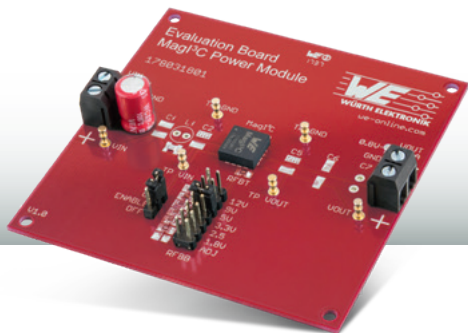




# Quick Start Guide

Mag13C Power Module Evaluation Board  
for 1710X1801 LGA16-EP



Evaluation Board  
1780X1801

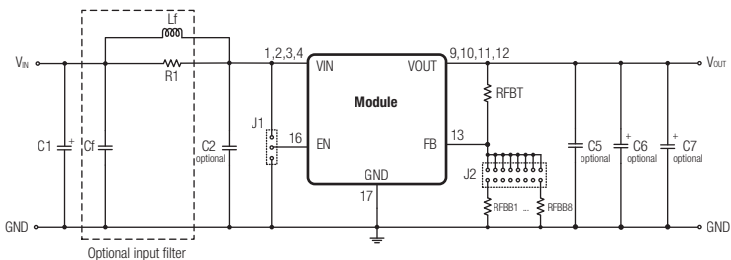
Version 1.0



WARNING! – Before operating read the attached IMPORTANT NOTICE document!

# Schematic

## Features



The additional aluminum electrolytic capacitor C1 is only for evaluation board protection purposes. It is mounted at the termination of the supply line and provides slight damping of possible oscillations of the series resonance circuit represented by the inductance of the supply line and the input capacitance. It is not essential for operation.

For accurate  $V_{IN}$  and  $V_{OUT}$  voltage measurements it is recommended to measure directly at the test pins placed beside the input and output capacitors C2 and C5.

It is **not** recommended to use this evaluation board with input and output wire lengths longer than 1 m.

For the datasheet of the power module visit us at: <https://www.we-online.de/katalog/de/MAGIC-VDRM>



This product is highly sensitive to electrostatic discharge (ESD). As such, always use proper ESD precautions when handling. Failing to follow the aforementioned recommendations can result in severe damage to the part.



**WARNING!** – Before operating read the attached IMPORTANT NOTICE document!

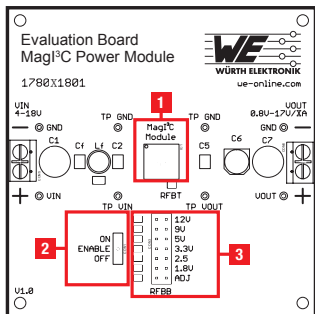


Ref.Des.	Description (Order Code)							
U1	Mag <sup>3</sup> C VDRM (1710x1801)							
C1	Aluminum electrolytic capacitor 220 $\mu$ F/25 V (860020474012)							
C2	Ceramic chip capacitor (optional)							
C3	Ceramic chip capacitor (optional)							
C5	Ceramic chip capacitor (optional)							
C6	Surface mounted electrolytic (optional)							
C7	Through hole electrolytic (optional)							
Cf	Ceramic chip capacitor 10 $\mu$ F/25 V X5R, 1206 (optional) (885012108021)							
Lf	Filter inductor, 10 $\mu$ H, PD2 (optional) (74477510)							
RFBT	10 k $\Omega$							
RFBB	<table border="1"> <tbody> <tr> <td>750 <math>\Omega</math> for <math>V_{OUT} = 12</math> V</td> </tr> <tr> <td>976 <math>\Omega</math> for <math>V_{OUT} = 9</math> V</td> </tr> <tr> <td>1.78 k<math>\Omega</math> for <math>V_{OUT} = 5</math> V (default setting)</td> </tr> <tr> <td>3.16 k<math>\Omega</math> for <math>V_{OUT} = 3.3</math> V</td> </tr> <tr> <td>4.64 k<math>\Omega</math> for <math>V_{OUT} = 2.5</math> V</td> </tr> <tr> <td>7.87 k<math>\Omega</math> for <math>V_{OUT} = 1.8</math> V</td> </tr> <tr> <td>To be soldered for adjustable output voltage <math>R_{FBB} = \frac{R_{FBB} \cdot 0.8 V}{V_{OUT} - 0.8 V}</math></td> </tr> </tbody> </table>	750 $\Omega$ for $V_{OUT} = 12$ V	976 $\Omega$ for $V_{OUT} = 9$ V	1.78 k $\Omega$ for $V_{OUT} = 5$ V (default setting)	3.16 k $\Omega$ for $V_{OUT} = 3.3$ V	4.64 k $\Omega$ for $V_{OUT} = 2.5$ V	7.87 k $\Omega$ for $V_{OUT} = 1.8$ V	To be soldered for adjustable output voltage $R_{FBB} = \frac{R_{FBB} \cdot 0.8 V}{V_{OUT} - 0.8 V}$
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J1	Jumper for EN connection to either $V_{IN}$ (device enabled) or GND (device disabled) (61300311121)							
J2	Jumper for output voltage selection. Only one resistor should be selected at a time (61301621121)							



For Layout, Gerber and STP files visit us on:  
[www.we-online.de/katalog/de/MAGIC-VDRM](http://www.we-online.de/katalog/de/MAGIC-VDRM)

# Overview



## Description

$V_{IN}$  4–18 V

$V_{OUT}$  0.8–17 V

$I_{OUT}$  1 A / 2 A / 3 A

- 1 VDRM Variable Step Down Regulator Module LGA16-EP
- 2 Jumpers (J1) for ENABLE & shut off the Module
- 3 Jumpers to set predefined output voltage  $V_{OUT}$
- 4 Terminal block screw connectors for  $V_{IN}$  and  $V_{OUT}$

## Absolute maximum ratings

**Caution:** Exceeding the abs. max. values given in the datasheet may affect the device negatively and may cause permanent damage.



This evaluation board is intended to be operated in a research and development environment under the supervision of qualified technicians and engineers who are trained and experienced in the safe use of electronics. This evaluation board was designed and tested according to CISPR32 Class B standards under Würth Elektronik laboratory test conditions, as indicated in the data sheet of the corresponding power module. Operation in other test setups may cause unintended electrical behavior and exceed the stated performance and limits imposed by the CISPR32 Class B standards. This evaluation board is not intended for usage in final applications. This evaluation board is not intended for resale.



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