

## OBC:VMAX (Citroen AMI) PCB Circuit Analysis Report



Cited from: Citroen AMI  
<https://store.citroen.co.uk/ami/my-ami-orange?journey=vac>



OBC Overview



Main PCB Overview

### Overview

- AMI is an ultra-compact BEV. Released by Citroen in Europe in April 2020.
- Valeo's 48V eAccess has been adopted.
- LTEC released three analysis reports of OBC (On Board Charger) for AMI.

### Product features

- The manufacturer: VMAX
  - Inputs: 230VAC (single phase)
  - Power: 48VDC, 14VDC
- Lithium-ion battery: 5.5 kWh
- Motor-output 6kW, max. speed: 45km/h

### Circuit analysis + Mechanical parts analysis (105 pages)

PCB analysis + Chassis configuration

- Product Teardown
- Component list
  - (PCB mounted components and mechanical parts)
- Note: Mechanical parts are partially missing.
- Chassis configuration
- Component level detailed schematic, Function block diagram
  - Cross reference viewer (Schematic and Layout)

### Report price

**Delivered one week after order placement**

**Please contact us for report pricing.**

## TABLE OF CONTENTS

		Page
<b><u>Summary</u></b>		
<b>Table 1</b>	<b>Product information</b>	...     4
<b><u>Overview</u></b>		
<b>Fig. A-1</b>	<b>Product overview</b>	...     A-1
<b>Fig. A-2-1</b>	<b>Product Labels, Product caution labels</b>	...     A-2
<b>Fig. A-2-2</b>	<b>Product marking1</b>	...     A-3
<b>Fig. A-2-3</b>	<b>Product marking2</b>	...     A-4
<b>Fig. A-2-4</b>	<b>Product marking3</b>	...     A-5
<b>Fig. A-3-1</b>	<b>Product teardown1</b>	...     A-6
<b>Fig. A-3-2</b>	<b>Product teardown2</b>	...     A-7
<b>Fig. A-3-3</b>	<b>Product teardown3</b>	...     A-8
<b>Fig. A-3-4</b>	<b>Product teardown4</b>	...     A-9
<b>Fig. A-3-5</b>	<b>Product teardown5</b>	...     A-10
<b>Fig. A-3-6</b>	<b>Product teardown6</b>	...     A-11
<b>Fig. A-3-7</b>	<b>Product teardown7</b>	...     A-12
<b>Fig. A-3-8</b>	<b>Product teardown8</b>	...     A-13
<b>Fig. A-4-1</b>	<b>Main PCB Overview</b>	...     A-14
<b>Fig. A-4-2</b>	<b>Internal Power Supply PCB Overview</b>	...     A-15
<b>Fig. A-4-3</b>	<b>Capacitor PCB Overview</b>	...     A-16
<b>Fig. A-5-1</b>	<b>Main PCB Overview X-Ray</b>	...     A-17
<b>Fig. A-5-2</b>	<b>Internal Power Supply PCB Overview X-Ray</b>	...     A-18
<b>Fig. A-5-3</b>	<b>Capacitor PCB Overview X-Ray</b>	...     A-19
<b>Fig. A-6-1</b>	<b>Main PCB Overview (After Component Removal)</b>	...     A-20
<b>Fig. A-6-2</b>	<b>Internal Power Supply PCB Overview (After Component Removal)</b>	...     A-21
<b>Fig. A-6-3</b>	<b>Capacitor PCB Overview (After Component Removal)</b>	...     A-22
<b>Fig. A-7-1-1</b>	<b>Main PCB Layer L1 (Top View)</b>	...     A-23
<b>Fig. A-7-1-2</b>	<b>Main PCB Layer L2 (Top View)</b>	...     A-24
<b>Fig. A-7-1-3</b>	<b>Main PCB Layer L3 (Top View)</b>	...     A-25
<b>Fig. A-7-1-4</b>	<b>Main PCB Layer L4 (Top View)</b>	...     A-26
<b>Fig. A-7-2-1</b>	<b>Internal Power Supply PCB Layer L1 (Top View)</b>	...     A-27
<b>Fig. A-7-2-2</b>	<b>Internal Power Supply PCB Layer L2 (Top View)</b>	...     A-27
<b>Fig. A-7-2-3</b>	<b>Internal Power Supply PCB Layer L3 (Top View)</b>	...     A-27
<b>Fig. A-7-2-4</b>	<b>Internal Power Supply PCB Layer L4 (Top View)</b>	...     A-27
<b>Fig. A-7-3-1</b>	<b>Capacitor PCB Layer L1 (Top View)</b>	...     A-28
<b>Fig. A-7-3-2</b>	<b>Capacitor PCB Layer L2 (Top View)</b>	...     A-28

	Page
<b><u>Chassis configuration</u></b>	
Fig. B-1 <b>Case Overview</b>	...    B-1
Fig. B-2 <b>Case</b>	...    B-2
Fig. B-3 <b>Cooling cover</b>	...    B-3
Fig. B-4 <b>Cover 1</b>	...    B-4
Fig. B-5 <b>Cover 2</b>	...    B-5
Fig. B-6 <b>Rear cover</b>	...    B-6
Fig. B-7-1 <b>Rear cover - Case sealing</b>	...    B-7
Fig. B-7-2 <b>Cover 1,2 – Case sealing</b>	...    B-8
Fig. B-7-3 <b>Communication connector – Case sealing</b>	...    B-9
Fig. B-7-4 <b>Cooling fan connector – Case sealing</b>	...    B-10
Fig. B-7-5 <b>AC Input Connector, DC Output Connectors 1,2 – Case sealing</b>	...    B-11
<b><u>Parts mount position</u></b>	
Fig. C-1 <b>Case Overview</b>	...    C-1
Fig. C-2 <b>Case after removing rear cover (Bottom View)</b>	...    C-2
Fig. C-3 <b>Case after removing the main PCB (Bottom View)</b>	...    C-3
Fig. C-4 <b>Case after removing cover (Top View)</b>	...    C-4
Fig. C-5 <b>Main PCB Resin, Cord</b>	...    C-5
Fig. C-6 <b>Main PCB Moisture-proof material</b>	...    C-6
Fig. C-7 <b>Internal Power Supply PCB Resin, Cord, Moisture-proof material</b>	...    C-7
Fig. C-8 <b>Capacitor PCB Resin, Cord, Moisture-proof material</b>	...    C-8
Fig. C-9 <b>Main PCB Parts Mount Position 1 (Top View)</b>	...    C-9
Fig. C-10 <b>Main PCB Parts Mount Position 2 (Top View)</b>	...    C-10
Fig. C-11 <b>Main PCB Parts Mount Position 3 (Bottom View)</b>	...    C-11
Fig. C-12 <b>Main PCB Parts Mount Position 4 (Bottom View)</b>	...    C-12
Fig. C-13 <b>Main PCB Parts Mount Position 5 (Bottom View)</b>	...    C-13
Fig. C-14 <b>Main PCB Parts Mount Position 6 (Bottom View)</b>	...    C-14
Fig. C-15 <b>Internal Power Supply PCB Parts Mount Position</b>	...    C-15
Fig. C-16 <b>Capacitor PCB Parts Mount Position</b>	...    C-16

	Page
<b><u>Circuit</u></b>	
<b>Fig. D-1</b>	<b>Block Diagram</b>
<b>Fig. D-2</b>	<b>Schematic</b>
<b>Table D</b>	<b>Circuit Overview</b>
<b><u>Components List</u></b>	
<b>Fig. E-1</b>	<b>Mechanical components Parts List</b>
<b>Fig. E-2</b>	<b>Main PCB Parts List</b>
<b>Fig. E-3</b>	<b>Internal Power Supply PCB Parts List</b>
<b>Fig. E-4</b>	<b>Capacitor PCB Parts List</b>
<b>Fig. E-5</b>	<b>External electronic components of PCB Parts List</b>
<b><u>Transformer measurement</u></b>	
<b>Fig. F-1</b>	<b>Inductance measurement</b>
<b>Fig. F-2</b>	<b>Transformer (0248) measurement results</b>
<b>Fig. F-3</b>	<b>Transformer (0477) measurement results</b>
<b>Fig. F-4</b>	<b>Transformer (0496) measurement results</b>
<b>Fig. F-5</b>	<b>Transformer (1011) measurement results</b>