILITY OF THE END USER OF THE MWOCP68-CONC (AND THE ASSOCIATED MWOCP68-3600-D-RM POWER SUPPLY MODULES) TO OBSERVE LOCAL AND NATIONAL SAFETY PRACTICES WHEN DEPLOYING THESE PRODUCTS

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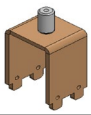
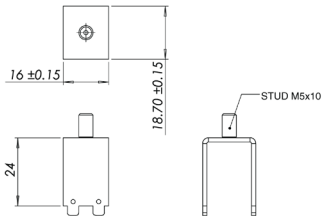
OUPUT DC LOAD CONNECTIONS:

Main 54.5Vdc Output Load Connections

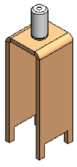
M5x10 studs with nuts are provided for load connection
BARR 1: 54.5Vdc MAIN_OUTPUT load connection
BARR 2: 54.5Vdc MAIN_RETURN load connection

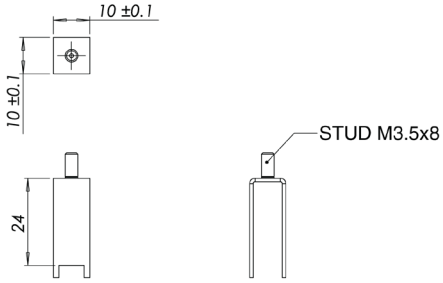




12VSB Output Load Connections

M3.5x8 Studs with nuts are provided for load connection
BARR 3: VSB output load connection.
BARR 4: VSB_RETURN load connection





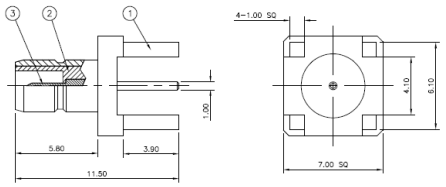
SIGNAL CONNECTION AND CONFIGURATION

Output Capacitance

J16, J17 (Main 54.5Vdc output) and **J28, J29** (VSB output) are 0.25" (6.35mm) standard quick connect male tabs that can be connected together (i.e. relay, switch, Jumper, etc.) to apply the maximum output capacitance across the corresponding output, or left open to disconnect the output capacitance, for "Maximum Capacitance" evaluation purposes

Ripple/Noise measurement point

J2, J3 are 50 OHM PTH Coax jacks, TE Connectivity P/N 1-1337482-0 and provide a measurement point suitable for Ripple/Noise. Main output (J2), VSB output (J3) are intended to be directly connected (or via a 10X probe if required) to an oscilloscope. This measurement node is filtered with a parallel connected 100µF conductive polymer, 0.1uF and 10uF ceramic capacicitors (across tip to ground). For accurate measurement, a short 50ohm coaxial cable connnection should be provided between the relevant measurement connector and the input to the measuring 'scope (the 'scope bandwidth shall be limited to 20MHz)



Output Remote Sense Configuration Jumpers

J21, J22 are 3-position shunt (jumper) headers are provided to configure the power supply module's remote sense signals for either local or remote (off-board) sense.
J22 configures the +54V remote sense signal and **J21** configures the +54V remote sense return signal.

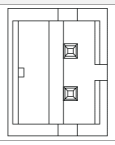
For local sense (Default setting, located near power supply module mating connector), place shunt across pins 2-3
For remote sense point place shunt across pins 1-2 and refer to the next item "**J5**",below
Note: these headers along with J5, are located on the lower main board, accessible via a cut out of the upper board.

Harwin P/N M7582-05 or similar (1 x 2) Position Shunt Jumper/Connector, 0.100" (2.54mm) Gold)

External (off-board) Remote Sense header

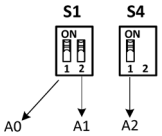
J5 provides the connection points for the remote sense wire leads (not provided) for applications requiring remote sense (at a location external to the interface connector card)

Note: ensure J21/22 jumpers are fitted across pins 1-2 for this configuration.

Pin#	Function	J5 (board header)	Mating Connector (Wired end)
1	+54.5V Return Sense	 Molex 89400-0220	Mating Contacts: Molex 502128100
2	+54V remote sense		Housing: Molex 510650200

PMBus™ Address Set Switches

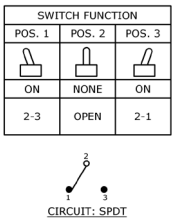
S1, S4 are provided to select the addressing of the slave devices operating on the PMBus™. Refer to ACAN-114 for more details. Set in the "ON" position applies a logic "low" to the corresponding address line A0, A1, or A2



(Continued) SIGNAL AND CONFIGURATION DETAILS

PSKILL Signal

S2 is a SPDT toggle switch that opperates the PSKILL function. Must be set to "ON" to enable the main output. Set to off disables the main output. PSKILL is used for internal power supply module power processing during hotswap to ensure glitch free operation

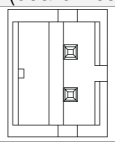


PS_ON_L Signal

S3 is a SPDT toggle switch that opperates the PS_ON_L feature. Setting to "ON" position enables the main output; setting to "Off" to disable the main output

Output Voltage Measurement Point

J14 (Main 54.5V output) and **J19** (VSB) are 2-posiiton, 2mm headers that provide a measurement point for the output voltage

Pin #	Function J14 / J19	J14 / J19 (board header)	Mating Connector (Wired end)
1	+54.5V / VSB	 Molex 89400-0220	Mating Contacts: Molex 502128100
2	RTN / VSB_RTN		Housing: Molex 510650200

I-SHARE and CR_STATUS buses

J23 and J13 are parallel connected 4 position 2mm headers and provide access to the I-SHARE and CR_STATUS buses

Pin#	Function	J13 & J23 (Parallel, board headers)	Mating Connector (cable assembly[1])
1	I_SHARE	 JST P/N B4B-PH-KS(LF)(SN)	Mating Contacts: JST SPH-002T-P0.5L
2	SCOM		
3	CR_STATUS		Housing: JST PHR- 4
4	SCOM		

I-SHARE and CR_STATUS buses

J18 and J11 are parallel connected 4 position 2mm headers and provide access to the I2C signals clock and data lines "SDA1" and "SCL1" as denoted in the schematic

Pin#	Function	J13 & J23 (Parallel, board header)	Mating Connector (cable assembly[1])
1	+3V3	 JST P/N B4B-PH-KS(LF)(SN)	Mating Contacts: JST SPH-002T-P0.5L
2	SCL1		
3	SDA1		Housing: JST PHR- 4
4	SCOM		

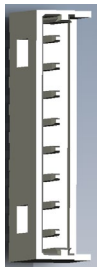
(Continued)

SIGNAL AND CONFIGURATION DETAILS

Misc. Hardware Signals

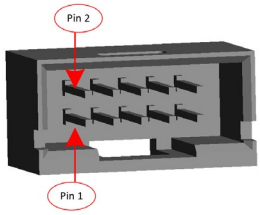
J12 is an 8-pos 2mm header that breaks out various signals (see table to the right)

Refer to datasheet for signal details

Pin #	Function	Board header	Mating Connector (cable assembly[1])
1	PWOK	 Molex 89400-0820	Mating Contacts: Molex 502128100
2	VIN_GOOD		
3	SMBALERT_L		Housing: Molex 510650800
4	PRESENT		
5	PSKILL		
6	PS_ON_L		
7	-		
8	SCOM		

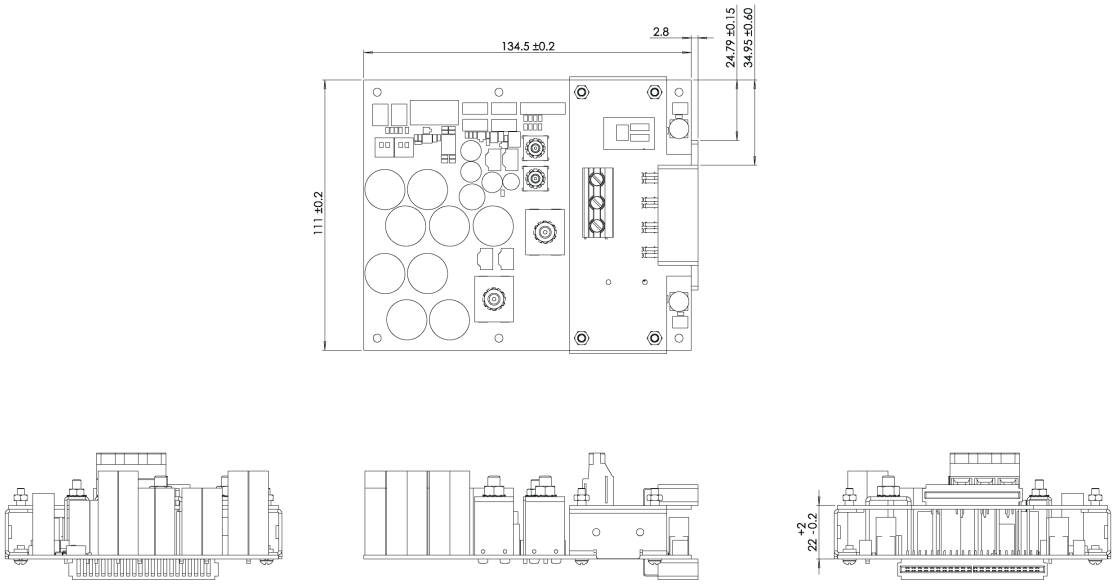
PMBus™ I²C to USB interface

J8 is provided to connect the Murata MW-PMBob[1] and is a 2.54MM 10PIN header

Pin#	Function	board header
1	SCL	 Molex 5-102619-3
2	SCOM2	
3	SDA	
4	5V	
5	-	
6	-	
7	-	
8	-	

[1]Not provided

MECHANICAL OUTLINE



1. This drawing is a graphical representation of the product and may not show all fine details. Please contact Murata for 3D model for details
2. Dimensions in mm
3. Product under development, subject to change. Contact factory for latest version.

OPTIONAL ACCESSORIES

Description	Part Number
PMBob™ USB to I²C interface (Check with Murata for availability) Link Back to front page	MS-PMBob

REFERENCED DOCUMENT LINKS

Document Number	Description	Link to Document
MWOCP68-3600-D-RM	Product Datasheet	Contact Murata
MW-PMBob	PMBob I²C to USB adapter Datasheet	Contact Murata
ACAN-114	PMBus Protocol Application Note	Contact Murata

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