

Technical Specifications

DESCRIPTION

The OEM (MOME) board allows System Integrators to implement the communication with a Smart Meter via Band A Power Line (PLC). MOME board can be interfaced with all the Smart Meters manufactured and remotely managed by e-distribuzione, connected to Low Voltage network. Applications developed by System Integrators can use communication services, offered by OEM module, by connecting to the UART port available on the J6 connector, and by implementing the client side part of the application protocol (defined in another specific document).

OPERATING CONDITIONS

Parameter	Description	MIN	TYP	MAX	Unit
T stg	Storage Temperature	-25		85	°C
T env	Environmental Temperature	-25		70	°C
H env	Relative Humidity (non-condensing)	5		95	%RH

DIMENSIONS AND WEIGHT

Description	MIN	Unit
Dimensions	55 (L) x 48 (W) x 12 (H)	mm
Weight	approx. 30	gr

CARATTERISTICHE ELETTRICHE

Parameter	Description	MIN	TYP	MAX	Unit
General					
Vin	Supply Voltage	12.35	13	13.65	V
Pin (std-by)	Stand-by Load		0.5		W
Pin (tx)	Transmission Load		3.5		W
Tstby	Maximum RTC retention without power supply			5	years
PLC					
Iout	Maximum Current during Transmission (1s period, $\delta=50\%$)		500		mA
Vac	Maximum AC Voltage			250	Vrms
Outputs					
Vout 3V3	Output voltage 3V3	3.23	3.3	3.37	V
Iout 3V3	Maximum Output Current			100	mA

APPROVAL

CE

PATENTS

102015000041587, 102015000041614, SIAE-13-01-2017/011228

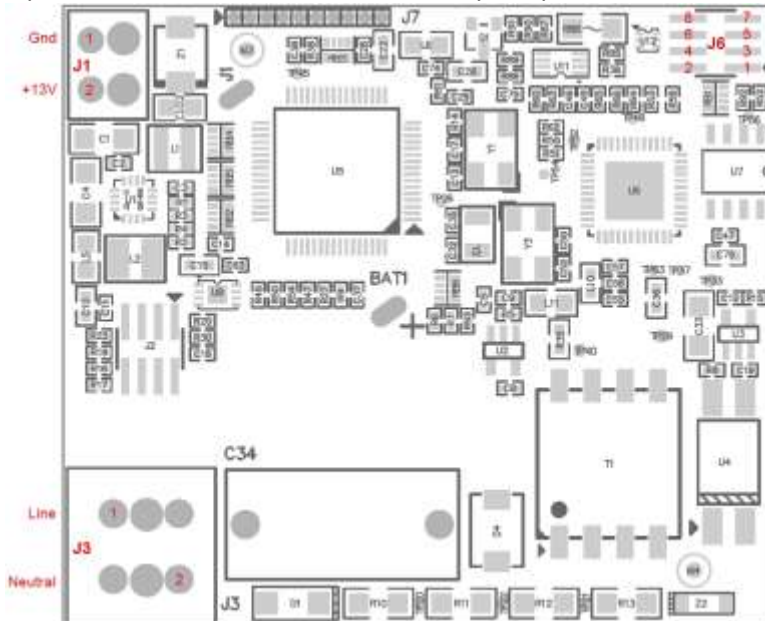
CONNECTION LINKS

User Application Interface (J6)

Male connector set up, 2x4 pins, P=1.27mm, H=6.3mm

Pin	Signal	Notes
1	RS-485_A	Reserved
2	RS-485_B	Reserved
3	GND	
4	GND	
5	UART-RX	3.3V level
6	UART-TX	3.3V level
7	+3.3V	output
8	+3.3V	output

The below picture offers a hint on how to identify the pins number on connectors.



Power supply DC (J1)

Phoenix 1862577 connector set up, female, 2 pins, P=3.81mm

Pin	Signal	Notes
1	GND	
2	+13V	

The position of the connector pins are indicated in the bottom side of the PCB.

PLC network coupling for linking to Low Voltage customer network (J3)

Phoenix 1786404 connector set up, female, 2 pins, P=5.08mm

Pin	Signal	Notes
1	Line	
2	Neutral	

The position of the connector pins are indicated in the bottom side of the PCB.

NOTE: It is necessary to protect PLC coupling circuit PLC (J3 connection) by means of a delayed fuse rated 3.15A 250 V

POWER SUPPLY REQUIREMENTS

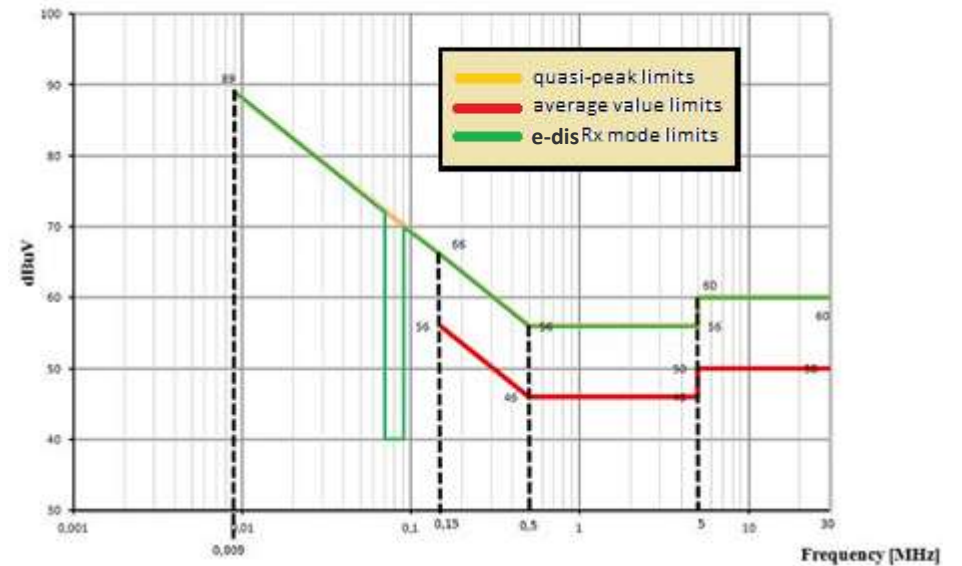
The OEM PLC module does not include a power supply section. Hence, it requires devices developed by System Integrators to provide power supply. The power supply is brought to the module through J1 connector. The power supply, realized by System Integrators' device, must necessarily fulfill these requirements:

- Output regulated voltage: 13Vdc \pm 5%
- Minimum output current: 500mA rms
- Input impedance (230Vca side, where the network PLC coupling is connected): $> 100 \Omega$ between line and neutral in the frequency range from 60kHz up to 90kHz
- Conducted Emissions Level (230Vca side): 40dBuV in the frequency range from 60kHz up to 90kHz

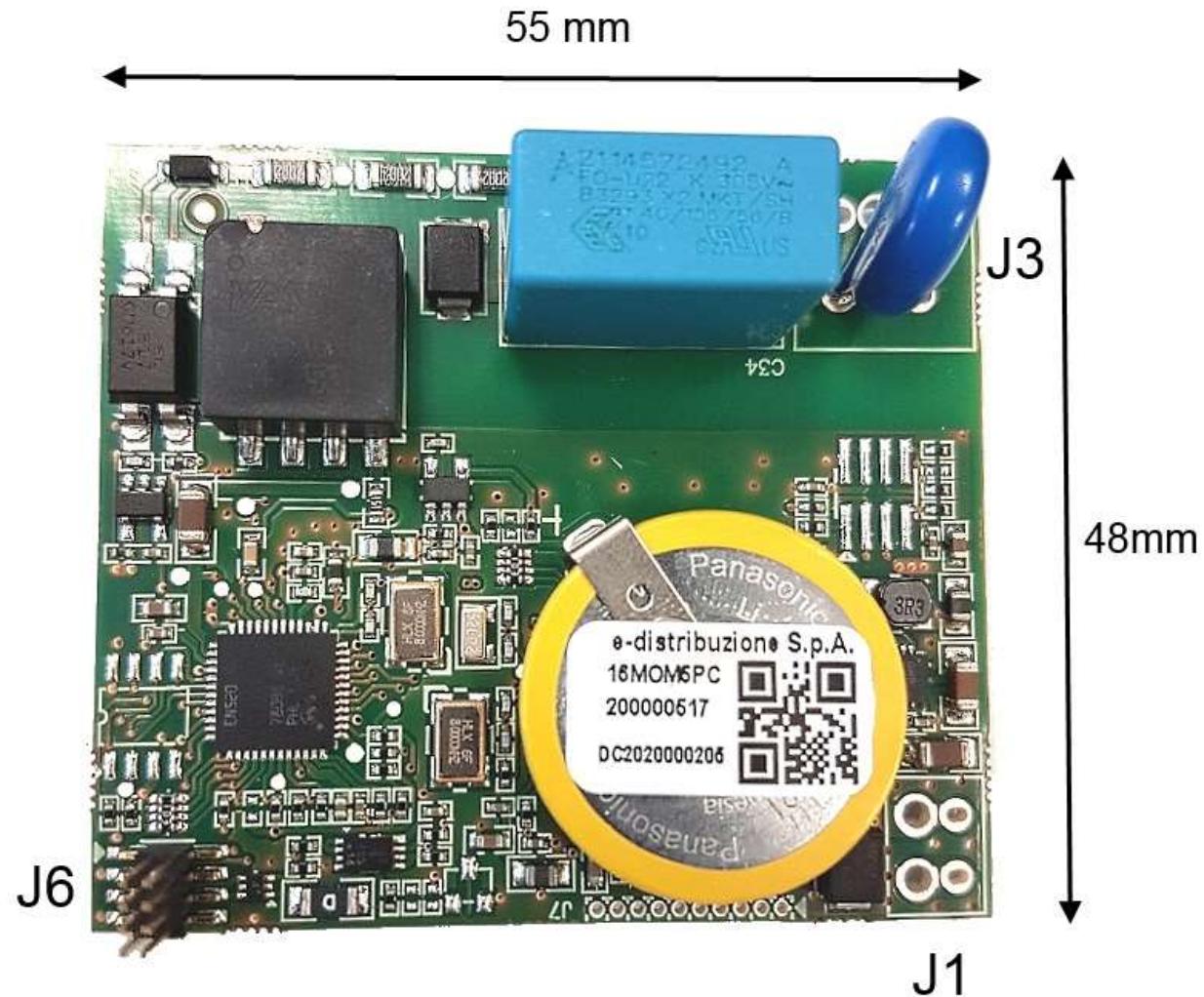
NOTES:

- Output voltage level is required to guarantee the maximum amplitude of the PLC signal (7 Vpp), allowed by CISPR 22 without leading to harmonic distortions (refer to following diagram)
- Input impedance influences the PLC signal level injected on the same network though J3 connector
- It is necessary to protect PLC coupling circuit (J3 connection) by means of a delayed fuse rated 3.15A 250 V

Disturbance voltage limits (measured at power supply terminals)

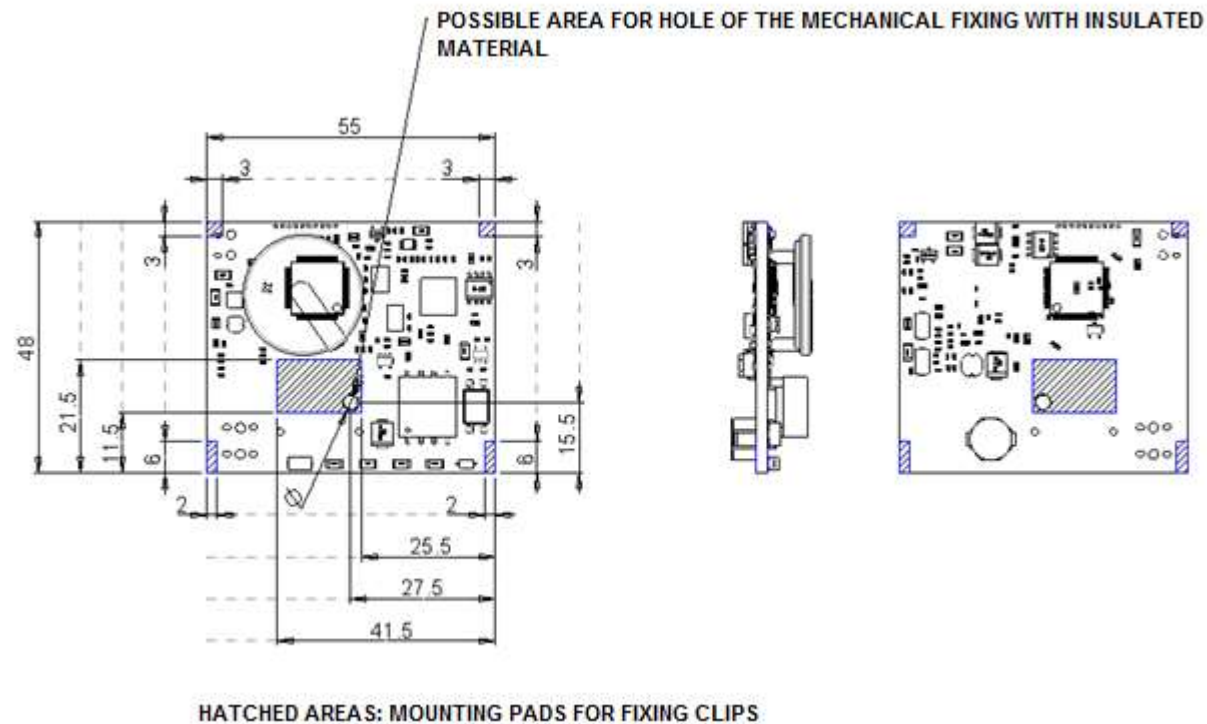


MECHANICAL DRAWING



MECHANICAL FIXING

Mechanical fixing arrangements for MOME are left to the System Integrator that integrates MOME in his own devices; to this extent please refer to indications offered by the following picture:



The final application shall consider the mechanical and thermal stresses to which MOME could be exposed. It is suggested to adopt solutions allowing access and removal of MOME module. Fixing Hole diameter is 3.2 mm.