THE DATASHEET OF

STMPRIMER-PROTO

STM8L-PRIMER
STM32-PRIMER STMPRIMER

Raisonance STM32 and STM8 Primers
for fun, easy evaluation and development with STM32 and STM8

Data brief

Features

The versatile EvoPrimer range includes:

- In-circuit debugging/programming via dedicated USB connection to the host PC
- Evaluation features including USB connector and MEMs sensor
- Comprehensive development software
- Ergonomic design
- MEMs-based controls
- Touchscreen TFT display, color LCD
- Joystick
- Audio circuit/Jack
- MEMS accelerometer
- Li-Ion battery with charge management circuit
- Micro SD Card™ connector
- Add-on connector for extension boards with USART, SPI, I2C and analog/digital I/Os

STM8L ultralow power EvoPrimer features:

- STM8L152C6 MCU with 32 KB Flash
- Low power consumption
- LCD (7-segment)
- Temperature sensor
- Solar cells

STM32F105/107 EvoPrimer features:

- STM32F107VC MCU with 256 KB Flash
- Mini-USB OTG connector

STM32F103 EvoPrimer features:

- STM32F103VG MCU with 1 MB Flash
- Mini-USB connector

STM32F407/417 EvoPrimer features:

- STM32F407IG MCU with 1 MB Flash
- 1.3 M pixel image sensor
- 3-axis gyroscope
- 16 Mbits of SRAM
- STA529A audio-codec

EvoPrimer with STM8 or STM32

(STM8L-PRIMER, STM32-PRIMER, STMPRIMER)

- Mini-USB connector (HS, USB 2.0 OTG) and dual CAN connector

STM32F429/439 EvoPrimer features:

- STM32F429ZI MCU with 2 MB Flash
- 2 MB SDRAM

STM32L ultralow power EvoPrimer features:

- STM32L152VB MCU with 128 KB Flash
- LCD (14-segment)
- Temperature and pressure sensors
- Solar cells and Li-ion battery

Inertial sensor extension board features:

- 3-axis gyroscope
- Pressure and temperature sensor
- Magnetometer and accelerometer

Table 1. Device summary

Part number	Order code
STM32-PRIMER	STM3242IPRIMER STM3240GPRIMER STM3210GPRIMER STM3210CPRIMER STM32L15PRIMER
STM8L-PRIMER	STM8L1526PRIMER
STMPRIMER (accessor es)	STM3242IPRIM-D STM3240GPRIM-D STM3210GPRIM-D STM3210CPRIM-D STM32L15PRIM-D STM8L1526PRIM-D STMPRIMER-PROTO STMPRIMER-BASE STMPRIMER-EXT

For fur her informa ion contact your local STMicroelectronics sales office. www.st.com

1 Description

Raisonance's Primers are a uniquely fun, easy, low-risk solution for exploring, evaluating and developing applications for the STM32 and STM8 microcontrollers. They include everything that users need to better understand the STM32/STM8's peripheral implementation and operation.

The EvoPrimer range is an enhancement of the original Primer1 and Primer2 devices. It offers even more flexibility to evaluate a range of STM32 microcontrollers and STM8L ultralow power line microcontrollers, using the same EvoPrimer base with interchangeable target boards (to test different microcontrollers) or extension boards.

The EvoPrimer base has a removable transparent cover and USB cable which includes features such as the debugging/programming interface and most of the hardware features that you need to evaluate the capabilities of the target MCU. The base can also be extended by using its add-on connector to add components and circuitry.

The EvoPrimer target board(s) include the target MCU and may also include additional hardware features for target MCU evaluation.

The Primers can be purchased as complete evaluation tools, which can then be modified by purchasing an accessory, or they can be created from the interchangeable accessories:

The complete evaluation tools for the STM8L and STM32 microcontroller families consist of an EvoPrimer base with the relevant EvoPrimer target board.

The EvoPrimer accessories permit the EvoPrimer base and EvoPrimer target boards (and extension boards) to be ordered separately.

Figure 1. EvoPrimer base

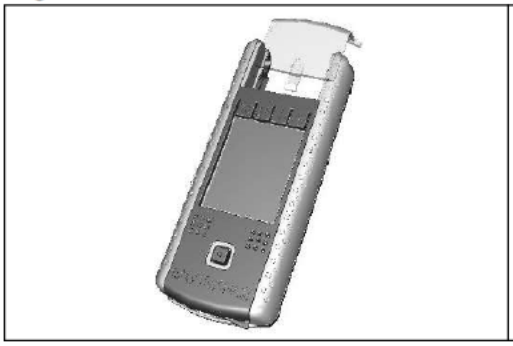
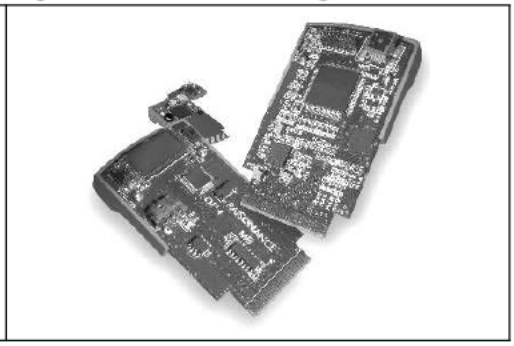


Figure 2. EvoPrimer target boards



2 Primer usage

Power up

If your EvoPrimer base and the target board are not connected, simply insert the target board into the EvoPrimer base, switch on the power switch and slide the transparent cover in place.

Press the joystick to power up the complete EvoPrimer and plug it directly into a host PC's USB port for in-circuit debugging and device programming.

Note: EvoPrimer bases are charged in the factory to ensure minimum operation upon reception. The battery needs charging as soon as possible via the EvoPrimer base's debug USB port.

Play

Start exploring the power of the STM32/STM8 by playing with the included applications. The base drives the fun, ergonomic hardware platform that combines a TFT graphical display with MEMs-based controls plus a tactile screen and joystick for navigating and controlling the GUI and game applications.

The Primers enable you to discover, edit and fine tune applications using Raisonance's Ride7 software toolset which drives the hardware and offers a full range of project management, source code editing and debugging features from an intuitive GUI.

The Primers can operate in standalone mode powered by a battery with power management circuit which is recharged via the USB connection to a host PC.

When the STM8L or STM32L EvoPrimer target boards are disconnected from the base, they have the unique feature of being able to run off their own battery which is recharged by their solar cells. They can use this feature to operate as a standalone temperature sensor application!

More resources

You can develop applications using sample applications from Raisonance or other engineers at *www.mcu-circle.com* as the starting point for new innovations. All the preloaded sample applications, new applications and the CircleOS task scheduler can be downloaded for free from the mcu-circle web site. This Primer dedicated internet site also provides FAQ, user forums, links to development resources and much more.

Note: Raisonance's Ride7 supports the STM32, STR7/9, STM8 and ST7 microcontroller families. For details about available compilers and special features for each family, refer to the STMicroelectronics microcontroller support site on www.st.com.

3 Development software

The **EvoPrimers** require that the most recent version of the following software (for compiling, programming and debugging) is downloaded from the mcu-circle web site:

Ride7 development software toolset with an intuitive GUI for:

- Project manager
- Source code editor
- High-level language debugger

A compiler:

- GNU C/C++ compiler, no code size limitations (STM32)
- Raisonance C compiler (STM8), free version up to 2 Kbytes code (Effective Date: April 1st, 2013).

CircleOS task scheduler for dynamic loading and management of new applications.

C source code for all sample applications and libraries including:

- MEMs (GUI application controls)
- TFT display (touchscreen, graphical interface, games, bitmap converter)
- Audio record and playback (Primer2 and EvoPrimers)

Complete documentation is provided with the software installation.

For more software and ideas, take a look at the dedicated online community and resources at *www.stm8circle.com* and *www.stm32circle.com*.

4 Ordering information

The Primers are available from the STMicroelectronics sales offices and distributors. For more information and complete documentation please visit *www.mcu-circle.com* or the STMicroelectronics microcontroller support site *www.st.com*.

Table 2. Order codes

Order code	Description			
	Base	Target MCU	Flash	Notes
Complete evaluation tool - includes base + target board				
STM3242IPRIMER	EvoPrimer	STM32F429ZI	2 MB	
STM3240GPRIMER	EvoPrimer	STM32F407IG	1 MB	
STM3210GPRIMER	EvoPrimer	STM32F103VG	1 MB	
STM3210CPRIMER	EvoPrimer	STM32F107VC	256 KB	
STM32L15PRIMER	EvoPrimer	STM32L152VB	128 KB	
STM8L1526PRIMER	EvoPrimer	STM8L152C6	32 KB	
STMPRIMER accessories				
STM3242IPRIM-D	N/A	STM32F429ZI	1 MB	MCU target board(1)
STM3240GPRIM-D	N/A	STM32F407IG	1 MB	MCU target board(1)
STM3210GPRIM-D	N/A	STM32F103VG	1 MB	MCU target board(1)
STM3210CPRIM-D	N/A	STM32F107VC	256 KB	MCU target board(1)
STM32L15PRIM-D	N/A	STM32L152VB	128 KB	MCU target board(1)
STM8L1526PRIM-D	N/A	STM8L152C6	32 KB	MCU target board(1)
STMPRIMER-PROTO	N/A	Prototype	N/A	5 prototyping extension boards(1)
STMPRIMER-BASE	EvoPrimer	N/A	N/A	EvoPrimer base for use with EvoPrimer MCU target boards and extension boards.
STMPRIMER-EXT	N/A	N/A	N/A	Inertial sensor extension board(1)

1. For use with the EvoPrimer base which can be either ordered separately (STMPRIMER-BASE) or be part of an complete evaluation tool.

5 Revision history

Table 3. Document revision history

Date	Revision	Changes
26-Sep-2007	1	Initial release.
30-Oct-2008	2	Added the STM3210E-PRIMER details.
21-Jun-2010	3	Added EvoPrimer details. Removed Primer1 and Primer2 details as they are replaced by the STM32F performance line EvoPrimer.
15-Jul-2010	4	Changed STM8L-PRIMER order code.
13-Dec-2010	5	Removed Primer1 and Primer2 as well as STM3210E-PRIMER and STM3210B-PRIMER. Updated *Features* to mention MCU for STM8L and STM32F EvoPrimer.
27-Sep-2011	6	Replaced STM3210EPRIMER and STM3210EPRIM-D with STM3210GPRIMER and STM3210GPRIM-D and updated *Development software*. Updated *Table 1* and *Table 2*.
07-Nov-2011	7	Added STMPRIMER-EXT in *Table 1* and *Table 2* and corresponding features on the cover page. Updated *Note 1* in *Table 2*. Renamed STM8L and STM32L EnergyLite devices to STM8L and STM32L utlralow power devices. Updated links to online community and resources in *Section 3: Development software*.
29-Nov-2011	8	Added STM3240GPRIMER and STM3240GPRIM-D in *Table 1* and *Table 2*. Updated *Features* to include STM32F high-performance and DSP EvoPrimer features.
16-Apr-2013	9	Updated note in *More resources* and information on Raisonance C compiler (STM8) in *Development software*.
14-Oct-2013	10	Edited feature lines for STM32F105/107, STM32F103, STM32F407/417 and STM32F429/439 lines. Added STM3242IPRIMER and STM3242IPRIMER-D ordering codes to *Table 1: Device summary* (and note (1) removed), and to *Table 2: Order codes*.

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