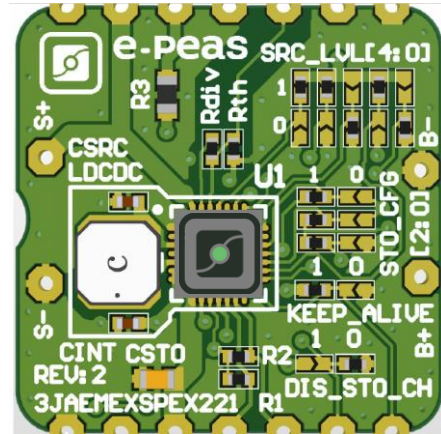


AEM00901

Quick Start Guide Stamp Module



FEATURES

Breakout solder pads

- Connection for the photovoltaic cell.
- Connection for the storage element.
- Connection for thermal monitoring.
- Connection for I²C communication.
- Reset pin.

Solder bridges and resistors

- Configuration of the SRC constant voltage regulation.
- Configuration of the storage element protection levels.
- Configuration of the thermal monitoring.
- Configuration of the KEEP_ALIVE and DIS_STO_CH features.

Size

- 20mm x 20mm.

SUPPORT PCB

BOM around the AEM00901

	Designator	Description	Quantity	Manufacturer	Part Number
Mandatory	U1	AEM0090x	1	e-peas	order at sales@e-peas.com
	Battery	Battery with 2.8 V min. voltage	1	To be defined by user	
	LDCDC (AEM00900)	Power inductor 6.8 μH 1.15A 1008	1	TDK	VLS252012HBX-6R8M-1
	LDCDC (AEM00901)	Power inductor 33 μH 680 mA 1515	1	Coilcraft	LPS4018-333MRB
	CSRC	Ceramic capacitor 22 μF 6.3 V 20% X5R 0402	1	Murata	GRM158R60J226ME01
Optional	CINT	Ceramic capacitor 22 μF 6.3 V 20% X5R 0402	1	Murata	GRM158R60J226ME01
	CSTO	Ceramic capacitor 22 μF 6.3 V 20% X5R 0402	1	Murata	GRM158R60J226ME01
	R1, R2	Pull-up 1kΩ Resistors for I ² C interface	2	Yageo	AC0603FR-071KL
	Rth	10kΩ NTC thermistor for temperature monitoring	1	Murata	NCP15XH103J03RC
	Rdiv	Resistor 22kΩ 1%	1	Yageo	PNRC0402FR-0722KL

Footprint & Symbol: information available on the datasheet.





STEP 1: AEM00901 stamp module configuration

- **SRC regulation voltage:** SRC_LVL_CFG[4:0] (seen as HIGH if left floating)

Configuration pins						Voltage Level
SRC_LVL_CFG[5:0] ¹						V _{SRC,REG}
L	L	L	H	H	L	0.12 V
L	L	L	H	H	H	0.13 V
L	L	H	L	L	L	0.15 V
L	L	H	L	L	H	0.16 V
L	L	H	L	H	L	0.18 V
L	L	H	L	H	H	0.19 V
L	L	H	H	L	L	0.21 V
L	L	H	H	L	H	0.22 V
L	L	H	H	H	L	0.24 V
L	L	H	H	H	H	0.25 V
L	H	L	L	L	L	0.27 V
L	H	L	L	L	H	0.28 V
L	H	L	L	H	L	0.30 V
L	H	L	L	H	H	0.33 V
L	H	L	H	L	L	0.36 V
L	H	L	H	L	H	0.39 V
L	H	L	H	H	L	0.42 V
L	H	L	H	H	H	0.45 V
L	H	H	L	L	L	0.48 V
L	H	H	L	L	H	0.51 V
L	H	H	L	H	L	0.54 V
L	H	H	L	H	H	0.57 V
L	H	H	H	L	L	0.60 V
L	H	H	H	L	H	0.63 V
L	H	H	H	H	L	0.66 V
L	H	H	H	H	H	0.69 V

1. On the AEM00901 stamp module, the MSB of the SRC_LVL_CFG[5:0] pins has been tied to ground (L).

- **Storage element threshold voltages:** STO_CFG[2:0] (seen as HIGH if left floating)

Configuration	Availability Through Pins		Storage Element Threshold Voltage	
STO_CFG[2:0]	I ² C Interface	Configuration pins	V _{OVCH}	V _{OVDIS}
LLL	yes	yes	4.50 V	3.30 V
LLH	yes	yes	4.00 V	2.80 V
LHL	yes	yes	3.63 V	2.80 V
LHH	yes	yes	3.90 V	2.80 V
HLL	yes	yes	3.90 V	3.50 V
HLH	yes	yes	3.90 V	3.01 V
HHL	yes	yes	4.35 V	3.01 V
HHH	yes	yes	4.12 V	3.01 V

- **Thermal monitoring:**

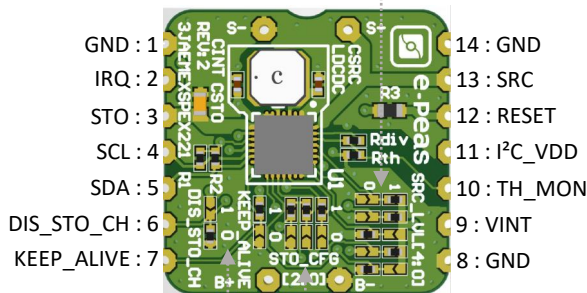
Thermal monitoring is enabled by default on the stamp module. To disable it, the user must connect TH_MON (pin 10) to VINT (pin 9) externally.

- **Configuration mode:**

- DIS_STO_CH : Connect to 0 to enable the charge of the storage element, connect to 1 to disable it (seen as LOW if left floating).
- KEEP_ALIVE : Connect to 1 to enable the feature, connect to 0 to disable the feature (seen as HIGH if left floating).

- **I²C communication:**

All the AEM configurations, as well as various information are available through I²C communication. See the AEM00900 datasheet for more details.





STEP 2: Connect a storage element with a voltage higher than 2.8 V

STEP 3: Connect a photovoltaic single cell

- Internal boost efficiency vs. input voltage (LDCDC = 33 μ H):

