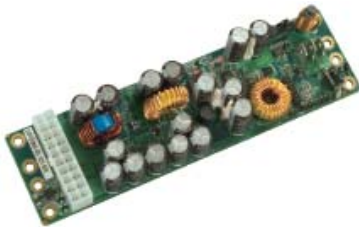


# IDDV-6304140A

## 140W DC/DC ATX Converter Module

### Version: 1.0

## Quick Installation Guide



### ABOUT THE IDDV-6304140A

The highly efficient, high-performance 140-watt IDDV-6304140A DC-to-DC vehicle ATX converter module provides 5V, 3.3V, 12V, -12V and 5VSB outputs. The IDDV-6304140A is designed for vehicle PC and receives a wide range of inputs between 6 and 30 VDC. The IDDV-6304140A is built on an intelligent design and provides outstanding line and load regulations. The IDDV-6304140A is capable of sustaining 90% power efficiency.

The power module also solves the 5V standby problem by cutting off the 5VSB rail after an amount of time (defined by jumper settings) to prevent the battery from draining. When the battery voltage is below 10.7V for more than thirty seconds, the IDDV-6304140A shuts down. The IDDV-6304140A reactivates again only when the input voltage is higher than 10.7V.

### SPECIFICATIONS

- Highly compact design
- Smart system on/off control
- High efficiency up to 90%
- Load down protection
- Over voltage protection
- Over current protection
- Short circuit protection
- Battery voltage monitor
- Amplifier on-delay control
- RoHS compliant
- IrDA remote control Off (optional)
- Electrical Specifications:
  - o Total output capacity: 140W

- 5V@10A Max.
- 3.3V@10A Max.
- 12V@4A Max.
- -12V@0.15A Max.
- 5VSB@1.5A Max.
- o Input Voltage: 6VDC to 30VDC
  - Min. input operating voltage: 5.7V
  - Max. input operating voltage: 30V
- o Min. Power Up Voltage: 8V
- o Deep discharged shut down voltage: 10.6V
- Dimensions: 45mm x 160mm
- Environment:
  - o Operating temperature: -20°C ~ +85°C
  - o Storage temperature: -40°C ~ +125°C
- Weight: NW: 118g
- Power Capacity:

| Voltage     | Current (Max.) | Ripple (Vp-p) | Line Regulation |
|-------------|----------------|---------------|-----------------|
| 5V output   | 10A            | 50mV          | 1.5%            |
| 3.3V output | 10A            | 50mV          | 1.5%            |
| 12V output  | 4A             | 50mV          | 1.5%            |
| -12V output | 0.15A          | 150mV         | 1.5%            |
| 5VSB output | 1.5A           | 150mV         | 1.5%            |

Table 1: Maximum Power Capacity

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### PACKING LIST

When you unpack the power module, make sure the following items have been shipped.

- 1 x IDDV-6304140A ATX converter module
- 1 x QIG (Quick Installation Guide)
- 1 x 20-pin ATX to 20-pin ATX/SATA/HDD cable (optional)
- 1 x Wire to battery and ACC on (optional)

# IDDV-6304140A SYSTEM BLOCK DIAGRAM

The system block diagram of the IDDV-6304140A are shown below.

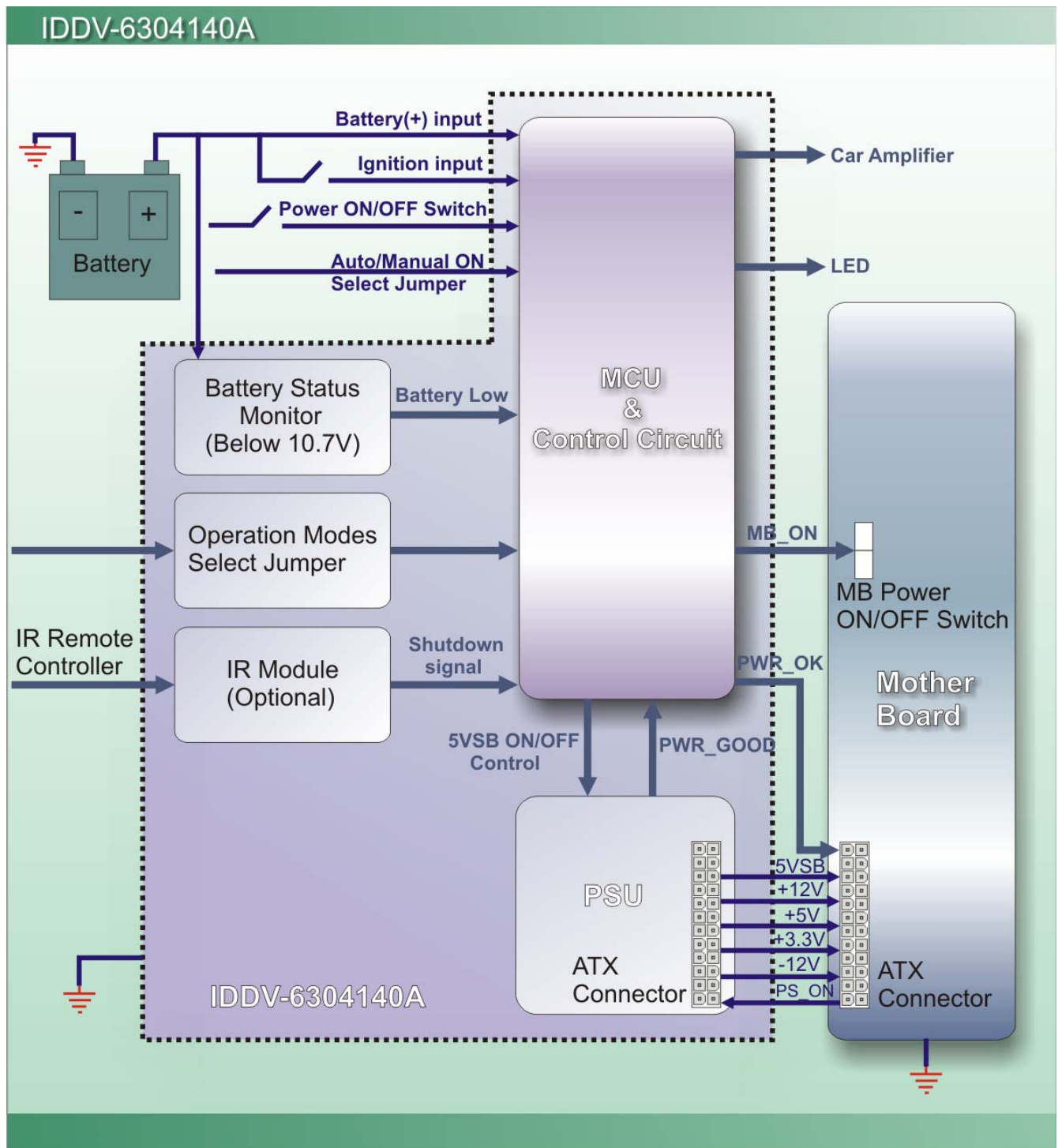


Figure 1: IDDV-6304140A System Block Diagram

## IDDV-6304140A DIMENSION DRAWING

The dimensions of the IDDV-6304140A are shown below.

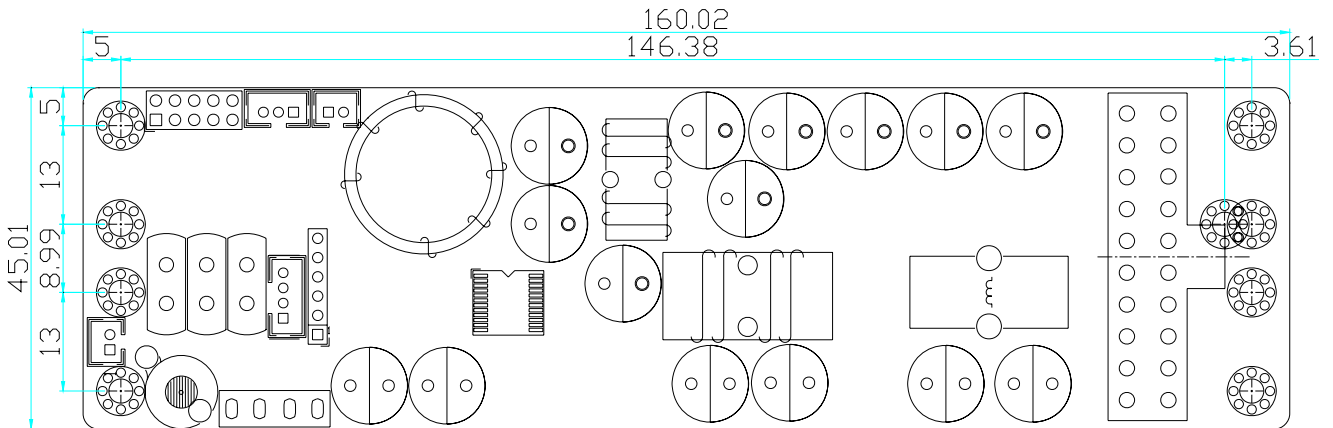


Figure 2: IDDV-6304140A Dimension Drawing (measurement units: millimeter)

## IDDV-6304140A CONNECTOR AND JUMPER LOCATIONS

The following diagram shows the connector and jumper locations of the IDDV-6304140A.

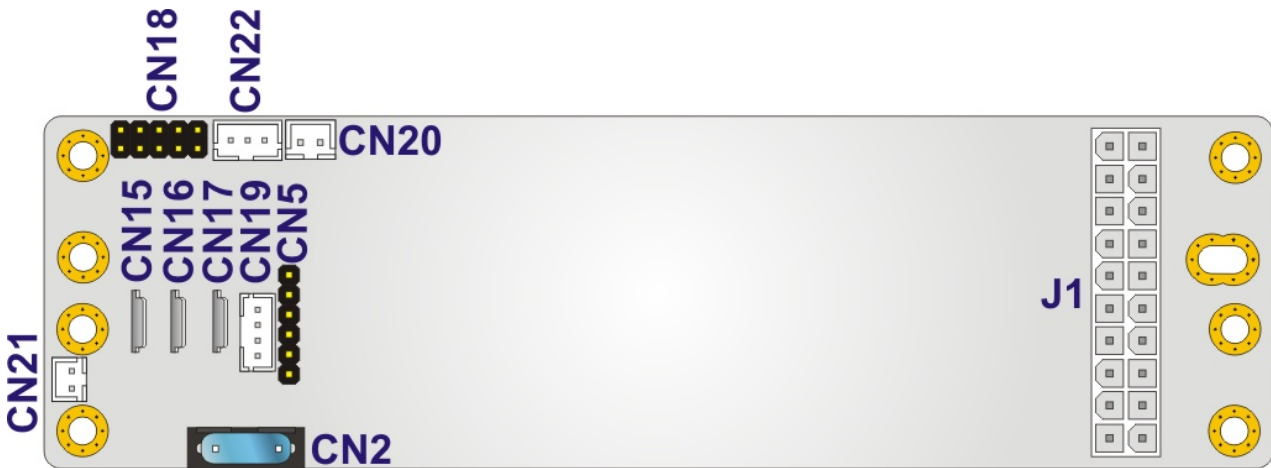


Figure 3: IDDV-6304140A Connector and Jumper Locations

## AMPLIFIER ON DELAY FUNCTION (CN19)

| PIN NO. | DESCRIPTION |
|---------|-------------|
| 3       | AMP         |
| 4       | GROUND      |

Table 2: Amplifier On Delay Function Connector Pinouts

## INFRARED INTERFACE CONNECTOR (OPTIONAL) (CN22)

| PIN NO. | DESCRIPTION           |
|---------|-----------------------|
| 1       | GROUND                |
| 2       | V <sub>cc</sub> (P5V) |
| 3       | IRRX                  |

Table 7: Infrared Interface Connector Pinouts

## ATX POWER CONNECTOR (J1)

| PIN NO. | DESCRIPTION | PIN NO. | DESCRIPTION |
|---------|-------------|---------|-------------|
| 1       | 3.3V        | 11      | 3.3V        |
| 2       | 3.3V        | 12      | -12V        |
| 3       | GND         | 13      | GND         |
| 4       | +5V         | 14      | PS_ON       |
| 5       | GND         | 15      | GND         |
| 6       | +5V         | 16      | GND         |
| 7       | GND         | 17      | GND         |
| 8       | Power good  | 18      | -5V         |
| 9       | 5VSB        | 19      | +5V         |
| 10      | +12V        | 20      | +5V         |

Table 3: ATX Power Connector Pinouts

## POWER ON/OFF SWITCH CONNECTOR (EXTERNAL) (CN20)

| PIN NO. | DESCRIPTION |
|---------|-------------|
| 1       | PWRSW       |
| 2       | GROUND      |

Table 8: Power On/Off Switch (External) Connector Pinouts

## POWER ON/OFF SWITCH CONNECTOR (MOTHERBOARD) (CN21)

| PIN NO. | DESCRIPTION |
|---------|-------------|
| 1       | MB_SW       |
| 2       | MB_SW1      |

Table 9: Power On/Off Switch (Motherboard) Connector Pinouts

## BATTERY LOW LED CONNECTOR (CN19)

| PIN NO. | DESCRIPTION |
|---------|-------------|
| 1       | LEDA        |
| 2       | LEDB        |

Table 4: Battery Low LED Connector Pinouts

## BURNER PROGRAM FOR MICROCHIP (CN5)

| PIN NO. | DESCRIPTION     |
|---------|-----------------|
| 1       | MODEDD/MCLR     |
| 2       | V <sub>cc</sub> |
| 3       | GROUND          |
| 4       | LED/RB7         |
| 5       | AMPLIFTER/RB6   |
| 6       | NC              |

Table 5: Burner Program for Microchip Connector Pinouts

## INPUT POWER CONNECTORS (CN15, CN16, CN17)

| Connector | DESCRIPTION                |
|-----------|----------------------------|
| CN15      | Battery(+)                 |
| CN16      | ACC On (signal) (Ignition) |
| CN17      | Battery(-) (GND)           |

Table 6: Input Power Connector Pinouts

## OPERATION MODE SELECT JUMPER (CN18)







|        | Jumper  | Soft Off Delay                                   | Hard Off Delay   |
|--------|---|--|--|
| Case 1 |  | After <b>10 seconds</b> , shut down motherboard. | After <b>10 seconds</b> , shut down motherboard and cut off 5VSB rail. |
| Case 2 |  | After <b>15 seconds</b> , shut down motherboard. | After <b>45 seconds</b> , cut off 5VSB rail.                           |
| Case 3 |  | After <b>15 seconds</b> , shut down motherboard. | After <b>1 hour</b> , cut off 5VSB rail.                               |
| Case 4 |  | After <b>15 seconds</b> , shut down motherboard. | <b>Never</b> deactivate 5VSB.<br>(Still monitor batter status)         |
| Case 5 |  | After <b>40 seconds</b> , shut down motherboard. | After <b>1 hour</b> , cut off 5VSB rail.                               |
| Case 6 |  | After <b>30 minutes</b> , shut down motherboard. | <b>Never</b> deactivate 5VSB.<br>(Still monitor batter status)         |

Table 10: Operation Modes

| FUNCTION  | Pin 1-2 | Pin 3-4 | Pin 5-6 | Pin 7-8 | Pin 9-10 |
|-----------|---------|---------|---------|---------|----------|
| Case 1    | short   | open    | open    | open    |          |
| Case 2    | open    | short   | open    | open    |          |
| Case 3    | short   | short   | open    | open    |          |
| Case 4    | open    | open    | short   | open    |          |
| Case 5    | short   | open    | short   | open    |          |
| Case 6    | open    | short   | short   | open    |          |
| Auto_On   |         |         |         |         | short    |
| Manual_On |         |         |         |         | open     |

Table 0-11: Operation Mode Select Jumper Pinouts