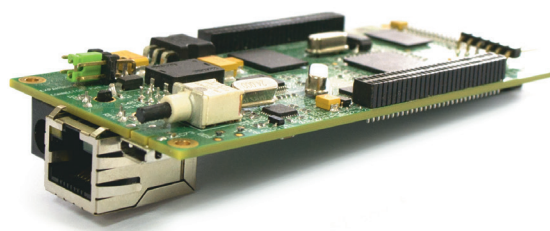


Universal processor module **UPM STM32F429**

Universal processor module UPM STM32F429 is designed for use as part of user-developed devices and to provide management of these devices through various control interfaces and to provide interaction of these devices with a PC via Ethernet or USB 2.0 HS interface.

Used as a control device:

- In the installation check device
- In all varieties of noise generator modules
- High voltage switches 3500DC / 2500AC
- In all varieties of programmable power supplies
- In blocks of simulation of solar cells
- In the control panel during engine tests to determine the status of switching elements and control indications
- In microwave modules Up / Down converter



The module is manufactured in 2 versions:

- Complete set option
- Option without Ethernet, USB, RGB LCD, Power 5V connector (this embodiment is intended for use as an embedded control controller)

Specifications

<p>CPU:</p> <ul style="list-style-type: none">• Processor Type - STM32F429NIH6 (ST manufacturer)• Processor Core - ARM 32-bit Cortex TM -M4 CPU with FPU• CPU frequency - up to 180 MHz• Processor Performance - 225 DMIPS / 1.25 DMIPS / MHz (Dhrystone 2.1)• Support for floating point instructions and DSP• Adaptive real-time accelerator (ART Accelerator TM), which ensures the execution of programs from the built-in Flash-memory without waiting cycles• Internal processor memory - 2 MB Flash and 256 + 4 KB SRAM	<p>Module memory chips:</p> <ul style="list-style-type: none">• Memory Type - NOR Flash ROM and SDRAM RAM• The amount of external memory NOR Flash for the processor is 16Mx16 bit (256Mb)• The amount of external SDRAM for the processor is 4Mx32 bit (128Mb) <p>Ethernet module interface:</p> <ul style="list-style-type: none">• Interface Type - 10Base-TX / 100Base-TX• Interface speed - 10/100 Mb / s• Support for Auto-MDIX mode (with automatic detection of the desired type of patch cable and setting up the appropriate connections, eliminating the need for cross-connect cables)• Number of channels 1• ETHERNET Connector Type RJ45
<p>USB module interface:</p> <ul style="list-style-type: none">• Interface Type - USB 2.0 OTG• Mode - High Speed (supports full speed)• Interface speed - 480 Mb / s• Number of channels 1• Micro-AB USB Connector	<p>Interface of the RGB LCD module for connecting a color TFT LCD panel with touchscreen:</p> <ul style="list-style-type: none">• 24-bit RGB• The presence of horizontal and vertical synchronization, LCD CLK• Interaction with a chip that determines the coordinates of X and Y touchscreen via I2C• Connector Socket SLM-125-01-G-D
<p>The technological interface of the module for loading and debugging application software:</p> <ul style="list-style-type: none">• Interface Type - SWD <p>The interface of the Flexible memory controller (FMC) module "EXPANSION BOARD 1" for controlling a user device:</p> <ul style="list-style-type: none">• 16 bit address bus• 32 bit data bus• Ability to work with three individually programmable memory areas;• Ability to programmatically configure the mode of multiplexing information on the data bus for each of the three memory areas, in which on the data bus for the address strobe signal there is address bus information;• Ability to programmatically set the time diagram of interaction via the FMC interface for each of the three memory areas;• NWAIT signal support for extended bus cycles;• 3.3 V interface signal levels LVCMOS• Connector Socket SLM-130-01-G-D	<p>Interface of the EXPANSION BOARD 2 module (a set of various standard interfaces) for controlling a user device:</p> <ul style="list-style-type: none">• Individual program setting of the function used for each contact of the interface• Ability to use up to 52 GPIO I / O ports• Ability to use up to 2 I2C interfaces• Ability to use up to 3 SPI interfaces• Ability to use up to 4 USART interfaces• Ability to use up to 2 CAN interfaces• Ability to use up to the 1st SDIO interface for interaction with the user's SD Card• The ability to measure the voltage of the analog signals of the user of the ADC (12 bit 2.4 MSPS) built into the processor• The ability to issue voltage analog signals to the user from the DAC (12 bit), integrated into the processor• 3.3 V digital interface levels LVCMOS• Connector Socket SLM-130-01-G-D