

SPOC™ +2 - Extender board description

About this document

Scope and purpose

The purpose of this evaluation board is to provide a connectivity solution for the first generation of SPOC™ +2 daughterboards to the new smart power switches *motherboard (MB)*. This board enables developers and engineers to evaluate and test the compatibility of their existing SPOC™ +2 *daughterboard (DB)* with the latest smart power switches MB, facilitating a seamless transition to the new platform.

Intended audience

This evaluation board is intended for developers, engineers, and technical professionals familiar with the SPOC™ +2 DB ([Daughterboards ordering information](#)) and the smart power switches MB ([Motherboards ordering information](#)), including electronics engineers, software developers, and system integrators.

About this product group

Target applications

Automotive (for example, battery management and electric vehicle charging), industrial control, power management, renewable energy, and other applications.

Product family

SPOC™ + 2

Note: *printed circuit board (PCB) and auxiliary circuits are NOT optimized for final customer design.*

Safety precautions

Safety precautions

Note: Note the following warnings regarding the hazards associated with development systems.

Table 1 Safety precautions

	Warning: The DC-link potential of this board is up to 1000 VDC. When measuring voltage waveforms by oscilloscope, high voltage differential probes must be used. Failure to do so may result in personal injury or death.
	Warning: The evaluation or reference board contains DC bus capacitors which take time to discharge after removal of the main supply. Before working on the drive system, wait five minutes for capacitors to discharge to safe voltage levels. Failure to do so may result in personal injury or death. Darkened display LEDs are not an indication that capacitors have discharged to safe voltage levels.
	Warning: The evaluation or reference board is connected to the grid input during testing. Hence, high-voltage differential probes must be used when measuring voltage waveforms by oscilloscope. Failure to do so may result in personal injury or death. Darkened display LEDs are not an indication that capacitors have discharged to safe voltage levels.
	Warning: Remove or disconnect power from the drive before you disconnect or reconnect wires, or perform maintenance work. Wait five minutes after removing power to discharge the bus capacitors. Do not attempt to service the drive until the bus capacitors have discharged to zero. Failure to do so may result in personal injury or death.
	Caution: The heat sink and device surfaces of the evaluation or reference board may become hot during testing. Hence, necessary precautions are required while handling the board. Failure to comply may cause injury.
	Caution: Only personnel familiar with the drive, power electronics and associated machinery should plan, install, commission and subsequently service the system. Failure to comply may result in personal injury and/or equipment damage.
	Caution: The evaluation or reference board contains parts and assemblies sensitive to electrostatic discharge (ESD). Electrostatic control precautions are required when installing, testing, servicing or repairing the assembly. Component damage may result if ESD control procedures are not followed. If you are not familiar with electrostatic control procedures, refer to the applicable ESD protection handbooks and guidelines.
	Caution: A drive that is incorrectly applied or installed can lead to component damage or reduction in product lifetime. Wiring or application errors such as undersizing the motor, supplying an incorrect or inadequate AC supply, or excessive ambient temperatures may result in system malfunction.
	Caution: The evaluation or reference board is shipped with packing materials that need to be removed prior to installation. Failure to remove all packing materials that are unnecessary for system installation may result in overheating or abnormal operating conditions.

Table of contents

Table of contents

	About this document	1
	Safety precautions	2
	Table of contents	3
1	General information	4
2	Appendices	6
2.1	Daughterboards ordering information	6
2.2	Motherboards ordering information	6
	Glossary	7
	Revision history	8
	Disclaimer	9

1 General information

1 General information

The smart power switches (SPS) evaluation kit consists of a *MB* and a *DB*. Depending on the device’s features, the DB provides additional functionalities. The MB serves as the backbone of the system, providing the necessary connectivity. The DB, on the other hand, contains the device itself and device-specific components, such as the sense resistor (RIS) and ground resistor (RGND) and more. Both the MB and DB are essential components, working together to form a fully functional system.

This extender board is designed to enable the connection of first-generation SPOC™ +2 DBs, which are listed below in the [Daughterboards ordering information](#) with the latest generation of MBs, ensuring seamless compatibility and functionality, which can be found in the [Motherboards ordering information](#).

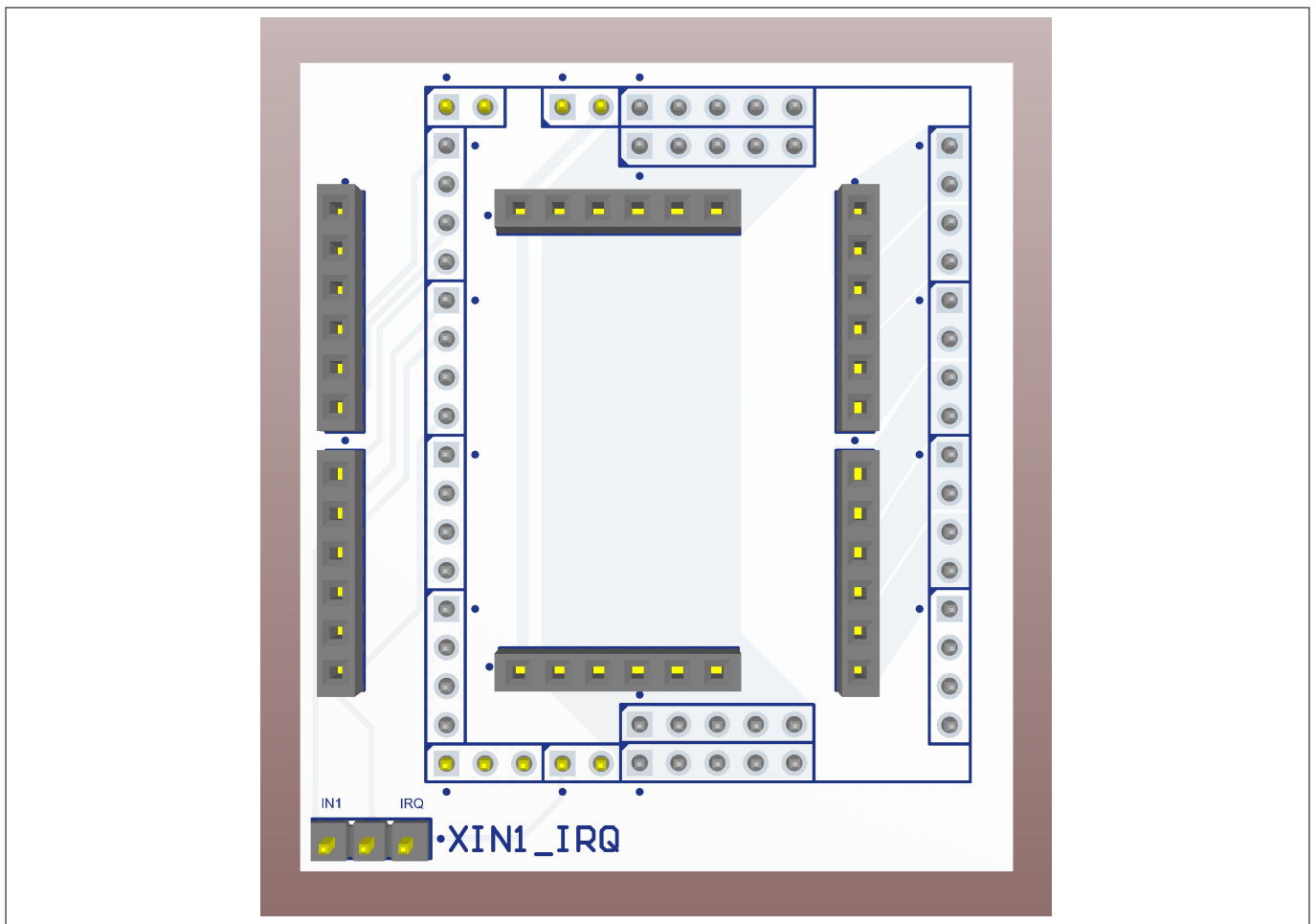


Figure 1 SPOC™ +2 - 3D view

1 General information

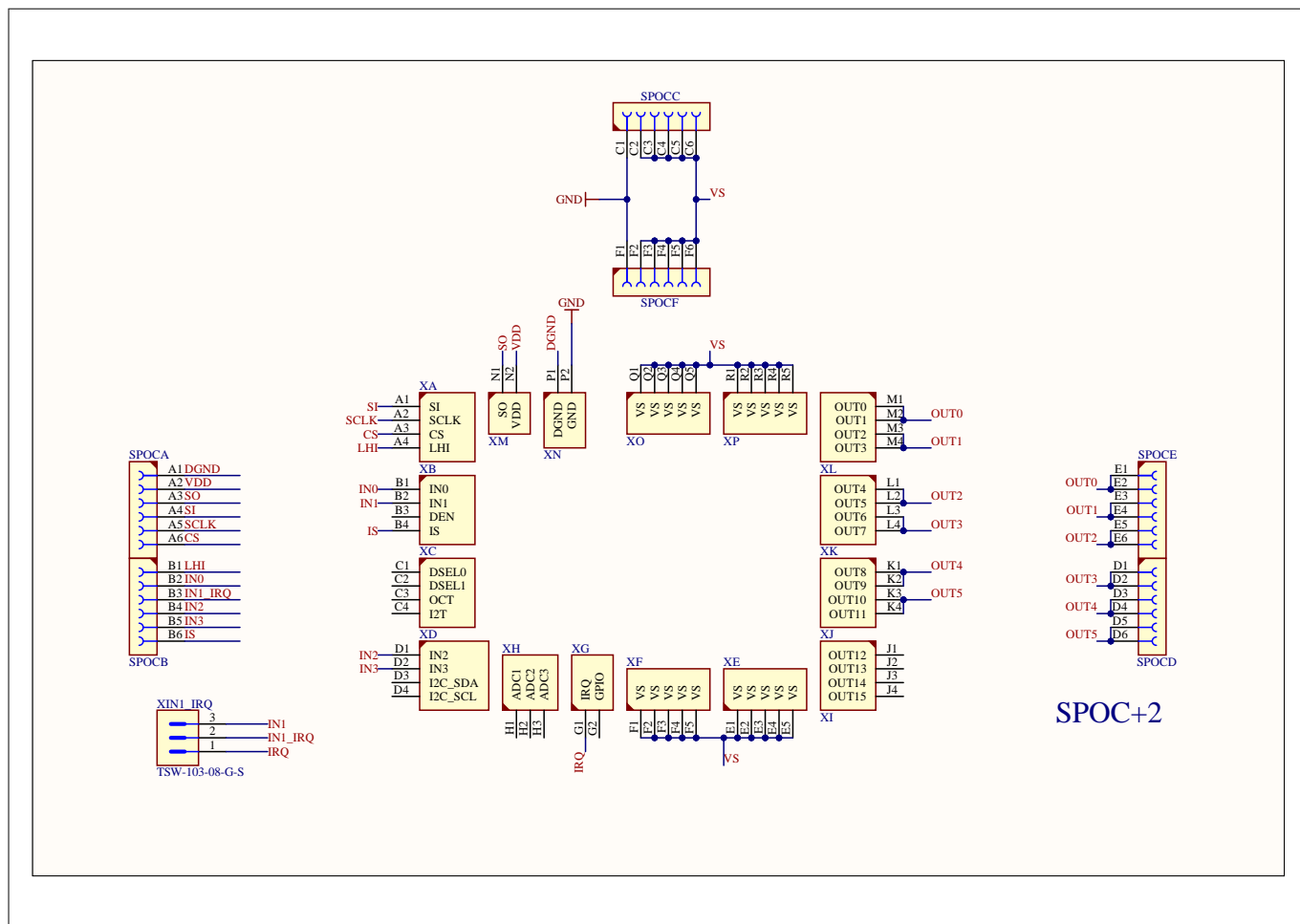


Figure 2 SPOC™ +2 - schematic

2 Appendices

2 Appendices

2.1 Daughterboards ordering information

Table 2 Daughterboards ordering information

Sales part name	Sales product number
SPOC-2 DB BTS71033-6ESA	SP001833458
SPOC-2 DB BTS71033-6ESP	SP005613425
SPOC-2 DB BTS71040-4ESA	SP001833468
SPOC-2 DB BTS71040-4ESE	SP001833464
SPOC-2 DB BTS71040-4ESP	SP005613423
SPOC-2 DB BTS71220-4ESA	SP001833476
SPOC-2 DB BTS71220-4ESE	SP001833472
SPOC-2 DB BTS71220-4ESP	SP005613421
SPOC-2 DB BTS72220-4ESA	SP001833484
SPOC-2 DB BTS72220-4ESE	SP001833480
SPOC-2 DB BTS72220-4ESP	SP005613419

2.2 Motherboards ordering information

Table 3 Motherboards ordering information

Board name	Sales part name	Sales product number
SPS Motherboard Lite	M-SMART-POWER-LITE-5	SP006136123
SPS Motherboard	M-SMART-POWER-SWT-5	SP006041408

Glossary

Glossary

DB

daughterboard (DB)

An expansion circuit card connected to a motherboard.

MB

motherboard (MB)

The main printed circuit board (PCB) in general-purpose computers and other expandable systems. It holds and allows communication between many of the crucial electronic components of a system, such as the central processing unit (CPU) and memory, and provides connectors for other peripherals.

PCB

printed circuit board (PCB)

A board that mechanically supports and electrically connects electronic components using conductive tracks, pads, and other features etched from copper sheets laminated onto a non-conductive substrate.

Revision history

Revision history

Document version	Date of release	Description of changes
Rev. 1.00	2026-01-26	Initial release

Trademarks

All referenced product or service names and trademarks are the property of their respective owners.

Edition 2026-01-26

Published by

Infineon Technologies AG

81726 Munich, Germany

© 2026 Infineon Technologies AG

All Rights Reserved.

Do you have a question about any aspect of this document?

Email: erratum@infineon.com

Document reference

IFX-kpp1767783992477

Important notice

The information contained in this application note is given as a hint for the implementation of the product only and shall in no event be regarded as a description or warranty of a certain functionality, condition or quality of the product. Before implementation of the product, the recipient of this application note must verify any function and other technical information given herein in the real application. Infineon Technologies hereby disclaims any and all warranties and liabilities of any kind (including without limitation warranties of non-infringement of intellectual property rights of any third party) with respect to any and all information given in this application note.

The data contained in this document is exclusively intended for technically trained staff. It is the responsibility of customer's technical departments to evaluate the suitability of the product for the intended application and the completeness of the product information given in this document with respect to such application.

Warnings

Due to technical requirements products may contain dangerous substances. For information on the types in question please contact your nearest Infineon Technologies office.

Except as otherwise explicitly approved by Infineon Technologies in a written document signed by authorized representatives of Infineon Technologies, Infineon Technologies' products may not be used in any applications where a failure of the product or any consequences of the use thereof can reasonably be expected to result in personal injury.