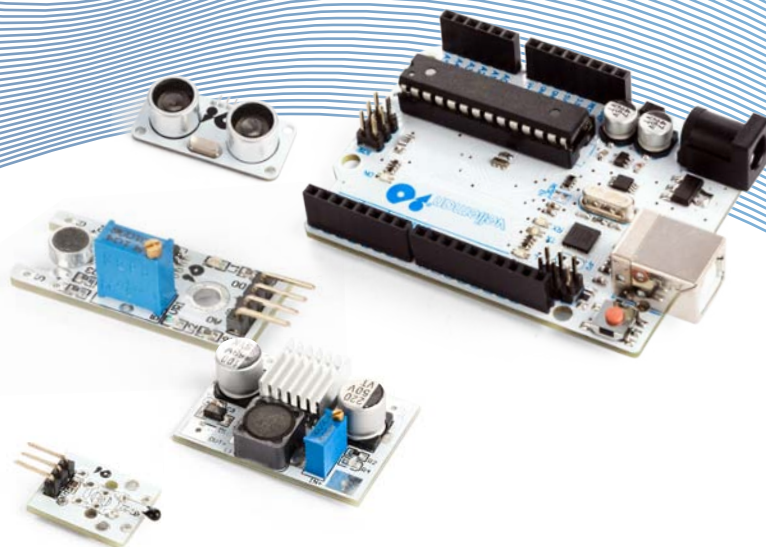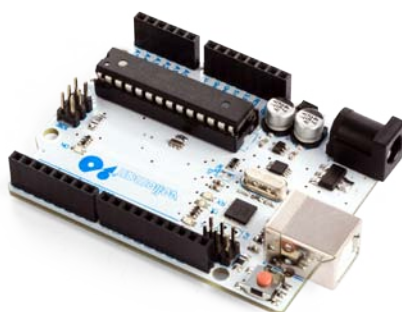# DEVELOPMENT BOARDS AND ACCESSORIES

Made for Genuino | ARDUINO

Velleman®

ATMEGA328 UNO DEVELOPMENT BOARD

The VMA100 is the perfect development board if you want to create your own projects. It is built around an ATmega 328 microcontroller and comes with multiple outputs: 14 digital input/output pins, 6 analog inputs, ICSP-header, USB connection and a power jack. If these outputs are not enough, there are lots of shields you can use to extend the board's possibilities or outputs. You can program the board with a graphical user interface. This system is freely available for download and is also easy to understand for beginners.
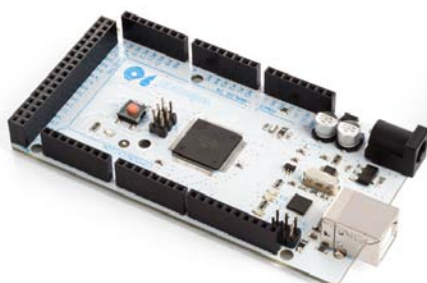
VMA100
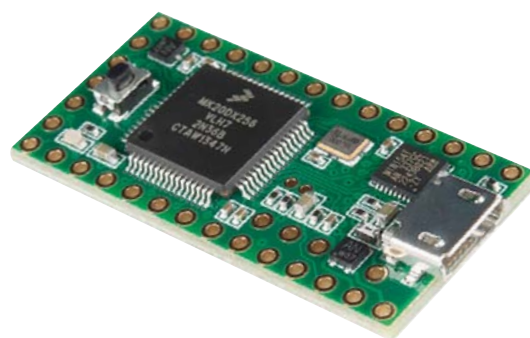
TEENSY V3.2 - 32 BIT ARDUINO COMPATIBLE MICROCONTROLLER BOARD

De Teensy is a small development board with lots of features. You can use your own editor in C to create programs or use Arduino sketches if you prefer.

TEENSY3.2

ATMEGA2560 MEGA DEVELOPMENT BOARD

VMA101 is a development board based on the ATmega2560 microcontroller.

The board has 54 digital input/output pins, 16 analog inputs, 4 UARTs, a 16 MHz crystal oscillator, a USB connection, a power jack, an ICSP header and a reset button. You can connect the board to your computer using a USB cable or power it with an adapter.
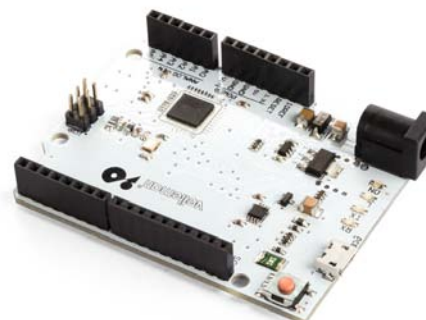
VMA101
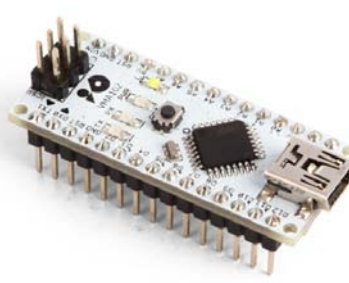
ATMEGA328 NANO DEVELOPMENT BOARD

The tiny Nano board is especially designed for breadboards and very handy to just try out new ideas and projects.

While small in size, its functions are similar to those of the VMA100 thanks to the powerful ATmega328 microcontroller, which is already featured on several other boards. Use a mini-USB cable for power supply and data transfer to the microcontroller.

VMA102

ATMEGA32U4 LEONARDO DEVELOPMENT BOARD

Thanks to the VMA103's integrated USB, you have access to several code libraries. Ideal for projects requiring the board to behave as a keyboard, mouse or any other USB HID device.

The board has 20 digital input/output pins, a 16 MHz crystal oscillator, a micro USB connection, a power jack, an ICSP header and a reset button. Just use a USB cable to connect the board to your computer.

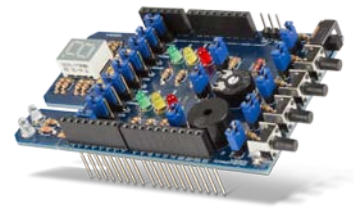**VMA103**

Arduino®

Shields

I/O SHIELD FOR ARDUINO®
VMA05

ETHERNET SHIELD FOR ARDUINO®
VMA04

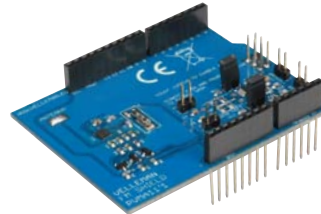**MOTOR & POWER SHIELD FOR ARDUINO®**
VMA03

STEM SHIELD FOR ARDUINO
KAEU

AUDIO SHIELD FOR ARDUINO®
VMA02

RGB SHIELD FOR ARDUINO®
VMA01

STEREO FM RADIO SHIELD FOR ARDUINO®
VMA11
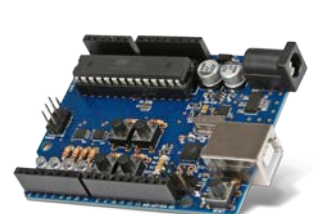
VELLEMAN NIBBLE KIT
KA0
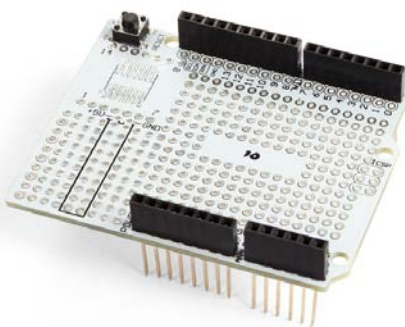
ARDUINO® COMPATIBLE EXPANSION BOARD FOR ARDUINO® UNO R3
VMA200

LCD & KEYPAD SHIELD FOR ARDUINO® - LCD1602
VMA203
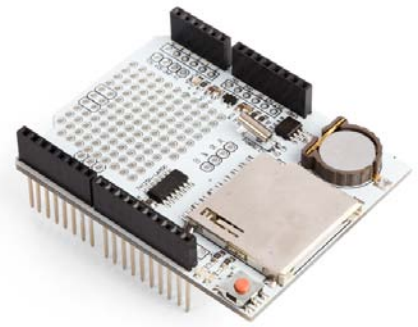
ARDUINO® COMPATIBLE DATA LOGGING SHIELD
VMA202

3-AXIS DIGITAL ACCELERATION SENSOR MODULE - MMA7455

It has the following features.
Wide input voltage range • Digital output (SPI/I2C) • Selectable sensitivity: 8-bit mode (±2g/±4g/±8g) or 10-bit mode (±8g) • User-configurable interrupts (INT1/INT2) • User-settable registers for calibrating each axis • Low current operation • Compact, 8-pin DIP breadboard-friendly package:12.7 x 15.2 mm
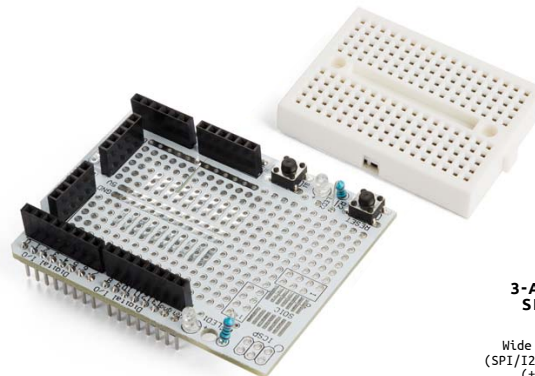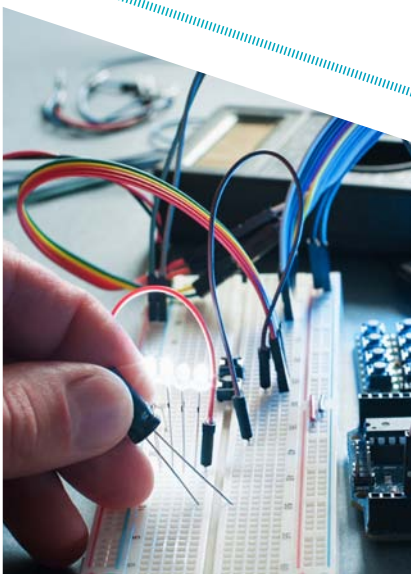
PROTOSHIELD PROTOTYPING BOARD WITH MINI BREADBOARD FOR ARDUINO® UNO
VMA201

VMA204

Arduino®

Accessories

ULTRA-COMPACT SWITCHING POWER SUPPLY 9 VDC / 1.9 A
PSS0919

UNIVERSAL POWER SUPPLY 12 VDC - 2 A - 24 W PLUG 2.1 X 5.5 MM
PSSE1220

LM2577 DC-DC VOLTAGE STEP-UP (BOOST) MODULE
VMA402

DC-DC BOOST MODULE/ (2.5 V-5 V) 600 MA TO USB 5 V (2 PCS)
VMA403

DC-DC ADJUSTABLE VOLTAGE STEP DOWN MODULE LM2596S
VMA404

ARDUINO® COMPATIBLE RFID READ AND WRITE MODULE

The MFRC-522 is embedded in pretty much every phone or device that does NFC. It can read and write to tags and cards, communicate with phones, and 'act' like a NFC tag. If you want to do any sort of embedded NFC work, this is the chip you'll want to use!
VMA405

ARDUINO® COMPATIBLE 5 V RELAY MODULE
VMA406

3.3 V / 5 V TTL LOGIC LEVEL CONVERTER MODULE
VMA410

SUPER-MINI DIGITAL AMPLIFIER BOARD
VMA408

ATMEGA328P MCU IC WITH ARDUINO® UNO BOOTLOADER AND 16 MHZ CRYSTAL

An ATmega328P microcontroller for you to build your very own customised Arduino compatible projects. It comes with the Arduino Uno bootloader pre-installed. Includes 16 MHz crystal oscillator.
VMA416

ARDUINO® COMPATIBLE MOS DRIVING MODULE

This MOS driver module accepts Pulse Width Modulated (PWM) input to drive 24VDC loads. Making it perfect for many projects such as lighting, dc motors, pumps and solenoids.
VMA411

4 CHANNEL RELAY MODULE

This board can control various high current appliances. 4 relay outputs. Direct control through 5 VDC signal. Relay output 250 VAC 10 A. Attaches easily with screw clamps
VMA400

L298N DUAL BRIDGE DC STEPPER CONTROLLER BOARD

The L298 Stepper Controller makes it easy to drive either two DC motors or a bipolar stepper motor. This is a very compact board for designs where space really matters.
VMA409

2.8 INCH TOUCH SCREEN FOR ARDUINO® UNO/MEGA

Add a beautiful touch screen to your project with this 2.8" display and a microSD slot on a shield. The shield comes completely assembled, tested and ready to use. No cables, no soldering required. Just plug in the shield, load the library and your display will be up and running in less than 10 minutes!
VMA412

40 PINS 30 CM MALE TO MALE JUMPER WIRE (FLAT CABLE)
VMA413

40 PINS 30 CM MALE TO FEMALE JUMPER WIRE (FLAT CABLE)
VMA414

40 PINS 30 CM FEMALE TO FEMALE JUMPER WIRE (FLAT CABLE)
VMA415

5 VDC STEPPER MOTOR WITH ULN2003 DRIVER BOARD

High quality stepper motor with ULN2003 driver. Suitable for microcontroller. Operating voltage: 5 VDC. Diameter: 28 mm. Step Angle: 5.625 x 1/64. Reduction ratio: 1/64
VMA401

ARDUINO® COMPATIBLE PHOTOSENSITIVE SENSOR MODULE WITH 3 PIN CABLE
VMA407

Interfaces

Arduino®

Arduino®

Sensors

ARDUINO® COMPATIBLE SOIL MOISTURE SENSOR + WATER LEVEL SENSOR MODULE
VMA303

ARDUINO® COMPATIBLE TACTILE SWITCH SENSOR MODULE (2 PCS)
VMA310

ARDUINO® COMPATIBLE RGB LED MODULE (2 PCS)
VMA307

ARDUINO® COMPATIBLE MINI MAGNETIC REED MODULE (2 PCS)
VMA308

ARDUINO® COMPATIBLE MICROPHONE SOUND SENSOR MODULE
VMA309

PIR MOTION SENSOR FOR ARDUINO®
VMA314

XY JOYSTICK MODULE (2 PCS)
VMA315

ARDUINO® COMPATIBLE INFRARED TRANSMITTER MODULE (2 PCS)
VMA316

ARDUINO® COMPATIBLE 1838 IR INFRARED 37.9 kHz RECEIVER (2 PCS)
VMA317

ARDUINO® COMPATIBLE 3 COLOUR RGB SMD LED MODULE (2 PCS)
VMA318

ARDUINO® COMPATIBLE ACTIVE BUZZER MODULE (2 PCS)
VMA319

ARDUINO® COMPATIBLE ANALOGUE TEMPERATURE SENSOR MODULE (2 PCS)
VMA320

HC-SR05 ULTRASONIC SENSOR

Ultrasonic sensors overcome many of the weaknesses of IR sensors - they provide distance measurement regardless of color and lighting of obstacles. VMA306 with the HC-SR05 sensor is an upgrade from the lower precision HC-SR04. This has 5 pins and can be used in 1-pin trigger/echo or 2-pin.

VMA306

DHT11 DIGITAL TEMPERATURE HUMIDITY SENSOR MODULE FOR ARDUINO®

The DHT11 is a very popular, low cost digital temperature and humidity sensor. It uses a capacitive humidity sensor and a thermistor to measure the surrounding air temperature. The sensor sends out new data once every 2 seconds.

VMA311

SD CARD LOGGING SHIELD FOR ARDUINO® (2 PCS)

This shield will prove useful for data logging with your Arduino. Can be easily assembled and customised for any data logging project.

The SD card interface works with FAT16 and FAT32 formatted cards. Real time clock (RTC) keeps the time going even when the Arduino is unplugged. Prototyping area for soldering connectors, circuitry or sensors.

VMA304

3 X 4 MATRIX MEMBRANE KEYPAD

This keypad has 12 buttons, arranged in a telephone-line 3x4 grid. It's made of a thin, flexible membrane material with an adhesive backing so you can attach it to nearly anything. Comes with a 7-pin header strip so you can plug this into a breadboard with ease.

VMA300

BLUETOOTH HC-05 TRANSMISSION MODULE

The HC-05 bluetooth module is one of the most popular bluetooth modules used in embedded projects.

It can be easily interfaced with Arduino Boards, Raspberry Pi or other microcontrollers through the serial UART interface.

VMA302

DS1302 REAL-TIME CLOCK MODULE WITH BATTERY CR2032 (2 PCS)

The real time clock module provides seconds, minutes, hours, days, date, months, and year information. It communicates with a microprocessor via an I2C interface and has a battery backup.

VMA301

1 A LITHIUM BATTERY CHARGING BOARD (2 PCS)
VMA321

ARDUINO® COMPATIBLE HALL (HOLZER) MAGNETIC SWITCH MODULE (2 PCS)

The VMA313 Hall magnetic sensor module is a switch that will turn on/off in the presence of a magnetic field.

VMA313

CAPACITIVE TOUCH SENSOR SWITCH

The module is based on a touch-sensing IC capacitive touch switch module. In the normal state, the module output is low; When a finger touches the corresponding position, the module output goes high.

VMA305

ARDUINO® COMPATIBLE VIBRATION/ SHOCK SWITCH MODULE (2 PCS)

The VMA312 allows you to use an Arduino to detect impacts, shocks or shaking. When the switch detects a jolt, the output of the module is sent low.

VMA312
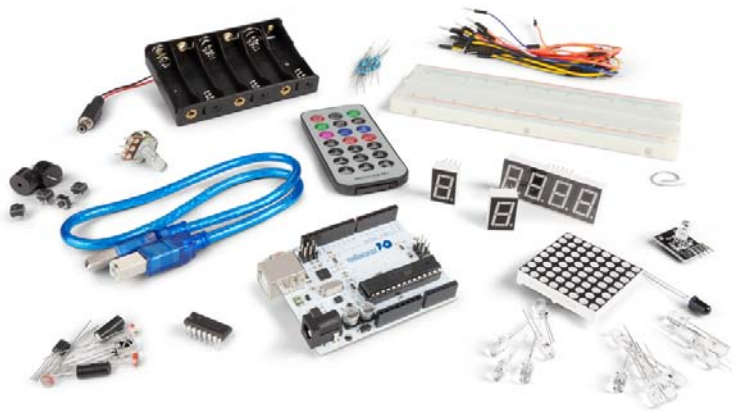
DIY STARTER KIT FOR ARDUINO®
VMA501

2 WHEEL DRIVE MOTOR CHASSIS ROBOTICS KIT
VMA500

BASIC DIY KIT WITH ATMEGA2560 FOR ARDUINO®
VMA502
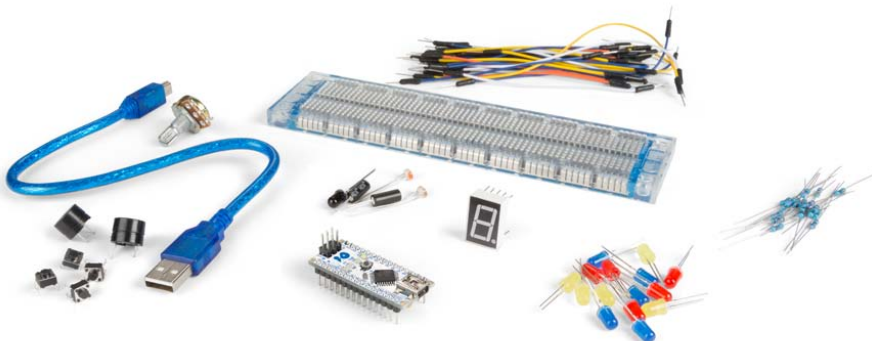
BASIC ARDUINO® COMPATIBLE EXPERIMENTER'S KIT
VMA504

ELECTRONIC PARTS PACK FOR ARDUINO®
VMA503

Starter kits

Arduino®
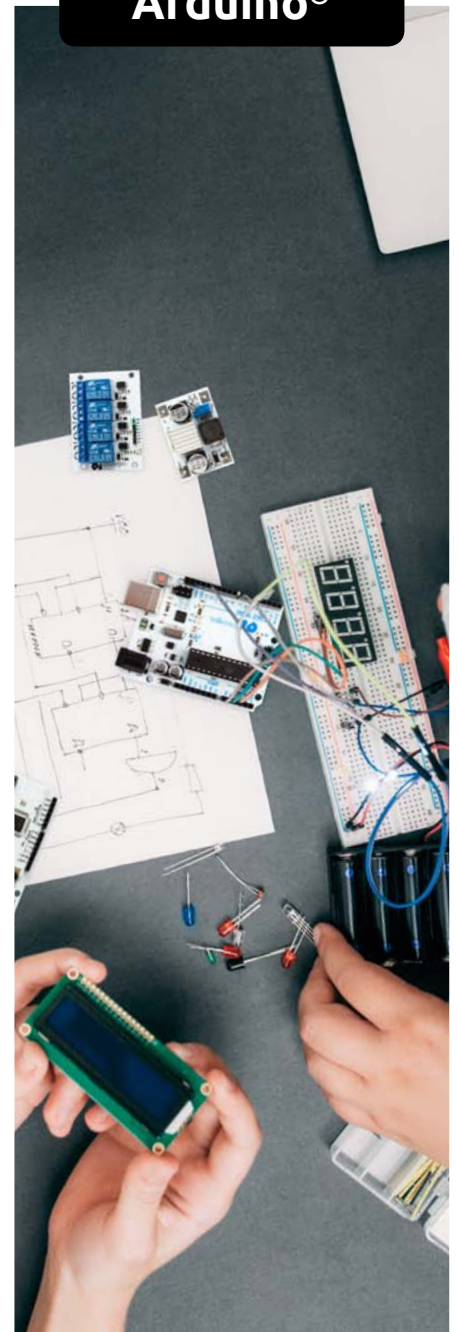
Raspberry Pi®

Kits

This box contains everything that is needed to get started with Raspberry Pi. Make your first steps with this kit!

RASPBERRY PI® 3B STARTER KIT

processor: 1.2 GHz quad core BCM2837 ARMv8 64 bit processor • connectivity: built-in WiFi (802.11B/G/N) and Bluetooth Low Energy (BLE) • RAM: 1 GB • GPU: VideoCore IV • USB: 4 x USB 2.0 ports • Ethernet: 10/100 Ethernet port • video output: full-size HDMI and composite • sound: L/R stereo line-out • operating system: microSD card to load and store OS • digital interfaces: 1 x CSI camera port and 1 x DSI display port • GPIO: 40 general purpose input/output pins • power: requires 5 V 2.4 A USB power supply

PI3SET

Raspberry Pi®

Accessories

HIGH SPEED HDMI® 2.0 WITH ETHERNET HDMI PLUG TO HDMI PLUG CABLE - 1.5 m
PAC415B015

FTP NETWORK CABLE, SHIELDED RJ45, CAT 5E (100MBPS) - 1 m
CW101

USB 2.0 A PLUG TO USB 2.0 A PLUG 1.8 m
PAC600B018N

COMPACT CHARGER WITH MICRO-USB CONNECTOR 5 VDC - 2 A - 10 W
PSSEUSB25B

RASPBERRY PI CAMERA CASE
TKCAMW - WHITE
TKCAMB - BLACK

RASPBERRY PI B+ CASE
TKBERRYWB - WHITE
TKBERRYBB - BLACK

RASPBERRY PI B+ CAMERA CASE
TKCAMWB - WHITE
TKCAMBB - BLACK

RASPBERRY PI B CASE FOR RASPBERRY PI B+, 2B AND 3B
PICASE1W - WHITE / PICASE1C - CLEAR
PICASE1B - BLACK

HOUSING FOR RASPBERRY PI 2 & MODEL B+
TKBERRY2B

General accessories

ASSORTED JUMPER WIRE SET (350 PCS)
WJW350

ASSORTED JUMPER WIRE SET (140PCS)
WJW70

SOLDERLESS BREADBOARD 830 HOLES + JUMPER WIRES - 140 PCS
VTBB1

MINI BREADBOARD AND JUMPER WIRE PACK
SD09N

RESISTOR TRIMMER SET
K/TRIMSET1

TRANSISTOR SET
K/TRANS1

SET OF 480 RESISTORS (E3-SERIES)
K/RES-E3

SET OF 610 RESISTORS (E12-SERIES)
K/RES-E12

SET OF 80 ASSORTED LEDS
K/LED1

SET OF 120 DIODES
K/DIODE1

ELECTROLYTIC CAPACITOR SET
K/CAP2

CERAMIC CAPACITOR SET
K/CAP1

SMD "E12" RESISTORS SET - 0603
K/RES0603

SMD STORAGE BOX
SMDBOX14
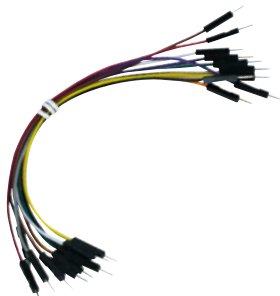
SET AWG BREADBOARD JUMPER WIRES - ONE PIN MALE TO MALE - 5.9" (15 CM) (10 PCS)
WJW004

SET AWG BREADBOARD JUMPER WIRES - ONE PIN MALE TO FEMALE - 5.9" (15 CM) (10 PCS)
WJW005

SET AWG BREADBOARD JUMPER WIRES - ONE PIN FEMALE TO FEMALE - 5.9" (15 CM) (10PCS)
WJW006

SET AWG JUMPER WIRES ONE PIN MALE TO MALE (65 PCS)
WJW009

Technical product list

VMA100

ATMEGA328 UNO DEVELOPMENT BOARD

microcontroller: ATmega328 • operating voltage: 5 VDC • input voltage (recommended): 7-12 VDC • input voltage (limits): 6-20 VDC • digital I/O pins: 14 (of which 6 provide PWM output) • analogue input pins: 6 • DC current per I/O pin: 40 mA • DC current for 3.3 V pin: 50 mA • flash memory: 32 kB (ATmega328) of which 0.5 kB used by bootloader • SRAM: 2 kB (ATmega328) • EEPROM: 1 kB (ATmega328) • clock speed: 16 MHz • length: 68.6 mm • width: 53.4 mm • weight: 25 g • 100% compatible with Arduino® UNO

VMA101

ATMEGA2560 MEGA DEVELOPMENT BOARD

microcontroller: ATmega2560 • operating voltage: 5 VDC • input voltage (recommended): 7-12 VDC • input voltage (limits): 6-20 VDC • digital I/O pins: 54 (of which 15 provide PWM output) • analogue input pins: 16 • DC current per I/O pin: 40 mA • DC current for 3.3 V pin: 50 mA • flash memory: 256 kB of which 8 kB used by bootloader • SRAM: 8 kB • EEPROM: 4 kB • clock speed: 16 MHz • length: 112 mm • width: 55 mm • weight: 62 g • 100% compatible with Arduino® MEGA2560

VMA102

ATMEGA328 NANO DEVELOPMENT BOARD

microcontroller: Atmel ATmega168 or ATmega328 • operating voltage: 5 VDC • input voltage (recommended): 7-12 VDC • input voltage (limits): 6-20 VDC • digital I/O pins: 14 (of which 6 provide PWM output) • analogue input pins: 8 • DC current per I/O pin: 40 mA • flash memory: 16 kB (ATmega168) or 32 kB (ATmega328) • SRAM: 1 kB (ATmega168) or 2 kB (ATmega328) • EEPROM: 512 bytes (ATmega168) or 1 kB (ATmega328) • clock speed: 16 MHz • length: 45 mm • width: 18 mm • weight: 5 g • 100% compatible with Arduino® NANO 3.0

VMA103

ATMEGA32U4 LEONARDO DEVELOPMENT BOARD

microcontroller: ATmega32u4 • operating voltage: 5 VDC • input voltage (recommended): 7-12 VDC • input voltage (limits): 6-20 VDC • digital I/O pins: 20 • analogue input pins: 12 • PWM channels: 7 • DC current per I/O pin: 40 mA • DC current for 3.3 V pin: 50 mA • flash memory: 32 kB (ATmega32u4) of which 4 kB used by bootloader • SRAM: 2.5 kB (ATmega32u4) • EEPROM: 1 kB (ATmega32u4) • clock speed: 16 MHz • length: 68.6 mm • width: 53.3 mm • weight: 20 g • 100% compatible with Arduino® LEONARDO

VMA200

ARDUINO® COMPATIBLE EXPANSION BOARD FOR ARDUINO® UNO R3

dimensions: 68 x 53 x 12 mm • with reset button • SOIC-14 breakout for surface mounted devices

VMA201

PROTOSHIELD PROTOTYPING BOARD WITH MINI BREADBOARD FOR ARDUINO® UNO

1.0 Arduino Pinout • reset button • free to use button + LED circuit • ICSP connector location • 14 pin SMD footprint • 20 pin through-hole footprint • 170 holes self-adhesive breadboard included • compatible with: Leonardo, Uno, Mega, Classic

VMA202

ARDUINO® COMPATIBLE DATA LOGGING SHIELD

back-up battery: CR1220 battery (incl.) • dimensions: 43 x 17 x 9 mm • stackable headers • reset button • prototyping area (102 solder pads) for soldering connectors, circuitry or sensors • back-up battery for RTC included • uses the Arduino SD and RTC libraries • with onboard 3.3 V regulator to run SD cards that require a lot of power

VMA203

LCD & KEYPAD SHIELD FOR ARDUINO® - LCD1602

dimensions: 80 x 58 x 20 mm • blue background / white backlight • screen contrast adjustment • uses 4 bit Arduino LCD library • reset button • the Up, Down, Left, Right buttons use only one analogue input

VMA204

3-AXIS DIGITAL ACCELERATION SENSOR MODULE - MMA7455

IIC / SPI and interfaces • Z-axis self calibration • 2.4 V - 3.6 V operation (onboard regulator; module operates from 5 V) • programmable threshold interrupt output • level detection for motion recognition (shock, shock & move, free fall) • pulse detection for single pulse or double pulse recognition • sensitivity: 64 LSB/g @ 2 g, @ 8 g in 10-bit mode • selectable sensitivity (± 2 g, ± 4 g, ± 8 g) for 8-bit mode

VMA300

3 X 4 MATRIX MEMBRANE KEYPAD

dimensions: 7 x 7.7 x 0.1 cm • connection: 3 col - 4 row, 7 pin connection • cable length: 9 cm • weight: 6.25 g • library: keypad.h •

VMA301

DS1302 REAL-TIME CLOCK MODULE / WITH BATTERY CR2032 (2 PCS)

• manages all timekeeping functions: real-time clock counts seconds, minutes, hours, date of the month, month, day of the week, and year with leap year • 31 x 8 battery-backed general-purpose RAM • simple serial port interfaces to most microcontrollers: simple 3-wire interface • TTL compatible: VCC = 5 V • single-byte or multiple-byte (burst mode) data transfer for read or write of clock or RAM data • low power operation extends battery backup run time: 2.0 V to 5.5 V full operation • uses less than 300 nA at 2.0 V • temperature range: 0°C to +70°C

VMA302

BLUETOOTH HC-05 TRANSMISSION MODULE

frequency: 2.45 GHz • asynchronous speed: max. 2.1 Mbps • security: authentication • profile: Bluetooth Serial Port • power supply: +3.3 VDC • working temperature: max. 60°C •

VMA303

ARDUINO® COMPATIBLE SOIL MOISTURE SENSOR + WATER LEVEL SENSOR MODULE
voltage: 5 VDC • dimensions: 65 x 20 mm • weight: 5 g •

VMA304

SD CARD LOGGING SHIELD FOR ARDUINO® (2 PCS)
voltage: 3.3 V - 5 V • protocol: SPI • dimensions: 52 x 30 x 12 mm • weight: 8 g • required library: SD.h •

VMA305

CAPACITIVE TOUCH SENSOR SWITCH
connection: 3 pins, GRD - VCC - Signal • voltage: 3 to 5 VDC • dimensions: 30 x 16 x 6 mm • weight: 5 g •

VMA306

HC-SR05 ULTRASONIC SENSOR
voltage: 4.5 to 5.5 VDC • sound frequency: 40 KHz • measurement resolution: 0.3 cm • measurement angle: 15 ° • supply current: 10 to 40 mA • trigger pin format: 10 uS pulse • connector: 5 pin male • detection distance: 2 to 450 cm • dimensions: 45 x 20 x 13 mm •

VMA307

ARDUINO® COMPATIBLE RGB LED MODULE (2 PCS)
voltage: 5 VDC • connection: 4 pin male header • pins: GND, RED, GREEN, BLUE • size: 24 x 16 x 16 mm • weight: 2 g •

VMA308

ARDUINO® COMPATIBLE MINI MAGNETIC REED MODULE (2 PCS)
voltage: 5 VDC • connection: 3 pins, +(middle pin), ground and DO (data out) • size: 25 x 15 mm • weight: 2 g •

VMA309

ARDUINO® COMPATIBLE MICROPHONE SOUND SENSOR MODULE
voltage: 3.3 to 5 VDC • outputs: one analogue + one digital output • fixation: 1 mounting screw hole 3 mm • 2 indicator LEDs: 1 power indicator + 1 comparator output indicator • frequency response: 50 Hz - 20 KHz • impedance: 2.2 K Ohm • sensitivity: 48 - 66 dB • operating temperature: -40 to +85°C • size: 44 x 15 x 10 mm • weight: 4 g •

VMA310

ARDUINO® COMPATIBLE TACTILE SWITCH SENSOR MODULE (2 PCS)
voltage: 5 VDC • connection: 3 pins, +(middle pin), ground and DO (data out) • size: 25 x 15 mm • weight: 2 g •

VMA311

DHT11 DIGITAL TEMPERATURE HUMIDITY SENSOR MODULE FOR ARDUINO®
voltage: 5 VDC • temperature range: 0 - 50 °C , error of +/- 2 °C • humidity: 20 - 90% RH +/- 5% RH error • interface: digital • size: 39 x 23 x 10 mm. •

VMA312

**ARDUINO® COMPATIBLE VIBRATION / SHOCK SWITCH MODULE (2 PCS)**
voltage: 5 VDC • connection: 3 pins, +(middle pin), ground and DO (data out) • size: 25 x 15 mm • weight: 2 g •

VMA313

ARDUINO® COMPATIBLE HALL (HOLZER) MAGNETIC SWITCH MODULE (2 PCS)
voltage: 5 VDC • connection: 3 pins, +(middle pin), ground and S (data out) • output (S): Schmitt Trigger, Active Low • activation: 30 Gauss • deactivation: 10 Gauss • LED indicator: ON when activated • size: 25 x 15 mm • weight: 2 g •
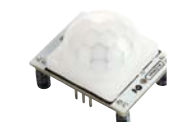
VMA314

PIR MOTION SENSOR FOR ARDUINO®
voltage: 5 VDC • connection: 3 pin: GND, VCC and OUT • adjustments: sensitivity and delay (by trimmer) • delay time: 0.3 to 18 s • output level: high = 3 V, Low = 0 V • max. sensor distance: 7 m • operating temperature: -15 to +70°C • detection angle: 120 ° • dimensions: 32 x 24 x 25 mm •

VMA315
XY JOYSTICK MODULE (2 PCS)

voltage: 3 to 5 VDC • contains: 2 trimmers 10K + 1 switch • dimensions: 47 x 25 x 32 mm • weight: 15 g •

VMA316
ARDUINO® COMPATIBLE INFRARED TRANSMITTER MODULE (2 PCS)

max. current: 20 mA • connection: 3 pins, only GND (-) and S is used • weight: 2 g • dimensions: 35 x 15 x 8 mm • Attention: There is no current limiting resistor on the module. •

VMA317
ARDUINO® COMPATIBLE 1838 IR INFRARED 37.9 KHZ RECEIVER (2 PCS)

supply voltage: 3 to 5 VDC • max. supply current: 1.5 mA • B.P.F. center frequency: 37.9 KHz • dimensions: 28 x 15 x 10 mm • photo detector and preamplifier in one package • internal filter for PCM frequency • inner shield, good anti-interference ability • high immunity against ambient light • improved shielding against electric field disturbance • 3.0 V or 5.0 V supply voltage; low power consumption • TTL and CMOS compatibility

VMA318
ARDUINO® COMPATIBLE 3 COLOUR RGB SMD LED MODULE (2 PCS)

power dissipation: R 60mW, G 95mW, B 95mW • Peak Forward Current (0,1ms Pulse Width): 100 mA for each colour • continous forward current: 25 mA for each LED • max. reverse voltage: 5 V • operating temperature: -40 °C to 80 °C • dimensions: 28 x 15 x 5 mm • common: cathode (-) • Attention: Current has to be limited by using resistors. •

VMA319
ARDUINO® COMPATIBLE ACTIVE BUZZER MODULE (2 PCS)

operating voltage: 5 VDC • buzzer frequency: 1.5 to 2.5 KHz • connection: 3 pin, (-) and (S). (+) is not used • dimensions: 25 x 15 x 10 mm •

VMA320
ARDUINO® COMPATIBLE ANALOGUE TEMPERATURE SENSOR MODULE (2 PCS)

NTC type: NTC-MF52 3950 • temperature range: -55 °C to 125 °C • accuracy: +/- 0.5°C • pull-up resistor: provided, 10 KOhm • connection: 3 pin, (+) 5V , (-) ground, (S) analogue output • dimensions: 20 x 15 x 5 mm •

VMA321
1 A LITHIUM BATTERY CHARGING BOARD (2 PCS)

input voltage: 4.5 to 5.5 VDC (by on-board USB connector) • charging current: 1 A adjustable • charge accuracy: 1.5 % • full charge voltage: 4.2 V • charge indicator: green = fully charged, red = charging • working temperature: -10°C to +80°C • weight: 10 g • dimensions: 25 x 19 x 10 mm •

VMA400
4 CHANNEL RELAY MODULE

control input current (in1 to in4): 15 - 20 mA • control input voltage: 5 - 12 VDC • relay output: 250 VAC 10 A; 30 VDC 10 A (non-inductive) • standard interface that can be controlled directly by any microcontroller • opto-isolated inputs • indicator LEDs for relay output status

VMA401
5 VDC STEPPER MOTOR WITH ULN2003 DRIVER BOARD

operating voltage: 5 VDC • steps / revolution: 64 • controller: ULN2003 • motor diameter: 28 mm • reduction ratio: 1:64 • number of phases: 4 • dimensions: 35 x 32 x 10 mm • with LED step indicators • included: 5 V stepper motor • ULN2003 controller module • cable

VMA402
LM2577 DC-DC VOLTAGE STEP-UP (BOOST) MODULE

input voltage: 3.5 to 35 VDC • output voltage: 5 to 55 VDC (adjustable) • max. input current: 3 A • Continous input current: 2 A • chip: LM2577 • dimensions: 43 x 30 x 12 mm •

VMA403
DC-DC BOOST MODULE / (2.5 V-5 V) 600 MA TO USB 5 V (2 PCS)

input voltage range: 2.5 to 5 VDC • output voltage: 5 VDC • connection: solder pads • dimensions: 34 x 16 x 8 mm •

VMA404
DC-DC ADJUSTABLE VOLTAGE STEP DOWN MODULE LM2596S

input voltage: 3 to 40 VDC • output voltage: 1.25 to 35 VDC • max. input current: 2.5 A • chip: LM2596S • dimensions: 49 x 26 x 12 mm •

VMA405

ARDUINO® COMPATIBLE RFID READ AND WRITE MODULE

operating voltage: 3.3 VDC • working current: 13 to 26 mA • sleep current: < 80 uA • peak current: < 30 mA • working
frequency: 13.56 MHz • supported card types: Mifare cards • interface / protocol: SPI • controller chip: MFRC522 •
data transmission speed: Max. 10 Mbit / s • dimensions: 66 x 40 x 7 mm • includes: 2 tags (1 card , 1 fob) •

VMA406

ARDUINO® COMPATIBLE 5 V RELAY MODULE

operating voltage: 5 VDC • relay current rating: 10 A at 250 VAC, 10 A at 30 VDC (non inductive) • relay contact:
C, NO, NC • connection: GND, +5 VDC, control input (5 to 12 VDC) • dimensions: 40 x 27 x 18 mm •

VMA407

ARDUINO® COMPATIBLE PHOTOSENSITIVE SENSOR MODULE WITH 3 PIN FLAT CABLE

operating voltage: 3.3 VDC or 5 VDC • output: analog voltage • pull-down resistor: 10 K. , on board • dimensions: 25 x 15 mm •

**VMA408**

SUPER-MINI DIGITAL AMPLIFIER BOARD

operating voltage: 2.5 to 5 VDC • connections: solder connections • sound processor:
PAM8403 • dimensions: 23 x 16 x 2 mm • high amplification efficiency 85% • can directly drive 4 O/8 O small
speakers • good sound quality & noise suppression • unique without LC filter class D digital power board • can use
computer USB power supply directly • low THD+N • short circuit protection • thermal shutdown

VMA409

L298N DUAL BRIDGE DC STEPPER CONTROLLER BOARD

driver: L298N • driver power supply: + 5 V to + 35 V • driver output current (max.): 2A • logic power output Vss: +5 V to +7 V
(internal supply +5 V) • logic current: 0-36 mA • controlling level: low -0.3 V to 1.5 V, high: 2.3 V-Vss • enable signal level:
low -0.3 V to 1.5 V, high: 2.3 V-Vss • max. power: 25 W • working temperature: -25C to +130 °C • dimensions: 69 x 56 x 36 mm •
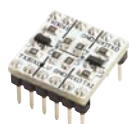
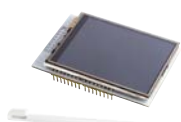**VMA410**

3.3 V / 5 V TTL LOGIC LEVEL CONVERTER MODULE

low side (3.3 V): 2 inputs and 2 outputs • high side (5 V): 2 inputs and 2 outputs • other connections:
Vlow (3.3 V), VHigh (5 V) , pass-trough GND • dimensions: 15 x 16 x 15 mm • breadboard compatible

VMA411

ARDUINO® COMPATIBLE MOS DRIVING MODULE

operating voltage: 3 to 5 VDC • max. load voltage: 0 to 24 VDC • input: SIG pin, logic level 3 to 5 VDC • max. load
current: 5 A (a heatsink is required for loads > 1 A) • used MOSFET: IRF520 • dimensions: 34 x 21 x 16 mm •

VMA412

2.8 INCH TOUCH SCREEN FOR ARDUINO® UNO/MEGA

resolution: 240 RGB (H) x 320 (V) • colour depth: 262 000 colours • system interface: •• 8-bits, 9-bits, 16-bits, 18-
bits interface with 8080-I /8080-II series MCU •• 6-bits, 16-bits, 18-bits RGB interface with graphic controller ••
3-line / 4-line serial interface • display mode: •• full colour mode (Idle mode OFF): 262 000 colour (selectable colour
depth mode by software) •• reduced colour mode (Idle mode ON): 8-colour • operating temperature: -40 °C to +85 °C

VMA413

40 PINS 30 CM MALE TO MALE JUMPER WIRE (FLAT CABLE)

length: 30 cm (11.8") • diameter: 22-26AWG • insulation material: PVC • conductor material: copper • type: male to male connector
cable • contents: 1 pc. of multi-colour flat cable (40 wires) • pre-cut, pre-stripped and pre-formed wires simplify and speed up
prototyping work • easy to connect and disconnect • these wires are compatible with standard breadboards that have 0.1" grids

VMA414

40 PINS 30 CM MALE TO FEMALE JUMPER WIRE (FLAT CABLE)

length: 30 cm (11.8") • diameter: 22-26AWG • insulation material: PVC • conductor material: copper • type: male to female connector
cable • contents: 1 pc. of multi-colour flat cable (40 wires) • pre-cut, pre-stripped and pre-formed wires simplify and speed up
prototyping work • easy to connect and disconnect • these wires are compatible with standard breadboards that have 0.1" grids

VMA415

40 PINS 30 CM FEMALE TO FEMALE JUMPER WIRE (FLAT CABLE)

length: 30 cm (11.8") • diameter: 22-26AWG • insulation material: PVC • conductor material: copper • type: female to female connector
cable • contents: 1 pc. of multi-colour flat cable (40 wires) • pre-cut, pre-stripped and pre-formed wires simplify and speed up
prototyping work • easy to connect and disconnect • these wires are compatible with standard breadboards that have 0.1" grids

VMA416

ATMEGA328P MCU IC WITH ARDUINO® UNO BOOTLOADER AND 16 MHZ CRYSTAL

VMA500

2 WHEEL DRIVE MOTOR CHASSIS ROBOTICS KIT
motor voltage: 5-10 VDC • pre-drilled mounting plates • one DC motor + gearbox per wheel

VMA501

DIY STARTER KIT FOR ARDUINO®
This basic kit includes: 1 x ATmega328 UNO DEVELOPMENT BOARD (VMA100) • 15 x LED (different colors) • 8 x 220 Ohm resistor (RA220E0) • 5 x 1K resistor (RA1K0) • 5 x 10K resistor (RA10K0) • 1 x 830 hole breadboard • 1 x RGB LED module (VMA318) • 4 x 4-pin Key switch • 1 x Active buzzer (VMA319) • 1 x Passive buzzer • 1 x 1838 IR Infrared 37.9khz Receiver (VMA317) • 1 x Infrared remote control • 1 x infrared sensor diode • 1 x LM35 temperature sensor (LM35DZ) • 2 x Ball tilt switch (similar to MERS4 & MERS5) • 3 x Photosenitive resistor LDR (similar to LDR04) • 1 x 74HC595 Shift register (HC595) • 1 x Battery holder for 6 AA battery's (similar to BH363B) • 1 x 8*8 LED Matrix display • 1 x single digit 7 segment LED display • 1 x 4 digit 7 segment LED display • 30 x Breadboard jumper wire • 1 x USB cable

VMA502

BASIC DIY KIT WITH ATMEGA2560 FOR ARDUINO®
This kit includes: 1 x ATmega2560 MEGA DEVELOPMENT BOARD (VMA101) • 15 x LED (different colors) • 8 x 220 Ohm resistor (RA220E0) • 5 x 1K resistor (RA1K0) • 5 x 10K resistor (RA10K0) • 1 x 830 hole breadboard • 4 x 4-pin Key switch • 1 x Active buzzer (VMA319) • 1 x Passive buzzer • 1 x infrared sensor diode • 1 x LM35 temperature sensor (LM35DZ) • 2 x Ball tilt switch (similar to MERS4 & MERS5) • 3 x Photosenitive resistor LDR (similar to LDR04) • 1 x single digit 7 segment LED display • 30 x Breadboard jumper wire • 1 x USB cable

VMA503

ELECTRONIC PARTS PACK FOR ARDUINO®
breadboard • Plastic plate • 30 x Breadboard jumper wire • 40 x Jumper pins • 38 x LED (different colors) • 2 x LED (RGB) • 2 x buzzer • 8 x push buttons (different colors) • 10 x 22pF • 10 x 100pF • 10 x 10nf • 10 x 100nf • 10 x 10µF capacitor • Trim potentiometer
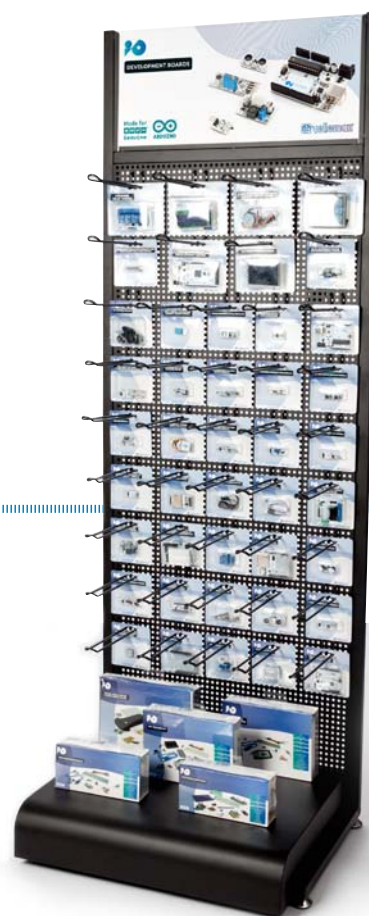
VMA504

BASIC ARDUINO® COMPATIBLE EXPERIMENTER'S KIT
1× ATmega328 NANO development board (VMA102) • 1 x USB cable • 1× Breadboard • 30 x Breadboard jumper wire • 2 × Light Dependant Resistors • 1 x IR Remote Receiver • 4 x tactile Switches • 15 x LED (different colors) • 1× Seven segment display • 1× buzzer • 1 x 50K potentiometer • 2 x tilt switch • 10 x 220 Ohm resistors • 10 x 1k Ohm resistors

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