

The

HACKer's

HARDWARE

TOOLKit

133 GADGETS

8 CATEGORIES

Yago Hansen

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133 GADGETS

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# Mini computers

Boards, palmtops

## RF

SDR, cars, garages, satellite, GSM, LTE

## Wi-Fi

Wi-Fi cards, antennas

## RFID & NFC

Physical access, cards, magnetic stripe, cars

## HID & Keylog

Rubberduffy, mouse injection, wireless keyboards

## Network

Routers, modems, VLAN, NAC

## BUS

HW hacking, JTAG, cars, motorbikes

## Accessories

Storage, powerbanks, batteries, chargers, GPS

# DI SCLAI MMER



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# Mini computers

Boards, palmtops



## GPD micro PC

### 6-inch Handheld Industry Laptop

Small handheld computer, ideal for carrying the best hacking software tools, and to handle all the external hardware hacking tools. The previous release supported Kali Linux. This version will probably support it too, since it supports Ubuntu Mate.

#### Specifications

Screen size	6 inches
Screen technology	Gorilla® Glass 4, Sharp full-fit dazzling screen
Pointing device	Touchpad
Resolution	1280×720 (16:9) (245ppi) (178°)
CPU	Intel® Celeron® N4100 (4 cores / 4 threads)
GPU	Intel® UHD Graphics 600
RAM	LPDDR4 6GB
Storage	128GB M.2 SSD, infinite capacity expansion
WI-FI	802.11 a/b/g/n/ac compatible
Wired LAN	10/100/1000Mbps Ethernet card
Bluetooth	4.2
RJ45	1
HDMI	1
USB A	3
USB C	1
RS-232	1
Card reader	Micro SDXC slot×1
Dimensions & Weight	153×113×23.5mm - 440g
Heat dissipation	Active

CROWDFUNDING  
**314 EUR**

**GPD**  
GamePad Digital



# Mini computers

Boards, palmtops



## GPD Pocket

### 7-inch Handheld Industry Laptop

Small handheld computer, ideal for carrying the best hacking software tools, and to handle all the external hardware hacking tools. This release actually supports Kali Linux.

#### Specifications

Screen size	7 inches
Screen technology	Boundless Glass
Pointing device	Touchpad
Resolution	FullHD 1920×1200 Retina
CPU	Intel Atom x7-Z8750 processor
GPU	Intel® UHD Graphics 600
RAM	8GB LPDDR3 memory
Storage	128GB eMMC
WI-FI	802.11 a/b/g/n/ac compatible
Wired LAN	10/100/1000Mbps Ethernet card
Bluetooth	4.1
RJ45	1
HDMI	1
USB A	3
USB C	1
RS-232	1
Card reader	Micro SDXC slot×1
Battery	7000mAh super large-capacity battery (up to 12h) with fast charge
Dimension	180×106×18.5mm ultra-small light body - 485g
Heat dissipation	Active



# Mini computers

Boards, palmtops



## Raspberry Pi Zero W

Multi-attack tool Linux based board

Small handheld computer, ideal for carrying the best hacking software tools, and to handle all the external hardware hacking tools. The most known Linux distro for it is P0wnP1 ALOHA and Kali Linux. P4wnP1 is a highly customizable USB attack platform, based on a low cost Raspberry Pi Zero or Raspberry Pi Zero W. The successor of P4wnP1 is called P4wnP1 A.L.O.A. and hosted here: [https://github.com/mame82/P4wnP1\\_aloa](https://github.com/mame82/P4wnP1_aloa). I recommend the USB type-A pongo-pin adapter shown in the previous picture.

USB functions supported:

- USB Ethernet (RNDIS and CDC ECM)
- USB Serial
- USB Mass Storage (Flash drive or CD-ROM)
- HID Keyboard
- HID Mouse

It also offers many attacks referred to Wi-Fi, Bluetooth and Networks.

### Specifications

1GHz, single-core CPU

512MB RAM

Mini HDMI and USB On-The-Go ports

Micro USB power

HAT-compatible 40-pin header

Composite video and reset headers

CSI camera connector

802.11 b/g/n wireless LAN

Bluetooth 4.1 & Bluetooth Low Energy (BLE)

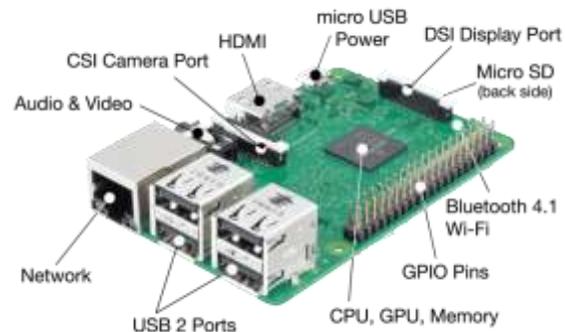
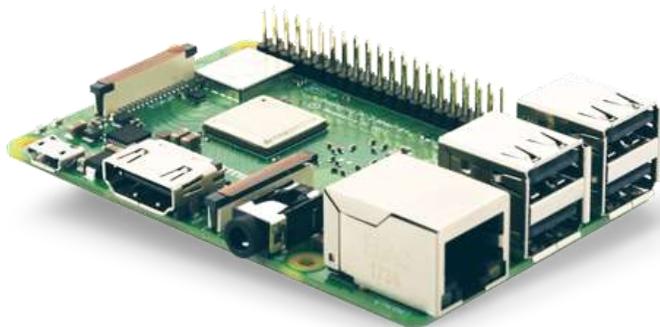
FROM  
17 EUR

AliExpress



# Mini computers

Boards, palmtops



## Raspberry Pi 3 model B+

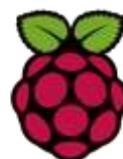
Mul ti - attack tool Li nux based board

The Raspberry Pi has a lot of fans, which means a lot of support for beginners. Aside from security professionals and hackers using it to run Kali Linux, many developers use the Pi for scientific and industrial applications. While the original Pi was made to introduce schoolchildren to programming, today's Raspberry Pi is capable of some truly amazing things with the right accessories and creativity. For building a prototype cyber-weapon, the Raspberry Pi has been the foundation for proof of concept attacks ranging from drone takeovers to mass Wi-Fi deauthing.

### Specifications

SoC:	Broadcom BCM2837B0 quad-core A53 (ARMv8) 64-bit @ 1.4GHz
GPU:	Broadcom Videocore-IV
RAM:	1GB LPDDR2 SDRAM
Networking:	Gigabit Ethernet (via USB channel), 2.4GHz and 5GHz 802.11b/g/n/ac Wi-Fi
Bluetooth:	Bluetooth 4.2, Bluetooth Low Energy (BLE)
Storage:	Micro-SD
GPIO:	40-pin GPIO header, populated
Ports:	HDMI, 3.5mm analogue audio-video jack, 4x USB 2.0, Ethernet, Camera Serial Interface (CSI), Display Serial Interface (DSI)
Dimensions:	82mm x 56mm x 19.5mm, 50g

FROM  
**30 EUR**



# Mini computers

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## Raspberry Pi 3 model A+

A much unknown Raspi board

The Raspberry Pi 3 Model A+ has the same mechanical footprint as the Raspberry Pi 1 Model A+, but both models have not been much known. This small board has a very different form factor as the Raspberry Pi model B+, and this is probably the only reason to buy this board instead its brother B+. Maybe for some projects this form factor makes a difference for integrating it in some cases, but there is no other reason for deciding to choose this model, since the B+ adds more performance and doubles the RAM size and offers an Ethernet port and three extra USB ports.

### Specifications

SoC:	Broadcom BCM2837B0, Cortex-A53 (ARMv8) 64-bit SoC @ 1.4GHz
RAM:	512MB LPDDR2 SDRAM
Networking:	2.4GHz and 5GHz IEEE 802.11.b/g/n/ac wireless LAN,
Bluetooth:	Bluetooth 4.2/BLE
Storage:	Micro SD port for loading your operating system and storing data
GPIO:	Extended 40-pin GPIO header
Ports:	Single USB 2.0 ports CSI camera port for connecting a Raspberry Pi Camera Module Full-size HDMI DSI display port for connecting a Raspberry Pi Touch Display 4 pole stereo output and composite video por
Power:	5V/2.5A DC power input 5 V DC via GPIO header

FROM  
**29 EUR**



# Mini computers

Boards, palmtops



## ODR01 D XU4

### Fully energized Raspberry Pi

Sometimes, in some cases, Raspberry Pi is not enough for certain hacking projects. For these cases in which you need more CPU, GPU, faster storage access or just connecting a USB 3 device, this is your board. For the most of the projects, Raspberry Pi board is a cheap and widely supported computer, but for some of them, like GSM/4G LTE hacking projects, you will need USB3 for high grade SDR devices, like BladeRF or USRP. Also, in projects where you need to read real-time rainbow tables you will need a high speed bus to storage like EMMC or SATA. This board offers active (XU4) or passive cooling versions (XU4Q). It has support for Linux and Android OS.

### Specifications

Samsung Exynos5422 Cortex™-A15 2Ghz and Cortex™-A7 Octa-core CPUs

Mali-T628 MP6(OpenGL ES 3.1/2.0/1.1 and OpenCL 1.2 Full profile)

2Gbyte LPDDR3 RAM PoP stacked

eMMC5.0 HS400 Flash Storage

2 x USB 3.0 Host, 1 x USB 2.0 Host

Gigabit Ethernet port (10/100/1000Mbps Ethernet with RJ-45 Jack - Auto-MDIX support)

HDMI 1.4a for display

Size : 83 x 58 x 20 mm approx.(excluding cooler)

Power: 5V/4A input

Linux Kernel 4.14 LTS

eMMC module socket : eMMC 5.0 Flash Storage (up to 64GByte)

MicroSD Card Slot (up to 128GByte)

Wi-Fi not included

40 pin Raspberry Pi styled connector

FROM  
**79 EUR**

**ODROID**  
Hardkernel



# Mini computers

Boards, palmtops



## RockPro64

Linux high performance based board

Sometimes, in some cases, Raspberry Pi is not enough for certain hacking projects. For these cases in which you need more CPU, GPU, faster storage access or just connecting a USB 3 device, this is your board. For the most of the projects, Raspberry Pi board is a cheap and widely supported computer, but for some of them, like GSM/4G LTE hacking projects, you will need USB3 for high grade SDR devices, like BladeRF or USRP. Also, in projects where you need to read real-time rainbow tables you will need a high speed bus to storage like EMMC or SATA. This board offers active (XU4) or passive cooling versions (XU4Q). It has support for Linux and Android OS.

### Specifications

Rockchip RK3399 Hexa-Core (dual ARM Cortex A72 and quad ARM Cortex A53) 64-Bit Processor

MALI T-860 Quad-Core GPU

2GB or 4GB RAM of dual-channel LPDDR4

PI-2 40 pin GPIO bus with I2C, SPI, UARTs and GPIOs

HDMI 2.0 4K support up to 60 fps

PCIe x4

USB 3.0 and USB type C with DP1.2 port + 2x USB 2.0 ports

eMMC module socket

CMOS camera port

Stereo audio Jack with MIC support

12V DC 3A-5A

128 MB SPI Flash

Gigabit Ethernet

MiPi DSI port up to 2560x1600 + touch panel

Wi-Fi / Bluetooth module socket for optional module

Android and Linux support

FROM  
**59 EUR**

 PINE64



# Mini computers

Boards, palmtops



## Coral USB Accelerator

Powerful Machine Learning for Linux

The Coral USB Accelerator brings powerful Machine Learning inferencing capabilities to existing Linux systems. Featuring the Edge TPU (a small ASIC designed and built by Google) the USB Accelerator provides high performance ML inferencing with a low power cost over a USB 3.0 interface. For example, it can execute state-of-the-art mobile vision models such as MobileNet v2 at 100+ fps, in a power efficient manner. This allows you to add fast ML inferencing to your embedded AI devices in a power-efficient and privacy-preserving way. Models are developed in TensorFlow Lite framework and then compiled to run on the USB Accelerator.

### Specifications

Google Edge TPU ML accelerator coprocessor

USB 3.0 Type-C socket

Supports Debian Linux on host CPU

Models are built using TensorFlow

Fully supports MobileNet and Inception architectures though custom architectures are possible

Compatible with Google Cloud

Edge TPU accelerator

ASIC designed by Google that provides high performance ML inferencing for TensorFlow Lite models

Arm 32-bit Cortex-M0+ Microprocessor (MCU)

USB 3.1 (gen 1) port and cable (Super Speed, 5Gb/s transfer speed)

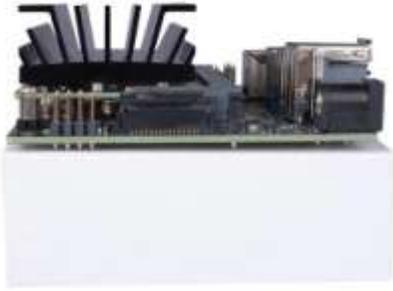
FROM  
**75 EUR**

 **seeed**  
The IoT Hardware Enabler



# Mini computers

Boards, palmtops



## nVidia Jetson Nano HDK

AI development in a small form factor

The NVIDIA® Jetson Nano™ Developer Kit delivers the compute performance to run modern AI workloads at unprecedented size, power, and cost. Developers, learners, and makers can now run AI frameworks and models for applications like image classification, object detection, segmentation, and speech processing. The developer kit can be powered by micro-USB and comes with extensive I/Os, ranging from GPIO to CSI. This makes it simple for developers to **connect a diverse set of new sensors to enable a variety of AI applications. It's incredibly power-efficient, consuming as little as 5 watts.** Jetson Nano is also supported by NVIDIA JetPack, which includes a board support package (BSP), Linux OS, NVIDIA CUDA®, cuDNN, and **TensorRT™ software libraries for deep learning, computer vision, GPU computing, multimedia processing, and much more.** The software is even available using an easy-to-flash SD card image, making it fast and easy to get started. The same JetPack SDK is used across the entire **NVIDIA Jetson™ family of products and is fully compatible with NVIDIA's world-leading AI platform for training and deploying AI software.** This proven software stack reduces complexity and overall effort for developers.

### Specifications

128-core NVIDIA Maxwell™ GPU

Quad-core ARM® A57 CPU

4 GB 64-bit LPDDR4

USB 3.0 Type A

USB 2.0 Micro-B

HDMI/DisplayPort

M.2 Key E storage support

Gigabit Ethernet - PoE connector

GPIOs, I2C, I2S, SPI, UART

MIPI-CSI camera connector

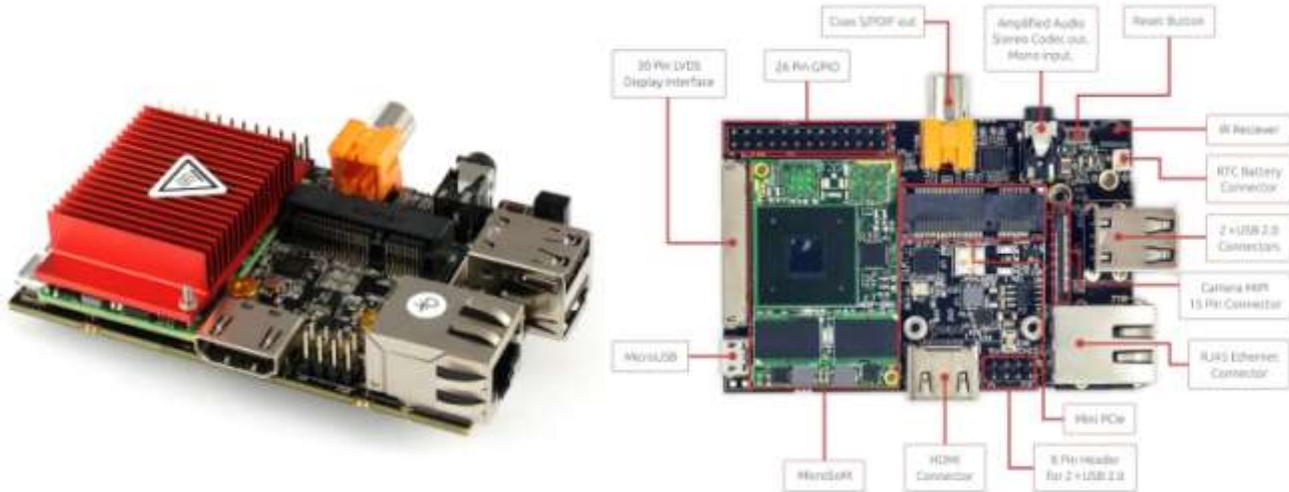
FROM  
**99 EUR**

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The IoT Hardware Enabler



# Mini computers

Boards, palmtops



## HummingBoard Pro

Multi-attack tool Linux small sized

Get ready to fall in love with the HummingBoard family – a small and powerful, low-cost ARM computers that ignite the imagination. Whatever your dream is, the HummingBoard family will help make it happen – the possibilities for creating the next great IoT innovation are truly limitless.

IoT is about “things” connecting with systems, people and other things such as sensors and actuators. IoT field is emerging with a large variety of use cases and applications, requiring different connectivity methods and dynamic and flexible hardware capabilities. The Pro version of the HummingBoard carrier offers a valuable development platform with advanced capabilities (including multiple storage methods) in an embedded device. As opposed to the HummingBoard Base model, the HummingBoard Pro focuses on larger file storage via mSATA, LVDS display integration, as well as extensibility through additional board access.

### Specifications

NXP i.MX6 ARM A9 Quad core

2GB RAM

8GB eMMC

Commercial Temp. (0° to 70° C) included heatsink

Includes Wi-Fi/BT

Size: 85mm x 56mm

FROM  
**97 EUR**





## Cubox-i 2ex

Multi-attack tool Linux based board

With its core technology based on SolidRun's state-of-the-art System on a Module (SOM), the CuBox-i is built from only the highest quality components, complying with both commercial and industrial standards. With no mechanical parts or fans – nothing that moves whatsoever – your CuBox-i is not only ultra-silent, without any bothersome whirrs or clicks, but built for a long, long life.

### Specifications

SOC i.MX6 Dual (2 cores) (optional i.MX6 Quad)

1GB – 2 GB RAM (64 bit @ 1066Mbps)

GPU GC2000 (OpenGL ES1.1, 2.0 Quad Shader)

HDMI 1080p with CEC (1.4, 3D support)

Wi-Fi / Bluetooth (Built In)

USB 2.0 x2

Ethernet 10/100/1000 Mbps

Storage: microSD, eSata II 3Gbps

RTC

Optical S/PDIF Audio Out

Micro USB to UART

InfraRed for Remote Control (RX/TX)

DC Jack 5.5mm 5V, Max 2A current

Size 2"x2"x2" with enclosure

FROM  
**80 EUR**



# Mini computers

Boards, palmtops



## NanoPi Neo2

Another hacking carrier board

The NanoPi NEO2 is a newly released super tiny ARM board by FriendlyElec. It uses Allwinner's 64-bit H5 quad-core SoC (ARM Cortex-A53). It has internal hexa-core Mail450 GPU, 512M DDR3 RAM. A UbuntuCore and Armbian image files are ready for it. The NanoPi NEO2 inherits NEO's form factor and has compatible interfaces and ports with NEO. In addition in such a small dimension it has Gbps Ethernet and one USB host port. These features make it especially suitable for applications that require high data throughput, speedy data transmission and high performance. Hobbyists and makers will just love it. It offers a lot of extra accessories available for it, like cases, accelerometer sensor, hats, etc.

### Specifications

CPU:	Allwinner H5, Quad-core 64-bit high-performance Cortex A53
DDR3 RAM:	512MB
Connectivity:	10/100/1000M Ethernet, RTL8211E-VB-CG chip
USB Host:	USB Type A x 1 and USB pin header x 2
MicroSD Slot:	MicroSD x 1 for system boot and storage
LED:	Power LED x 1, System LED(Blue) x 1
GPIO1:	2.54mm pitch 24 pin-header, compatible with Raspberry Pi's GPIO pin1 - pin 24. It includes UART, SPI, I2C, IO
GPIO2:	2.54mm pitch 12 pin-header. It includes USB, IR receiver, I2S, IO etc
Serial Debug Port:	2.54mm pitch 4pin-header
Audio In/Out:	2.0mm pitch 4 pin-header
PCB Dimension:	40 x 40mm
MicroUSB:	Power input(5V/2A) and OTG
OS/Software:	u-boot,Ubuntu Core

FROM  
**20 EUR**

 **FRIENDLY  
ELEC**



# Mini computers

Boards, palmtops



## Orange Pi Zero

Multi-attack tool Linux based board

It's an open-source single-board computer. It can run Android 4.4, Ubuntu and Debian. It uses the AllWinner H2 SoC, and has 256MB/512MB DDR3 SDRAM (256MB version is Standard version). Since this hardware is very cheap in comparison to other models, the main problem is the lack of support and the poor forums. So you'll need to solve most of the problems yourself, because the included Linux version has a lot of issues.

### Specifications

CPU H2 Quad-core Cortex-A7 H.265/HEVC 1080P.

GPU Mali400MP2 GPU @600MHz (Supports OpenGL ES 2.0)

256MB/512MB DDR3 SDRAM(Share with GPU)(256MB version is Standard version)

microSD card (Max. 32GB)/ 2MB SPI Flash

10/100M Ethernet RJ45 POE is default off.

WiFi XR819, IEEE 802.11 b/g/n

Audio Input MIC

Supports external board via 13pins

USB OTG can supply power

1x USB 2.0 HOST, 1x USB 2.0 OTG

Power Button

26 Pins Header,

13 Pins Header, with 2x USB, IR pin, AUDIO(MIC, AV)

LED

Power led & Status led

Supported OS: Android, Lubuntu, Debian

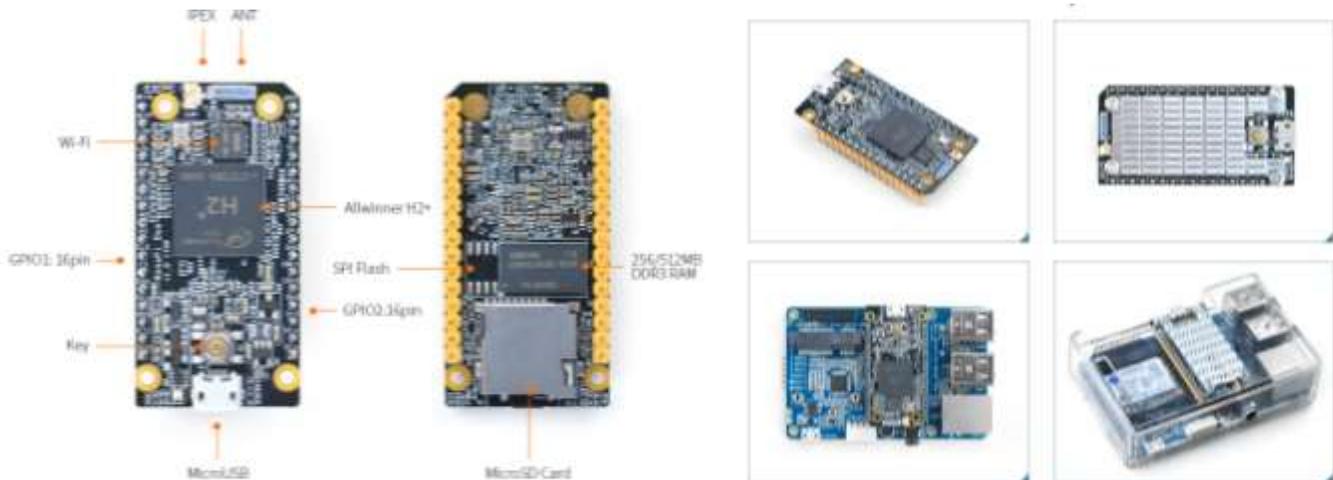
48 mm × 46mm - 26g

FROM  
10 EUR



# Mini computers

Boards, palmtops



## NanoPi Duo2

A tiny core based motherboard for IoT

The NanoPi Duo2 is another ARM board designed and developed by FriendlyELEC for makers and hobbyists. It is only 55 x 25.4mm. It features Allwinner quad-core A7 processor H3, and has 256M/512M DDR3 RAM, onboard WiFi & bluetooth module and an OV5640 camera interface. It works with Linux variants such as Ubuntu Core. It takes power input from its MicroUSB port and can be booted from a Micro SD card. It works with general bread-boards. Interface pins such as USB, SPI, UART, I2C, PWM, IR, audio input & output and Fast Ethernet etc are populated. NanoPi Duo2 supports software utilities such as WiringNP and Python etc. These are all open source. It is suited for various IoT applications.

### Specifications

CPU:	Allwinner H3, Quad-core Cortex-A7 Up to 1.2GHz
DDR3 RAM:	512M
Connectivity:	10/100M Ethernet
USB Host:	2.54mm pin x2, exposed in 2.54mm pitch pin header
Wireless:	802.11b/g/n & Bluetooth V4.0 of 1, 2 and 3 Mbps.
Audio input/output Port	exposed in 2.54mm pitch pin header
Debug Serial Port/UART0:	exposed in 2.54mm pitch pin header
microSD Slot:	1
microUSB:	OTG and power input
GPIO1:	2.54mm spacing 16pin. It includes UART, SPI, I2C, Audio etc
GPIO2:	2.54mm spacing 16pin. It includes USB, 10/100M Ethernet, IO
PCB Dimension:	25.4 x 55mm
Power:	DC 5V/2A
OS:	U-boot, Linux-4.14 / Linux-3.4, Ubuntu 16.04.2 LTS (Xenial)

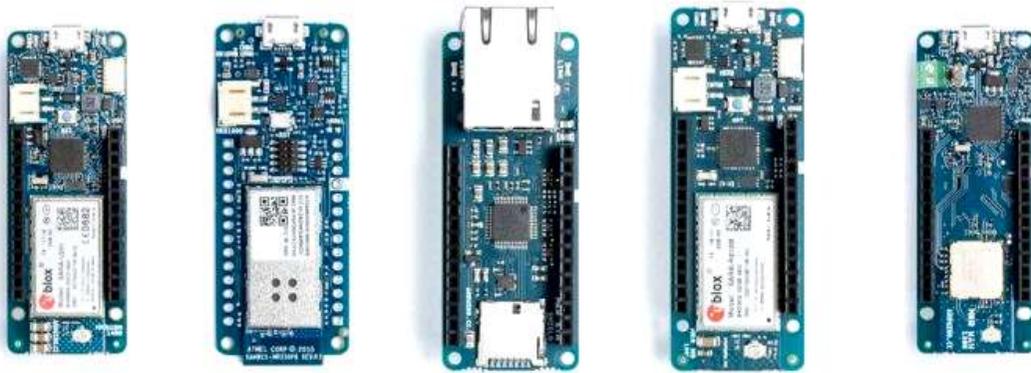
FROM  
**20 EUR**

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ELEC**



# Mini computers

Boards, palmtops



## Arduino MKR boards

### Arduino based IoT connected boards

Arduino has been known for easy-to-use and inexpensive development boards for a long time. Their relatively new MKR family of boards are especially well suited for IoT because they offer support for different connectivity options. At the time of writing, Arduino has boards currently available that support Wi-Fi, LoRa, Sigfox, and GSM Cellular. They have additional MKR boards coming soon that add support for Ethernet and NB-IoT and Cat M1 Cellular.

#### Specifications

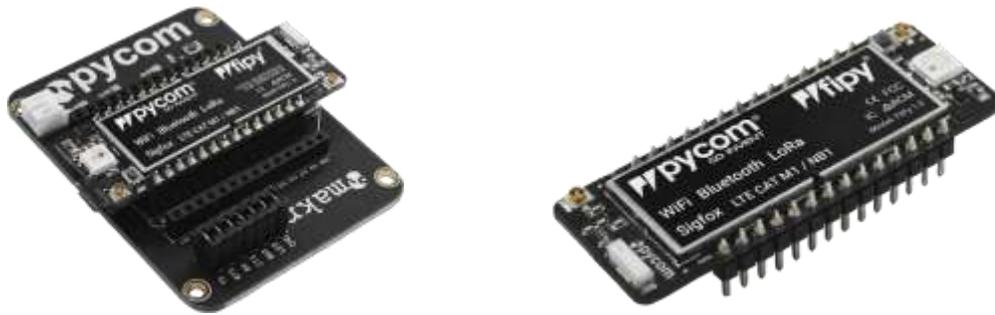
Microcontroller	SAMD21 Cortex-M0+ 32bit low power ARM MCU
Board Power Supply (USB/VIN)	5V
Supported Battery(*)	Li-Po single cell, 3.7V, 700mAh minimum
Circuit Operating Voltage	3.3V
Digital I/O Pins	8
PWM	12 (0, 1, 2, 3, 4, 5, 6, 7, 8, 10, A3 - or 18 -, A4 - or 19)
Other ports	UART, SPI, I2C
Analog Pins	Input: 7 (ADC 8/10/12 bit) Output: 1 (DAC 10 bit)
External Interrupts	8 (0, 1, 4, 5, 6, 7, 8, A1 - or 16-, A2 - or 17)
DC Current per I/O Pin	7 mA
Flash Memory	256 KB
SRAM	32 KB
EEPROM	no
Clock Speed	32.768 kHz (RTC), 48 MHz
LED_BUILTIN	6
USB	Full-Speed USB Device and embedded Host
Size & Weight	61.5 mm x 25 mm (32 gr.)

FROM  
**28 EUR**



# Mini computers

Boards, palmtops



## Pycom FiPy

ESP32 board programmable via Python

Imagine 5 networks in one perfectly-shaped, same small foot print as WiPy, LoPy and SiPy, IoT development board. MicroPython enabled. Featuring Wi-Fi, Bluetooth, LoRa, Sigfox and dual LTE-M (CAT M1 and NB1) the FiPy gives access to all the world's LPWAN networks on one tiny board. As all other Pycom boards, it offers a MicroPython reduced Python IDE to program all your applications using just Python language and supported libraries.

### Specifications

Espressif ESP32 SoC powerful CPU

Dual processor and Wi-Fi radio system on chip

Networking processor handles the Wi-Fi connectivity and the IPv6 stack

Main processor is entirely free to run the user application

An extra ULP-coprocessor that can monitor GPIOs, the ADC channels and control most of the internal peripherals during deep-sleep mode while only consuming 25uA

Five networks: Wi-Fi, BLE, cellular LTE-CAT M1/NB1, LoRa and Sigfox

1KM Wi-Fi range

MicroPython enabled (multithreading)

Fits in a standard breadboard (with headers)

Ultra-low power usage: a fraction compared to other connected microcontrollers

2 x UART, 2 x SPI, I2C, micro SD card

Analogue channels: 8\_12 bit ADCs, 2\_8 bit DAC

Timers: 2\_64 bit with PWM with up to 16 channels

DMA on all peripherals

GPIO: Up to 22

RAM: 4MB

Flash Memory: 8MB

Hardware floating point acceleration

Voltage: Input 3.3V 5.5V, Output: 3v3 capable of sourcing up to 400mA

FROM  
**54 EUR**

**pycom**  
GO INVENT





## RTL-SDR v.3

### Cheap and powerful SDR RX device

This USB dongle style SDR is the most known and compatible Software Defined Radio device, with RX only capabilities. This is an RTL-SDR v3 software defined radio receiver with RTL2832U ADC chip, R820T2 tuner, 1PPM TCXO, SMA F connector and aluminium case with passive cooling. Tunes from 500 kHz to 1.7 GHz with up to 3.2 MHz (2.4 MHz stable) of bandwidth. (HF works in direct sampling mode). Perfect for use as a computer based radio scanner with free software like SDR#, HDSDR, SDR-Radio, GQRX or SDR Touch on Android. Works on Windows, OSX, Linux, Android and computers like the Raspberry Pi. Great for many applications including general radio, air traffic control, public safety, ADS-B aircraft radar, ACARS, trunked radio, P25/MotoTRBO digital voice, POCSAG, weather balloons, APRS, NOAA APT/Meteor M2 weather satellites, radio astronomy, DAB, classroom learning, or as a low cost panadapter with a ham radio. This model has several improvements over other brands. It uses the improved R820T2 tuner, a 1PPM TCXO, better components, a redesigned lower noise PCB, cooling improvements, extra ESD protection and an SMA F connector. It also has a software bias-tee for powering LNA's and active antennas.

Remember to buy the version 3 (V3) that includes new important features (bias tee, etc.)

### Specifications

Bandwidth:	Up to 2.4 MHz stable
ADC:	RTL2832U 8 bits
Frequency Range:	500 kHz – 1766 MHz (500 kHz – 24 MHz in direct sampling mode)
Typical Input Impedance:	50 Ohms
Typical Current Draw:	270 – 280 mA

FROM  
**25 EUR**

RTL-SDR.COM



# RF

SDR, cars, garages, satellite, GSM, LTE



## FI amingo FM

### Broadcast FM Bandstop Filter for SDR

A high-quality, high-performance band-stop filter designed for software defined radio (SDR) applications. Designed and manufactured by NooElec. Broadcast FM can be particularly problematic due to the high-powered transmitters used for broadcasting in some areas. These signals can overload the front end of an SDR, causing imaging and a number of other issues. It provides sufficient attenuation for broadcast FM frequencies (>40dB typical) while ensuring adjacent bands, such as the important VHF airband (108-137MHz) are minimally affected. The -3dB rolloff of the filter is 80MHz and 115MHz. Minimal out-of-band insertion loss means the filter can stay in place for most any application. As a true band-stop filter, you are able to pass-through DC (bias power) when it is required. DC current handling is 250mA (min), and the maximum recommended signal level is +18dBm (5Vp-p), so there is no issue using the filter for higher-power applications.

#### Specifications

Filter rolloff:	80MHz and 115MHz (-3dB)
BIAS power:	Pass-through
DC current handling:	250 mA (min)
Max. signal level:	18 dBm (5V p-p)
Typical Current Draw:	270 – 280 mA

FROM  
**17 EUR**

amazon





## Flamingo AM

### Broadcast AM notch Filter for SDR

A high-quality, high-performance bandstop filter designed for software defined radio (SDR) applications. Designed and manufactured by NooElec. Broadcast AM can be particularly problematic due to the high-powered transmitters used for broadcasting in some areas. These signals can overload the front end of an SDR, causing imaging and a number of other issues. As such, Flamingo AM makes a great companion to our Ham It Up series of HF upconverters. It provides sufficient attenuation for broadcast AM frequencies (>40dB typical) while ensuring adjacent bands, such as 160m, are minimally affected. The -3dB rolloff of the filter is 350kHz and 1900kHz. Minimal out-of-band insertion loss means the filter can stay in place for most any application, though we do recommend removing Distill:AM from your setup when not listening to HF frequencies. As a true bandstop filter, you are able to pass-through DC (bias power) when it is required. DC current handling is 250mA (min), and the maximum recommended signal level is +18dBm (5Vp-p), so there is no issue using the filter for higher-power applications. Flamingo AM has its filter circuitry fully shielded with an EMI frame, and has its front end protected by an ESD diode meant for RF applications. 2 mounting holes are available on the PCB for various mounting options, and the SMA hardware (washer and nut) is included.

### Specifications

Filter rolloff:	350kHz - 1900kHz (-3dB)
BIAS power:	Pass-through
DC current handling:	250 mA (min)
Max. signal level:	18 dBm (5V p-p)
Typical Current Draw:	270 – 280 mA

FROM  
**17 EUR**

amazon



# RF

SDR, cars, garages, satellite, GSM, LTE



## HackRF One

<Medium-category SDR with TX capabilities

HackRF One from Great Scott Gadgets is a Software Defined Radio peripheral capable of transmission or reception of radio signals from 1 MHz to 6 GHz. Designed to enable test and development of modern and next generation radio technologies, HackRF One is an open source hardware platform that can be used as a USB peripheral or programmed for stand-alone operation. This SDR offers one important improvement compared to other cheap ones, it permits transmission. **But the RF quality of this SDR isn't as good as expected.** The main goal is that you will find dozens of supported PoC for it.

### Specifications

1 MHz to 6 GHz operating frequency

Half-duplex transceiver

Up to 20 million samples per second

8-bit quadrature samples (8-bit I and 8-bit Q)

Compatible with GNU Radio, SDR#, and more

Software-configurable RX and TX gain and baseband filter

Software-controlled antenna port power (50 mA at 3.3 V)

SMA female antenna connector

SMA female clock input and output for synchronization

Convenient buttons for user programming

Internal pin headers for expansion

Hi-Speed USB 2.0

USB-powered

Open source hardware based licensing

FROM  
**260 EUR**





## PortaPack for HackRF One

Converts HackRF in a handheld device

Add a PortaPack H1 to your HackRF One software-defined radio, and leave your laptop behind! The PortaPack H1 attaches to your HackRF and adds a touchscreen LCD, navigation controls, headphone jack, 2.5ppm clock reference, real-time clock, micro SD card slot, and custom aluminium case. Just add a USB battery, and you're ready to explore radio spectrum wherever you are. The PortaPack firmware runs on the fast ARM processors in your HackRF. No computer is necessary (except for reprogramming its firmware). There are two main forks in github for this adapter, since the most powerful one is:

<https://github.com/furrtek/portapack-havoc>

This firmware offers many different standalone functionalities that will improve your HackRF One and it also permits working in SDR mode from your computer.

### Specifications

2.4 inch, 240 x 320 RGB LCD with resistive touch panel.

Four-way arrow keys, rotary jog wheel, and select button.

Headphone/microphone jack, compatible with recent Samsung and Apple mobile headsets.

2.5 parts-per-million temperature-compensated clock reference.

Coin battery for preserving settings and date/time.

Micro SD card slot for data and code storage.

Custom milled aluminium case, anodized black.

SSB, AM, narrowband FM, wideband FM audio reception, with spectrum waterfall. [Details]

Wideband (18MHz) spectrum analysis and waterfall.

Monitoring of boat (AIS), automobile (TPMS), and utility meter transponders (ITRON ERT).

HackRF mode runs HackRF firmware for use with host computer SDR software.

PPM calibration for more accurate tuning.. Sleep mode saves power by turning off just the display.

HACKRF NOT INCL.  
**220 EUR**

SHAREBRAINED TECHNOLOGY, INC.



# RF

SDR, cars, garages, satellite, GSM, LTE



## Crazyradio PA USB 2.4GHz transceiver

It features a 20dBm power amplifier, LNA and comes pre-programmed with Crazyflie compatible firmware. The power amplifier boosts the range, giving a range of more than 1km together with the Crazyflie 2.0 and above 2km Crazyradio PA to Crazyradio PA. The Crazyradio PA is not only for usage together with the Crazyflie and Crazyflie 2.0. Since it's an open project with firmware written from scratch and a Python API for usage it's great building block for systems that require longer range than Wi-Fi and doesn't have the same requirements for bandwidth. The hardware comes shipped with the latest firmware as well as a bootloader that enables firmware upgrades via USB without any additional hardware needed. It is been widely used for hacking wireless keyboards and mice, **and it's supported by the bettercap framework.**

### Specifications

Radio power amplifier giving 20dBm (100 mW) output power (1km range LOS with Crazyflie 2.0)

Open source firmware

Firmware upgrade via USB

Low latency

Based on nRF24LU1+ chip from Nordic Semiconductor

8051 MCU at up to 16MHz with 32Kb flash and 2Kb SRAM

2.4GHz ISM band radio

USB device peripheral

125 radio channels

2Mbps, 1Mbps and 250Kps communication data rate

Sends and receives data packets of up to 32 bytes payload

Automatically handles addresses and packet ACK

Hardware SPI and UART

Compatible with Enhanced ShockBurst protocol from Nordic Semiconductor

Low Noise Amplifier (LNA) + Radio power amplifier giving 20dBm output power

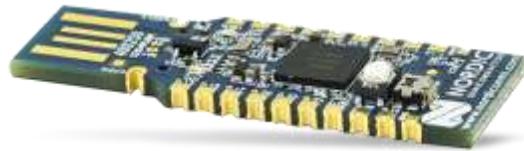
RPSMA connector

Can be powered with up to 13V via expansion header

FROM  
**50 EUR**

 **seeed**  
The IoT Hardware Enabler





## nRF52840 USB Dongle

### USB 2.4GHz transceiver next generation

The nRF52840 Dongle is a small, low-cost USB dongle that supports Bluetooth 5, Bluetooth mesh, Thread, ZigBee, 802.15.4, ANT and 2.4 GHz proprietary protocols. The Dongle is the perfect target hardware for use with nRF Connect for Desktop as it is low-cost but still support all the short range wireless standards used with Nordic devices. The dongle has been designed to be used as a wireless HW device together with nRF Connect for Desktop. For other use cases please do note that there is no debug support on the Dongle, only support for programming the device and communicating through USB.

It is supported by most of the nRF Connect for Desktop apps and will automatically be programmed if needed. In addition custom applications can be compiled and downloaded to the Dongle. It has a user programmable RGB LED, a green LED, a user programmable button as well as 15 GPIO accessible from castellated solder points along the edge. Example applications are available in the nRF5 SDK under the board name PCA10059. The nRF52840 Dongle is supported by nRF Connect for Desktop as well as programming through nRFUtil.

### Specifications

Small and low-cost USB dongle

Supports BLE, Thread, ZigBee, 802.15.4, ANT, and 2.4GHz

15 GPIO and interfaces available on castellated edge soldering points

1 programmable RGB LED

1 programmable green LED

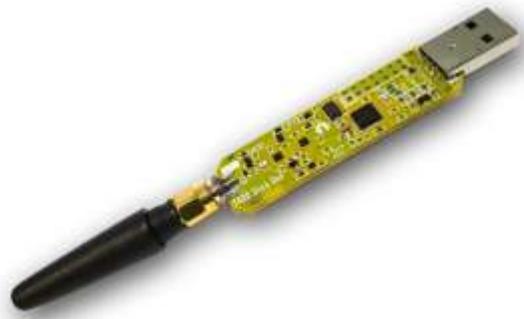
1 programmable button

Updatable through USB DFU



# RF

SDR, cars, garages, satellite, GSM, LTE



## Yardstick Sub 1GHz radio stick

YARD Stick One (Yet Another Radio Dongle) can transmit or receive digital wireless signals at frequencies below 1 GHz. It uses the same radio circuit as the popular IM-Me. The radio functions that are possible by customizing IM-Me firmware are now at your fingertips when you attach YARD Stick One to a computer via USB. YARD Stick One comes with RfCat firmware installed, courtesy of atlas. RfCat allows you to control the wireless transceiver from an interactive Python shell or your own program running on your computer. YARD Stick One also has CC Bootloader installed, so you can upgrade RfCat or install your own firmware without any additional programming hardware. An antenna is not included. ANT500 is recommended as a starter antenna for YARD Stick One. This tool has been used in various attacks and PoC about Wireless keys (cars and others) hacking.

### Specifications

half-duplex transmit and receive

official operating frequencies: 300-348 MHz, 391-464 MHz, and 782-928 MHz

unofficial operating frequencies: 281-361 MHz, 378-481 MHz, and 749-962 MHz

modulations: ASK, OOK, GFSK, 2-FSK, 4-FSK, MSK

data rates up to 500 kbps

Full-Speed USB 2.0

SMA connector for external antennas such as ANT500

receive amplifier for improved sensitivity

transmit amplifier for higher output power

strong RF performance across the entire operating frequency range

low pass filter for elimination of harmonics when operating in the 800 and 900 MHz bands

antenna port power control for compatibility with antenna port accessories designed for HackRF One

GoodFET-compatible expansion and programming header

GIMME-compatible programming test points





# Ubertooth One

## The best Bluetooth hacking device

Ubertooth One is an open source 2.4 GHz wireless development platform suitable for Bluetooth experimentation. The Ubertooth One is an opensource Bluetooth test tool from Michael Ossmann. It is the world's first affordable Bluetooth monitoring and development platform and is a fully open source product (both hardware and software). There are some **cases available for it, since it doesn't include a case**. I recommend getting the aluminium case in order to isolate it from interferences and to protect it from fingers. More info:

<https://www.davidsopas.com/tag/ubertooth/>

### Specifications

2.4 GHz transmit and receive.

Transmit power and receive sensitivity comparable to a Class 1 Bluetooth device.

Standard Cortex Debug Connector (10-pin 50-mil JTAG).

In-System Programming (ISP) serial connector.

Expansion connector: intended for inter-Ubertooth communication or other future uses.

6 indicator LEDs.

RP-SMA RF connector: connects to test equipment, antenna, or dummy load.

CC2591 RF front end.

CC2400 wireless transceiver.

LPC175x ARM Cortex-M3 microcontroller with Full-Speed USB 2.0.

USB A plug: connects to host computer running Kismet or other host code.

Get the NoElec aluminium case for it!

FROM  
155 EUR



# RF

SDR, cars, garages, satellite, GSM, LTE



## API mote v.4b

### Hacking Zigbee IoT protocol

The ApiMote is a ZigBee security research hardware intended for researchers, students, utility companies, etc. to use for learning about and evaluating the security of IEEE 802.15.4/ZigBee systems as authorized. ApiMote is pre-flashed with KillerBee firmware, so all you need to do is simply plug in to your system and use the KillerBee utilities to start your research. The ApiMote hardware is designed and developed by River Loop security and the project is open-source available here:

<https://github.com/riverloopsec/apimote>

### Specifications

2.4 GHz IEEE 802.15.4 Compliant and ZigBee™ Ready RF Transceiver (CC2420)

Interoperability with other IEEE 802.15.4 devices

16-Bit Ultra-Low-Power MCU (116kB Flash, 8KB RAM) (MSP430F2618), featuring Integrated ADC, DAC, Supply Voltage Supervisor, and DMA Controller

FTDI USB-to-Serial IC

Programming and data collection via USB

Integrated on-board antenna

Low current consumption

Hardware link-layer encryption and authentication is supported

Optional SMA antenna connector

FROM  
**150 EUR**

 **ATTIFY STORE**





# Parani UD100

## Bluetooth device with higher power

The Parani-UD100 is a class 1 type Bluetooth USB adapter that supports 300 meters of wireless transmission distance by default. With Patch antennas the distance can reach up one kilometer in open space. The working distance can be further extended up to 1000 meters using optional replacement antenna. Thanks to its longer communication distance than other regular Bluetooth USB adapters, it is suitable for industrial or special applications. Parai-UD100 is compatible with other SENA Bluetooth devices perfectly. Try this software tool:

[https://github.com/pwnieexpress/blue\\_hydra](https://github.com/pwnieexpress/blue_hydra)

### Specifications

Supports Bluetooth stack v4.0

USB 2.0

Supports Bluetooth DUN, FAX, SPP, HID, FTP, OPP, SDP, HCRP, LAN, OBEX FTP, OBEX OPP, OBEX BIP, BIP, AVRCP, A2DP, HSP, HFP, PAN, BPP, Headset, AVCTP, AVDTP, HDP, Find Me, Proximity, Health Thermometer, Heart Rate, HID OVER GATT profiles

Supports up to 7 simultaneous connections

Easy to use Windows configuration tool available

Bluetooth driver needed (Bluesoleil based driver)

Easy to use Windows configuration tool available

Working distance (In an open field): Normally 300 meters, up to 600 meters using 5 dipole antenna

Accessible RP-SMA antenna connector for switching to other antenna types



# RF

SDR, cars, garages, satellite, GSM, LTE



## RF power meter

### Measuring RF output power

Many times I've just wanted to check if the RF output power emissions were adjusted to the legality, or just if the manufacturer's announced RF power was right. This is the tool to check the ERP (Emitted Radiated Power) of any RF device working in the supported frequencies. Today, most OS limit the output power of Wi-Fi devices patching the driver in real time. It's very difficult to know what the emitted power of any Wi-Fi device is exactly. With this tool you will be able to do it!

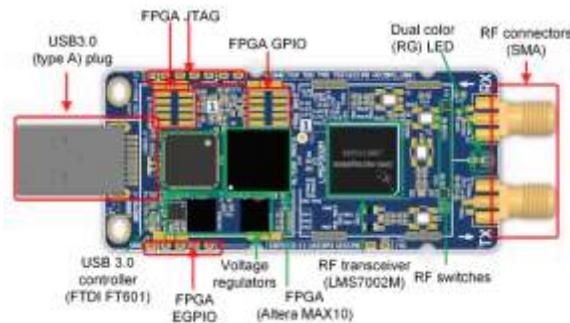
### Specifications

Power Level:	-20dBm up to +30dBm
Calibrated Frequencies:	35, 72, 433, 1200, 2400, 5600-6000MHz in 50MHz steps
Accuracy:	+/- 0.5dB
Attenuator:	30dB (Internal)
Battery:	3.7V Lithium Ion cell, 10440 size, 320mAh
Current Consumption:	~35mA
Battery Life:	~8 hours
Auto Shutdown:	5 minute timeout
Charging:	Micro USB cable
Display:	OLED, 128x64 pixels, monochrome
User Input:	Joystick
Interfaces:	USB, power control via CDC
Antenna:	5.8GHz 'Sniffer Antenna' (linearly polarized ~2dBi dipole)
Adapter:	Male to Male SMA adapter

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**89 EUR**

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## Lime SDR mini

### Another high RF quality SDR device

The BladeRF 2.0 micro xA4 is the next generation Software Defined Radio (SDR) offering a frequency range of 47MHz to 6GHz, 61.44MHz sampling rate, and 2x2 MIMO streaming. Packed into a small form factor, the BladeRF 2.0 micro was designed for high performance as well as mobile applications. Through libbladeRF the BladeRF 2.0 micro is compatible with GNURadio, GQRX, SDR-Radio, SDR#, gr-fosphor, SoapySDR, and more on Windows, Linux and MacOS. The optional RF shield cap protects sensitive RF components from Electromagnetic Interference (EMI) and provides additional thermal dissipation, allowing the BladeRF 2.0 micro to operate in challenging environments. All of the RF SMA ports are capable of providing power over bias-tee circuitry to wideband amplifiers and pre-amps. Power to bias-tee peripherals is fully software controllable, providing maximal operational flexibility. Currently, the official bias-tee peripherals include the BT-100, a wideband power amplifier for TX, and the BT-200, a wideband low noise amplifier for RX.

### Specifications

RF transceiver:	Lime Microsystems LMS7002M
Frequency Range:	10 MHz - 3.5 GHz
RF Bandwidth:	30.72 MHz @ 12 bit
Duplex:	Full (1xTX/1xRX)
FPGA:	Intel Altera MAX 10 (10M16SAU169C8G)
EEPROM memory:	2 x 128 KB for RF transceiver MCU firmware and data
Flash memory:	1 x 4 MB flash memory for data
General user inputs/outputs:	2 x dual color (red + green) LED, 8 x FPGA GPIO pinheader (3.3 V)
Connectivity:	USB 3.0 Type-A (FTDI FT601 controller) 2 x coaxial RF (SMA) connectors U.FL connector for external clock source FPGA GPIO headers and JTAG connector
Clock system:	30.72 MHz onboard VCTCXO
Board dimensions:	69 mm x 31.4 mm (20 grams)

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**159 EUR**

CROWD SUPPLY



# RF

SDR, cars, garages, satellite, GSM, LTE



## BladeRF xA4

High RF quality SDR device

The BladeRF 2.0 micro xA4 is the next generation Software Defined Radio (SDR) offering a frequency range of 47MHz to 6GHz, 61.44MHz sampling rate, and 2x2 MIMO streaming. Packed into a small form factor, the BladeRF 2.0 micro was designed for high performance as well as mobile applications. Through libbladeRF the BladeRF 2.0 micro is compatible with GNURadio, GORX, SDR-Radio, SDR#, gr-fosphor, SoapySDR, and more on Windows, Linux and MacOS. The RF shield cap protects sensitive RF components from Electromagnetic Interference (EMI) and provides additional thermal dissipation, allowing the BladeRF 2.0 micro to operate in challenging environments. All of the RF SMA ports are capable of providing power over bias-tee circuitry to wideband amplifiers and pre-amps. Power to bias-tee peripherals is fully software controllable, providing maximal operational flexibility. Currently, the official bias-tee peripherals include the BT-100, a wideband power amplifier for TX, and the BT-200, a wideband low noise amplifier for RX.

### Specifications

49KLE Altera Cyclone V FPGA

47MHz to 6GHz frequency range

61.44MHz sampling rate

56 MHz filtered bandwidth (IBW)

Automatic gain control (AGC)

Automatic IQ and DC offset correction

2x2 MIMO channels

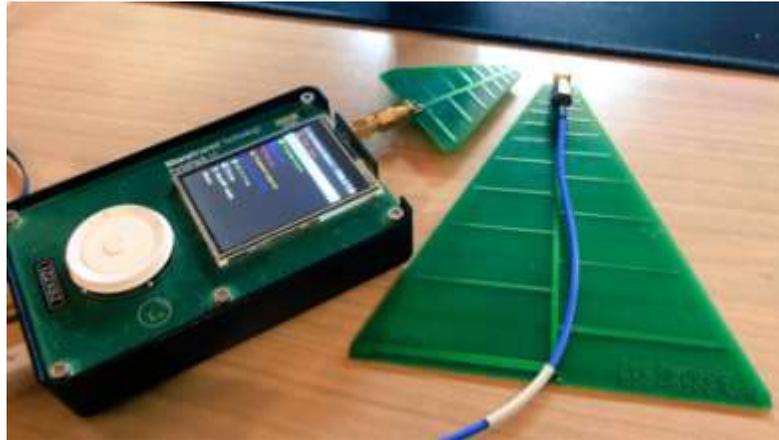
USB 3.0 SS (Super Speed)

Optional enclosure available

FROM  
**420 EUR**

nuand 





## Log Periodic Antenna

Made for a high range of freqs

The high gain directional wideband antenna is suitable for directional radio signal transmission and reception, signal source reconnaissance and direction finding, broadband signal testing and the like. The antenna is suitable for UWB positioning module, Wifi 2.4G and 5.8GHz and other common frequencies.

### Specifications

Frequency range:	2.4GHz-10.5GHz
Dimensions:	100mm*85mm
Polarization mode:	linear polarization
Rated gain:	7dBi
Return loss:	10dB
Power capacity:	8W
Interface form:	SMA female head (outer screw inner hole)

FROM  
**11 EUR**

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# RF

SDR, cars, garages, satellite, GSM, LTE



## Sub 1 GHz telescopic antenna

The antenna for HackRF and yardstick

ANT500 from Great Scott Gadgets is a telescopic antenna designed for operation from 75 MHz to 1 GHz. Its total length is configurable from 20 cm to 88 cm. ANT500 is constructed of stainless steel and features an SMA male connector, rotating shaft, and adjustable elbow. ANT500 is a 50 ohm general purpose antenna. It is the perfect first antenna for use with HackRF One or YARD Stick One.

### Specifications

Frequency Range:	75 MHz – 1000 MHz
Impedance:	50 Ohm
Connector:	SMA male
Material:	Stainless steel
Length:	(telescopic) 20 cm – 88 cm
Type:	Omnidirectional
Mode:	Reception only

FROM  
**35 EUR**





## Alfa AW-US036NHA

The best 2.4 GHz Wi-Fi 802.11n device

This is the most versatile Wi-Fi card in the market for the last many years. It supports monitor mode for the most Linux distributions, like Kali Linux, Debian and others. It also supports Windows OS, permitting with its driver and utility to create AP devices on it. In Kali OS all the operating modes are supported (Fake AP, multiple APs, monitor mode, managed mode) and quite all the hacking tools in the market have support for it. The only limitation with this card is that it doesn't support 5 GHz frequencies.

### Specifications

Standards:	Wireless: IEEE 802.11b/g/n
Data Rate:	802.11b: UP to 11Mbps, 802.11g: UP to 54Mbps, 802.11n: UP to 150Mbps
Interface:	USB 2.0 mini USB
Antenna connector:	1 x 2.4GHz RP-SMA connector
Chipset:	Atheros AR9271
Included antenna:	5dBi 2.4GHz Antenna
Freq. Range:	2.412 ~ 2.483 GHz
Channels:	1-11 channels (North America), 1-13 channels (General Europe)
Output power:	802.11b @ 29dBm, 802.11g @ 27dBm, 802.11n @ 27dBm
Sensitivity:	11b: 96dBm @ 1Mbps, 11g: 91dBm @ 6Mbps, 11n @ 91dBm
Modulation:	BPSK, QPSK, CCK and OFDM
Voltage:	5V±5%

FROM  
**35 EUR**

**ALFA**  
NETWORK



# Wi-Fi

Wi-Fi cards, antennas



## Alfa AWUS-036ACH

The best 2.4 / 5 GHz Wi-Fi 802.11ac device

Wide range 802.11ac dual band USB wireless adapter AWUS036ACH brings extreme distances and with blazing speed to your Mac or Windows computers in your Wi-Fi network. Up to 300Mbps for 2.4GHz network and up to 867Mbps for 5.0GHz network, AWUS036ACH connects to your PC with USB 3.0 with AC1200 Wi-Fi technology to provide superb performance. Inheriting years of experiences in wireless industry, ALFA AWUS036ACH is built with latest 802.11ac standards, plus high-sensitivity dual band antennas, resulting in extraordinary signal strength and coverage. No more signal dead zone in your living space when streaming HD video, downloading large files or surfing on the web. Dual Band AC1200 support.

### Specifications

Interface	USB 3.0 Micro-B
Antenna Connector	Detachable RP-SMA female connector
Antenna	2x High-sensitivity dual-band dipole antenna
Standards	Wireless IEEE 802.11a, IEEE 802.11b, IEEE802.11g, IEEE 802.11n, IEEE 802.11ac
Frequency	2.4GHz / 5GHz
Security	WEP 64/128 bit, WPA-PSK,WPA2-PSK,Cisco CCX
Supported OS	Windows, MacOS, Linux

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**55 EUR**

**ALFA**  
NETWORK





## 4 Watt 2.4 GHz amplifier

### Wi-Fi / Bluetooth booster

This 4W amplifier can be very useful for some kind of Wi-Fi / Bluetooth attacks, where you need extra RF power, because you are too far away from your target or because you want to give the best coverage and power. But remember that power is not everything, and that you also need to have good quality interfaces. Also you have to take care in which situations you use it because so powerful transmissions are illegal all over the world.

### Specifications

Operation Range:	2400-2500 MHz
Operation Mode:	Bi-directional, half-duplex, Auto-Switching via carrier sensing
Frequency Response:	$\pm 1$ dB over operation range
Receiver gain:	10dB
Transmitter gain:	13 dBi
Max. transmit power:	36 dBm
Noise figure:	< 2.5 dB
EVM:	3%@28dBm 802.11g 54Mbps OFDM 64QAM BW 20MHz
Connector:	SMA Receptacle, 50 ohm
Receive Noise Figure:	3.0dBm nominal
Operating Temperature:	-40 to 70 degree
Operating Humidity:	Up to 95% relative humidity
Material:	Cast Aluminium
Dimensions:	85x50x21 mm
Operation voltage:	6-16V (power supply included)

FROM  
**25 EUR**

AliExpress™



# Wi-Fi

Wi-Fi cards, antennas



## RF connector adapter kit

You will never lose a RF connection

Widely used for Antennas, Broadcast, Radios, Telecom, Coaxial cable, LMR, CCTV, microwave applications and digital communication system requiring high performance use in all citizens band communication systems, CCTV, mobile radio equipment, ship to shore communications, landing systems and ground control apparatus. Connector Adapter Kit helps technicians and engineers simplify their connecting needs allowing making on the spot connections in just seconds. Kit includes 20 types of reusable coax connectors -- BNC/F/N/SMA/TNC/UHF/-- for male and female adapters that can be used in different combinations to fit most any installation. Simply screw to the connector or other device, then it can be work.

### Specifications

N Type to SMA Series: N female to SMA female, N female to SMA male, N female to SMA female panel mount, N male to SMA male, N female to SMA female, N male to SMA male panel mount

BNC to SMA Series: BNC male to SMA male, BNC male to SMA female, BNC female to SMA male, BNC female to SMA female

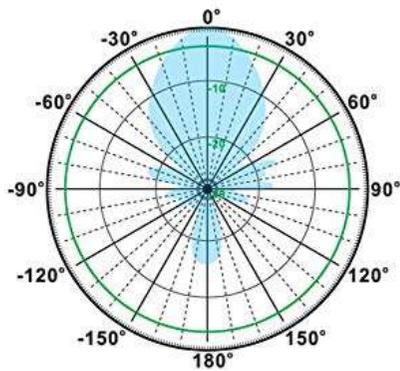
N Type to RP SMA Series: N female to RP SMA male, N female to RP SMA female, N male to RP SMA male, N male to RP SMA female

Other Series: N male to BNC male, N male to BNC female connector, N female to N female, N male to F female, BNC male to F female, SMA female to TNC female

FROM  
**30 EUR**

amazon





## 2.4GHz/15dBi yagi antenna

If you need to get far away, you need it

Wireless yagi Antenna TP512 in most cases cannot be attached directly to the device (Wi-Fi router, signal booster, etc.) without some type of cable converter/adaptor. This Antenna has N-Female cable/connector so it will need the cable/converter from N-Female type to [your device connector type], usually to some pigtail coax RP-SMA cable connector. Also, you can put amp of some kind or signal booster between device and antenna.

### Specifications

Frequency:	2400-2483 MHz
Gain:	15 dBi
VSWR:	<1.5:1
Polarization:	Horizontal or Vertical
Horizontal Beamwidth:	30°
Vertical Beamwidth:	25°
F/B Ratio:	>16 dB
Max Input Power:	100 W
Lightning Protection:	DC Ground
Connector:	N Female
Dimensions:	24.81in
Weight:	0.93 lbs
Length:	9.45in
Reflector Material:	Aluminium Alloy
Mast Size:	Ø40-Ø50mm
Rated Wind Velocity:	210km/h
Operating temperature:	-40~+65C

FROM  
**30 EUR**

amazon



# Wi-Fi

Wi-Fi cards, antennas



## 2.4 GHz/9 dBi omni antenna

A good solution to upgrade your horizons

This Wi-Fi Antennas will significantly increase the range and strength of your Wi-Fi signal. It is only supported for indoor use. This Omni-directional antenna is a direct replacement for the antenna/s that comes standard with your router, access point, VoIP device, or PCI card. Each Antenna is Omni-directional, no aiming is required - it can send and receive Wi-Fi in all directions. This Antenna is stronger than the less powerful booster antennas offered by major manufacturers.

### Specifications

Gain:	9dBi
Frequency Range:	2.4Ghz & 5Ghz
SWR:	≤ 2.0
Polarization:	Linear Vertical
Impedance:	50 Ω Nominal
Direction:	Omni-directional
Connector:	RP-SMA Male
Dimension (mm):	39 cm x 1,5 cm
Net Weight:	50g
Operating temperature:	-20°C ~ + 60°C
Storage temperature:	-30°C ~ + 75°C
Operating Humidity:	0% to 85% (non-condensing)

FROM  
10 EUR

amazon





## Wi-Fi deauther

### The best 2.4 GHz Wi-Fi 802.11n device

While a jammer just creates noise on a specific frequency range (i.e. 2.4 GHz), a deauthentication attack is only possible due to a vulnerability in the Wi-Fi (802.11) standard. The deauther does not interfere with any frequencies, it is just sending a few Wi-Fi packets that let certain devices disconnect. That enables you to specifically select every target. A jammer just blocks everything within a radius and is therefore highly illegal to use. This ESP8266 based development board comes with an integrated 18650 charging system, OLED display and a 3-axis slide switch. It comes installed with the latest ESP8266 Deauther software. Using this device you can perform different attacks to test Wi-Fi networks. Please note that the ESP8266 only supports 2.4GHz. There are many different models available, since the creator's supported device is branded as DSTIKE. For more details on the software, visit: [http://github.com/spacehuhn/esp8266\\_deauther](http://github.com/spacehuhn/esp8266_deauther)

### Specifications

Only 100mA power usage

Up to 35h of battery life with a 3500mAh 18650 cell

Up to 2A charging current

Up to 2.8A output current

Included 8dB antenna

4 LEDs to indicate battery status in real time

Power button: Click to turn on, double click to turn off

Protection: short, over charging, over discharging, temperature

Board ESP8266

Display: SH1106 1.3" OLED

Wi-Fi 2.4 GHz support & Included 8dB antenna and 2dB antenna



AliExpress



# Wi -Fi

Wi-Fi cards, antennas



## Wi - Fi PCB antenna 2.4GHz/5GHz PCB 8dBi antenna

This is a dual band (2.4/5GHz) antenna valid for any Wi-Fi application. It is widely used for projects like Wi-Fi deauther, increasing the range of any standard Wi-Fi device. This kind of antenna is ideal for using them inside any cased project to avoid having external antennas in **outdoor projects**. Inside any **ABS / PVC box** it won't lost much signal and you will boost the Wi-Fi range, extending your coverage area.

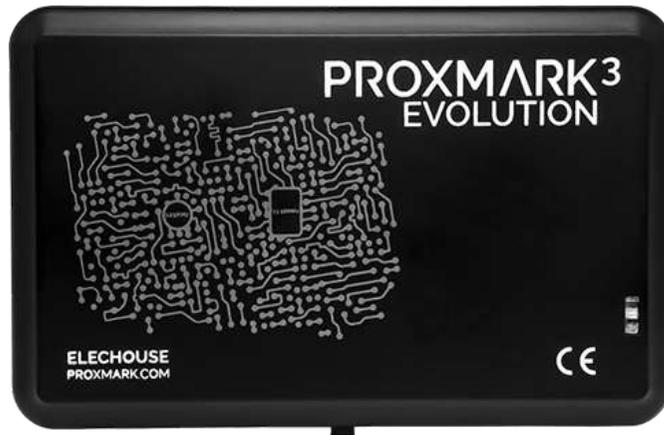
### Specifications

Frequency:	2400-2500 MHz & 4900-5900 MHz
SWR	<= 1.8
Antenna gain:	8 dBi
Polarization:	linear
Impedance:	50 Ohm
Material:	PCB
Cable type:	OD 1.3 mm
Cable length:	150 mm
Connector type:	IPEX / UFL
Connector pull test:	1 Kg

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**8 EUR**

AliExpress





## Proxmark3- EVO

Latest and most powerful NFC device

The Proxmark 3 is a dedicated, highly-capable multi-tool for RFID analysis, providing reading, writing, analysis, snooping, replaying, emulation, modulation, demodulation, decoding, encoding, decryption, encryption for any RFID system operating in the 125/134 KHz (LF) and 13.56 MHz (HF) frequencies. The EVO has been designed and optimised for desktop users and hobbyists. If you are looking for Proxmark 3 for Penetration Testing, please consider the Proxmark 3 RDV4.

### Specifications

CPU:	AT91SAM7S512
Memory:	External 2Mbits Internal 512Kb SPI
Pre-tuned LF Antenna	125KHz & 134KHz (Internal)
LF read range:	40mm @ 55V
Pre-tuned HF Antenna	13.56MHz (Internal)
HF Read Range:	50mm @ 40V
Case material:	ABS
LED:	1x RGB LED
Included RFID Tags / Cards	1x 1k / S50 Card - PVC Card format 1x 'Magic' 1k UID Changeable - PVC Card format 1x HID Tag - PVC Card format 1x T5577 Tag - PVC Card format

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# RFID & NFC

Physical access, cards, magnetic stripe, cars



## Proxmark3- RDV4

Last and most powerful NF device

The Proxmark 3 is a dedicated, highly-capable multi-tool for RFID analysis, providing reading, writing, analysis, snooping, replaying, emulation, modulation, demodulation, decoding, encoding, decryption, encryption for any RFID system operating in the 125KHz-134KHz (LF) and 13.56MHz (HF) frequencies. The Proxmark 3 RDV4 is the latest revision of the Proxmark 3 Platform. It is designed and manufactured by RRG, a company formed by four people instrumental to the Proxmark 3 including:

Chris Hermann (iceman) - Moderator of the Proxmark forums

Kevin (0xFFFF) - Moderator of the Proxmark forums

The RDV 4 revision represents a highly optimised piece of hardware specifically designed for the pen-testing community. It is fully Android Compatible, working with Project Walrus for automated red-teaming

### Specifications

CPU:	SAM7S512
Memory: External	2Mbits Internal 512Kb SPI
LF Read Range:	70mm @ 65V
Pretuned LF Antenna	125KHz & 134KHz (Internal)
HF Read Range:	40 - 85mm @ 44V
HF Read Range (medium antenna):	90mm
HF Read Range (large antenna):	100 - 120mm
Pretuned HF Antenna	13.56MHz (Internal)
RFID Tags / Cards	1x 'Magic' 1k UID Changeable - PVC Card format 1x T5577 Tag - PVC Card format
SIM/SAM Reader	Internal with optional extension
Swappable Antennas	Optional Medium / Long range

FROM  
**329 EUR**



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## SIM/SAM Extension on Proxmark3 RDV4 Secure Element/SIM adaptor

The new version of Proxmark3 family (RDV4) contains special features which might help to understand and analyse Chip-And-PIN cards. This new connector is “hidden” under the base case and can be implemented with the new version of the RDV4 repository based on iceman fork. The Proxmark 3 RDV4 has support for SIM/SAM debugging / programming / manipulation. The command is the “SC” (Smart Card). It has certain functions that can be used to take information from the chip. Specifically, I will write about how I did it manually using the raw command initially to extract data from financial chip credit cards. This method could be applied to many different SIM technologies to interact with the chips.

The SIM/SAM extension connects to the SIM/SAM slot on the Proxmark 3 RDV4. This module provides SIM (Subscriber Identity Module) and (Secure Access Module) support for various contact card systems that are really based on NFC technology. More info:

<https://salmg.net/2018/10/18/proxmark3-rdv4-extracting-data-from-chip-and-pin-cards/>

### Specifications

SIM support

SAM support

Extender module



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# RFID & NFC

Physical access, cards, magnetic stripe, cars



## Proxmark RDV4 Blue Shark Blue Shark and extended range antennas

Owning a Proxmark3 RDV4 means owning the most powerful and complete device for RFID / NFC (LF & HF) testing in the frequencies of 125KHz / 134KHz / 13.56MHz. Therefore, investing some more euros in upgrading it, it's not a bad idea. To improve its range you will be able to find the extended range antennas for LF and HF, giving some extra centimeters for reading cards and tags, what's something more than necessary.

Another new and nice upgrade for it, is the Blue Shark Bluetooth 2.0 upgrade, that permits controlling the proxmark3 wirelessly plus adding an external battery to create an autonomous proxmark3 that can be connected and controlled from your computer or smartphone. The Walrus NFC application has been updated to permit control by Bluetooth. It also fixes the high temperature concerns adding a metal cooler.

<https://www.patreon.com/posts/26897335>

### Specifications

Battery capacity:	400 mAh
Standby time:	3.5h StandBy; 2.9h LF-On; 50min HF-On;
Charging Current:	200mA (plug in USB default charging)
Charging time:	2.5h
Bluetooth power:	4dBm, -85 dBm@2Mbps
Bluetooth distance:	6m (depending on the environment and device orientation)
Size and weight:	54.4mm * 29.4mm * 13.5mm 24g



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## Chameleon Mini Rev.E

Last and most powerful NF device

The Chameleon Mini rebooted is a powerful & portable NFC emulation & manipulation tool. This Chinese reader/writer is a cheap solution for those who **don't** want to spend much money for a developer's device. **Smaller**, faster, easier to use with an incredible battery life and extended features, while still retaining compatibility with the original firmware, it's a "Must-Have" tool for the RFID toolkit. Designed mainly for Windows, including two different GUIs for it. RevE does not copy cards. You can copy/dump cards with another reader device like proxmark3, and cheapest SLC3711 or ACR122 readers. It implements a new NFC attack against the reader to help decrypting Mifare cards that resist classic attack methods.

The code has become opensource during the last years:

<https://github.com/iceman1001/ChameleonMini-rebooted/>

<https://github.com/iceman1001/ChameleonMini-rebootedGUI>

### Specifications

Multiple Chipset Emulation	ASK+BPSK modulation, supporting ISO 14443, NFC, and ISO 1569 MIFARE Classic® 1K (4-bit and 7-bit UID) MIFARE Classic®4K (4-bit and 7-bit UID) MIFARE Ultralight®
Ability to emulate Read / Write / Sniff Operation	MIFARE NTAG®, ICODE, MIFARE DESFire®, iCLASS, LEGIC, etc. Holds up to 8 cards simultaneously, selectable on-the-fly Write stored cards to blank magic tags
UID Sniff	Sniff UIDs on the fly (allows for key generation or simple emulation)
UID Fuzzing / Manipulation	Ability to randomize UIDs for fuzzing and increment / decrement UID
Read / Write Lock	Allow stocked cards to be modified (Live mode) Prevent stocked cards from being modified (Unlimited credits mode)
Advanced Sniffing & Logging	Monitor bits on the RF interface



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# RFID & NFC

Physical access, cards, magnetic stripe, cars



## NFCKi I I

### RFID destruction device

The NFC Kill is the world's only RFID fuzzing tool. It is used to securely disable RFID badges, test RFID hardware, audit access control failure modes, and probe / exploit RFID attack surfaces during penetration testing. It is the only tool available to securely and permanently disable RFID cards in a manner compliant with the GDPR. Clients in high-security environments (Law Enforcement, Government, Corporate and Industrial) use NFC Kill as part of their Data Destruction Policy.

#### Specifications

##### High Frequency (13.56MHz)

Tags: All known tags (MIFARE Family, HID iCLASS, Calypso, Contactless Payment, etc.)

Hardware: Most reader and writer hardware, NFC-equipped phones, Contactless Payment Terminals, etc.

Effective Range: 0 - 6cm

##### Low Frequency (125 - 134KHz)

Tags: All known tags (HID, Indala, etc.)

Hardware: Most reader and writer hardware

Effective Range: 0 - 5cm

##### Ultra High Frequency (850 - 930 MHz)

Tags: Most known tags (EPC Classes 1 - 4, Security Tags, etc)

Hardware: Some reader and writer hardware

Effective Range: 0 - 3cm

Operating Modes: Single Pulse or Continuous (2 Hz / 0.5s)

Battery: Rechargeable Li-ion, 3.3V

Input Frequency: 3.3V

Output Voltage: ~1600V

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## SCM SCL3711

### RFID miniature 13.56MHz reader/writer

SCL3711 has a small form factor to make it the optimal NFC reader and writer for mobile usage. Plug it into your laptop to instantly upgrade your machine with NFC capability. Compatible out of the box with raw mode libNFC and OS/X, Windows and Linux, this is a stable RFID reader / writer perfectly suited and tested with our badges. The SCL3711 is compact and portable, and is a vital part of any RFID / NFC testing toolkit. It is based on the PN532/3. For my experiments with NFC-type cards, I needed a fairly cheap reader which is quite full-featured and compatible with libnfc (a library of NFC functions). This allows for fairly good low-level access to NFC hardware. While cheap readers are available –e.g. the ACR122, some of these have problems with certain functionality. Under the hardware support, the SCL3711 from SCM Microsystems seemed quite good. Lacing the dongle on top of a bit of foil or large metal plate enhances the field, and fixes problems with libnfc thinking the card has been removed during writes.

### Specifications

Operates in the following modes:

ISO/IEC 14443A/MIFARE® Reader/Writer

FeliCa Reader/Writer

ISO/IEC 14443B Reader/Writer

ISO/IEC 14443A/MIFARE Classic® 1K or MIFARE Classic® 4K emulation

FeliCa Card emulation

ISO/IEC 18092, ECMA 340 Peer-to-Peer



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# RFID & NFC

Physical access, cards, magnetic stripe, cars



## HydraNFC

Sniffer / reader / writer / emulator for HF

The HydraNFC is an incredibly powerful and flexible 13.56MHz NFC for sniffing / reading / writing / emulating platform for HF based tags. The Hydra NFC is less expensive, more powerful/extensible than Proxmark3 Hardware and does not require an FPGA, since all is done by the MCU Cortex M4F@168MHz with the help of HydraBus with an ultra-fast unique algorithm to sniff & decode in real-time PICC/PCD NFC cards. It also supports Wiegand protocol for sniffing BLE data transfer operations inside NFC reader's network.

### Specifications

Supports NFC Standards NFCIP-1 (ISO/IEC 18092) and NFCIP-2 (ISO/IEC 21481)

Completely Integrated Protocol Handling for ISO15693, ISO18000-3, ISO14443A/B, and FeliCa

Integrated Encoders, Decoders, and Data Framing for NFC Initiator, Active and Passive Target

Operation for All Three-Bit Rates (106 kbps, 212 kbps, 424 kbps) and Card Emulation

RF Field Detector With Programmable Wake-Up Levels for NFC Passive Transponder Emulation

Programmable System Clock Frequency Output (RF, RF/2, RF/4) from 13.56-MHz Crystal

Programmable Modulation Depth

Dual Receiver Architecture With RSSI for Elimination of "Read Holes" and Adjacent Reader System or Ambient In-Band Noise Detection

Programmable Output Power: +20 dBm (100 mW), +23 dBm (200 mW)

Support any protocols under 13.56 MHz with modulation depth OOK (100%) or ASK (from 7% to 30%)

Support low-level Direct Mode 0 (Raw RF Sub-Carrier Data Stream) or intermediate level (for special tags, not ISO compliant like MIFARE Classic® ...) Special Direct Mode for TX and Direct Mode 1 for RX using ISO encoders/decoders without protocol framing

Support of microSD (FAT16/FAT32) card up to 32GB to store the readings and scripts

Basic UID read for Vicinity/ISO15693

Basic UID read for ISO14443-A/MIFARE® card 4 or 7bytes UID

Read MIFARE Ultra light® tag content (full dump)

Tag Emulation UID ISO14443A & MIFARE Classic® 1K

Sniffer mode in an autonomous/stand-alone mode to store all readed UIDs.

Real-time ISO14443A sniffer mode

FROM  
**175 EUR**



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# RFID & NFC

Physical access, cards, magnetic stripe, cars



## ACR-122U

13.56MHz RFID/NFC reader/writer

The ACR122U NFC Reader is a PC-linked contactless smart card reader/writer developed based on 13.56 MHz (HF) Contactless (RFID) Technology. Compliant with the ISO/IEC18092 standard for Near Field Communication (NFC), it supports not only MIFARE® and ISO 14443 A and B cards, but also all four types of NFC tags. This is a very basic model for playing with RFID/NFC technologies for hackers, but it could be a good first step to enter this world. ACR122u uses NXP PN531/532/533 which works with libnfc (an opensource library for NFC/RFID devices that exploits a hidden mode of PN532 chipset). This hidden mode allows using a raw mode for writing, relay, cloning, cracking. It also permits writing un-writeable Block 0 (UID) using some special modified cards. **It's a very good option for beginners.** Libraries and tools available in: <http://nfc-tools.org>

### Specifications

Dimensions	98.0 mm (L) x 65.0 mm (W) x 12.8 mm (H)
Weight	70.0 g
Compliance / Certifications	ISO 18092, ISO 14443, PC/SC, CCID, EN60950/ISO 60950, CE, FCC, MIC, KC, VCCI, RoHS 2, USB Full Speed, Microsoft® WHQL
Interface	USB Full Speed 2.0
Operating Distance	Up to 50 mm (depends on the tag type)
Supply Voltage	Regulated 5V DC
Supply Current	200mA (operating); 50mA (standby); 100mA (normal)
Operating Temperature	0-60 °C
Operating Frequency	13.56 MHz
Smart Card Interface Support	ISO14443 Type A & B, MIFARE, FeliCa 4 types of NFC (ISO/IEC18092) tags
Operating System Support	Windows® Linux® Mac OS® Android™ 3.1 and above

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# RFID & NFC

Physical access, cards, magnetic stripe, cars



## RFID pentesters pack Multiple RFID/NFC cards & badges

For cloning and testing all the different RFID/NFC cards and badges, a NFC-hacker have to own a large kit of special blank writable badges and cards. This kind of cards must have the UID writable, and the vast majority of cards you will find in internet will not permit this. The RFID Pentester Tag Pack is a curated collection of the must-have tags when working with RFID tools. They include multiple basic cards and some advanced cards as well. There are three different kits available for purchase.

### Specifications

- MIFARE Classic® Compatible 1K UID Changeable (coin format)
- MIFARE Classic® Compatible 1K UID Changeable (fob format)
- MIFARE Classic® Compatible 4K UID Changeable
- MIFARE Ultralight® Compatible UID Changeable
- NTAG® 213 Compatible UID Changeable
- MIFARE Classic® Compatible 1K Direct Write UID
- MIFARE Classic® Compatible 4K Direct Write UID
- MIFARE Ultralight® Compatible EV1 Direct Write UID
- MIFARE Classic® Compatible 4K 7-byte UID Changeable
- MIFARE Classic® Compatible 1K UID One Time Changeable (fob format)
- MIFARE Ultralight-C® Compatible UID Changeable
- NTAG® 2xx / Ultralight Compatible Emulator
- MIFARE DESFire® Compatible Emulator 4-byte UID
- MIFARE DESFire® Compatible Emulator 7-byte UID



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## BLEKey

### Bluetooth Low Energy Wiegand sniffer

BLEKey is a Bluetooth Low Energy (BLE) enabled tap for the Wiegand protocol, which is the most widespread protocol for proximity card reader systems but is outdated and should be replaced. BLEKey can be installed in a reader to passively sniff Wiegand data, and can emulate cards on that reader. By the details given by Mark Baseggio and Eric Evenchick, you should be able to install BLEkey in less than 2 minutes and BLEkey will have the capacity of storing 1500 RFID cards, this stored cards can after be downloaded to your mobile phone via Bluetooth. One interesting feature of BLEkey is the capability of disabling the card reader for 2 minutes after the crook has opened the door with the cloned card. All data can be offloaded to a phone with BLE support. Source and design files:

<https://github.com/linklayer/blekey>

Whitepaper from Blackhat USA 2015 talk:

<https://www.blackhat.com/docs/us-15/materials/us-15-Evenchick-Breaking-Access-Controls-With-BLEKey-wp.pdf>

Blackhat USA 2015 Talk:

<https://www.youtube.com/watch?v=seKas8KFcSI>

### Specifications

Wiegand BLE protocol compatible

BLE sniffer

It can also be paired with a long range reader to create a card skimmer.

BLEKey requires a CR1632 battery (not included) to provide power.

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**35 EUR**

**HACKER  
WAREHOUSE**



# RFID & NFC

Physical access, cards, magnetic stripe, cars



## RFID blocking sleeves

You need to protect your cards now

15-Pack Identity Theft Prevention RFID Blocking Sleeves by Boxiki Travel prevent thieves from stealing critical information electronically stored on your smart cards, including account numbers, PIN numbers, license numbers, expiration dates, card security codes (CSC), card verification values (CVV), names, addresses, dates of birth, and much more. Criminals use sophisticated electronic devices to scan your smart cards and passport and steal the information stored on them. They can do this from several feet away, without you ever knowing your private financial and identity information has been stolen.

That information is used within seconds to empty your bank accounts, run up massive charges, and open fraudulent accounts in your name. It can take weeks and months (if ever!) to recover from the financial damage of identity theft and online fraud... the only solution is not to be a victim!

### Specifications

Advanced RFID blocking material

Secure from electromagnetic intrusion

Thin and lightweight, fit in travel wallets

Water- and tear-resistant

FROM  
**11 EUR**

amazon





## MagSpoofer

### Magnetic stripe emulator device

The MagSpoofer, originally created by Samy Kamkar is a wireless magnetic stripe emulator. This amazing little device can emulate all three tracks of a magnetic stripe card without actually being swiped. Rysc Corp revised the original design to include an integrated antenna, on/off switch and a convenient coin cell battery holder. The MagSpoofer comes fully assembled, programmed and tested (batteries included). To work with the MagSpoofer you will need the following:

- AVR Programmer
- MagStripe Reader (Recommended)

### Specifications

Dimensions:	8.5 x 5.5 x 0.08 cm
PCB Thickness:	0.8mm
Weight:	10 g
In the Box:	MagSpoofer and Battery
PCB Finish:	ENIG
RoHS Compliant:	Yes
Manufacturer:	Rysc Corp
Made in:	USA
License:	GPL



# RFID & NFC

Physical access, cards, magnetic stripe, cars



## MagTek 21040145 SureSwipe 2x Head 3x Track Magnetic Stripe Reader

The MagTek 21040145 SureSwipe dual-head triple-track magnetic stripe card reader has a built-in USB cable to connect to the host system, and can be used to swipe and read the magnetic stripe on the back of a credit or debit card or another magnetic stripe card. Triple-track magnetic card readers can read and capture data from all three tracks typically present in a magnetic stripe to complete a transaction. Two magnetic heads allow a card to be read with one swipe, whichever way the magnetic stripe is facing. The bidirectional configuration of the reader enables cards to be swiped backward or forward at a speed of up to 60" per second. The built-in USB cable can be plugged into the USB 2.0 port of a computer or another host system to transmit card data and power the magnetic card reader. USB keyboard emulation enables the reader to transmit data to host systems and applications designed to receive keyboard input. An LED indicator turns red to alert the user of a decoding error.

### Specifications

Tracks:	Three-track magnetic card reader
Heads:	Two magnetic heads permit reading both sides
Direction:	cards can be swiped backward or forward
Speed:	Reader speed of up to 60" per second
Connection:	USB keyboard emulation (HID)
Weight:	4.5 oz.
Size:	1.23 x 1.28 x 3.94 x inches (H x W x D)

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**50 EUR**

amazon



# HID & Keylog

Rubberducky, mouse injection, wireless keyboards



## WHID injector USB rubberducky on steroids

WiFi HID Injector for Fun & Profit – An USB Rubberducky On Steroids. Customized HW based on Atmega 32u4 and ESP-12S. This device allows keystrokes to be sent via Wi-Fi to a target machine. The target recognises the Ducky as both a standard HID keyboard and a serial port, allows interactive commands and scripts to be executed on the target remotely.

Hardware Design Author: Luca Bongiorno .

<https://github.com/whid-injector/WHID>

[https://m.youtube.com/channel/UCzh8wITSYbdZCs\\_Djym5UQ](https://m.youtube.com/channel/UCzh8wITSYbdZCs_Djym5UQ)

<https://github.com/sensepost/USaBUSe>

[https://github.com/spacehuhn/wifi\\_ducky](https://github.com/spacehuhn/wifi_ducky)

<https://github.com/basic4/WiDucky>

<https://blog.netapsys.fr/whid-ninja-the-wireless-rubber-ducky/>

### Specifications

Atmega 32u4

Arduino friendly ESP 12 (ESP8266 Module)

WiFi (both AP and Client modes)

TCP/IP Stack

DNS Support

4MB Flash (3M SPIFFS), Flash speed 40 MHz

Pinout for weaponizing USB gadgets

SPI mode DIO (AVRISP mkII programmer mode)

UART speed 115.2K

HALL Sensor for easy unbrick

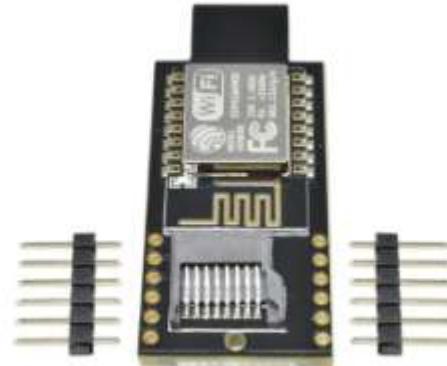
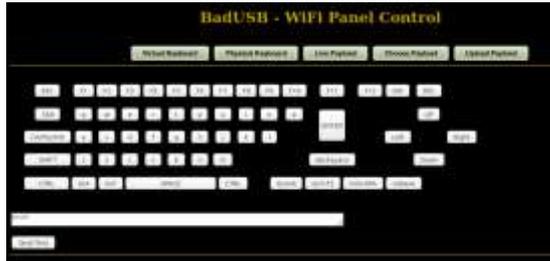
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# Hi D & Keylog

Rubberducky, mouse injection, wireless keyboards



## Badusb Wi - Fi microSD

The most complete Rubberducky

This brand new USB rubberducky or badusb device offers many new possibilities, since it includes both interesting functionalities (microSD for payload storage and html pages and Wi-Fi interface for controlling it from the distance). It will create a Wi-Fi AP in which you connect with the smartphone or computer. Then you have to open your browser and enter the IP address <http://192.168.4.1> and you will control it

You can find the firmware and the instructions for flashing it in the following github:  
[https://github.com/joelsernamoreno/badusb\\_sd\\_wifi](https://github.com/joelsernamoreno/badusb_sd_wifi)

There is more info on:  
<https://github.com/puckk/CJMCU-3212>

### Specifications

Microcontroller ATMEGA32u4

SOC ESP8266 (ESP-12E)

Storage: MicroSD card (FAT32 format)

Exposed GPIO ports for upgrading features

PCB based 2400 MHz antenna

Also known as CJMCU-3212 Virtual Keyboard Module



AliExpress





## Badusb microSD

Badusb with SD card for your payloads

This is one of the last developments related to rubberduky or badusb devices. This device is based on the ATMEGA32U4 microprocessor which is able to emulate many USB modes like HID, used for injecting key presses to the target system. The main processor is based on Arduino Leonardo R3 development board. The improvement is that a microSD card slot is included to allow storing many different payloads. The microSD card has to be FAT32 formatted in order to be recognized.

### Specifications

High Performance, Low Power AVR® 8-Bit Microcontroller Advanced RISC Architecture

16/32KB of In-System Self-Programmable Flash

1.25/2.5KB Internal SRAM - 512Bytes/1KB Internal EEPROM

Programming of Flash, EEPROM, Fuses, and Lock Bits through the JTAG Interface USB 2.0 Full-speed/Low Speed

CPU Reset possible on USB Bus Reset detection

48MHz from PLL for Full-speed Bus Operation

USB Bus Connection/Disconnection on Microcontroller Request

Crystal-less operation for Low Speed mode Peripheral Features

On-chip PLL for USB and High Speed Timer: 32 up to 96MHz operation

One 8-bit Timer/Counter with Separate Prescaler and Compare Mode ATmega16U4/ATmega32U4 8-bit Microcontroller with 16/32K bytes of ISP Flash and USB Controller

One 10-bit High-Speed Timer/Counter with PLL (64MHz) and Compare Mode

Four PWM Channels with Programmable Resolution from 2 to 16 Bits

Six PWM Channels for High Speed Operation, with Programmable Resolution from 2 to 11 Bits

Output Compare Modulator - 12-channels, 10-bit ADC (features Differential Channels with Programmable Gain)

Programmable Serial USART with Hardware Flow Control

Master/Slave SPI Serial Interface

Operating Voltages 2.7 - 5.5V Operating temperature

FROM  
**4.5 EUR**

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# HI D & Key l og

Rubberducky, mouse injection, wireless keyboards



## USBNi nj a

### Wi rel ess BadUSB / Rubberducky

The USBNinja is a highly covert USB exploit framework allowing for wireless remote triggering of custom payloads. While dormant, the USBNinja functions as a regular USB Cable: Data Transfer, Recharging, etc. However, when triggered (via smartphone or dedicated long-range antenna) - it executes its pre-programmed payload on the host device. Emulating keyboard and mouse actions, payloads are completely customisable, and can be highly targeted. Undetectable by firewalls, AV software or visual inspection, the USBNinja is an ideal tool for penetration testers, police and government.

### Specifications

#### Cable Physical Characteristics

Length: 1 m , Colour: white

Connector options: Micro-USB, USB Type-C, Lightning

Voltage range: 4-25 V (supports fast charging)

Current consumption: 10 mA (typical)

Full-rate USB data transmission

#### Remote Control

High-powered Bluetooth wireless (customizable name and password)

Battery: 3.6 V, 40 mAh, rechargeable

**Standby current: 80  $\mu$ A**

Transmission current: 30 mA

Range (under ideal conditions with antenna):

30 m with 2 dBi, 3 cm antenna

50 m with 3 dBi, 11 cm antenna

100 m with 18 dBi directional panel antenna

#### Mobile App

Alternative to remote control for triggering payload

Open source and freely available



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# HID & Keylog

Rubberducky, mouse injection, wireless keyboards



## Digispark Kickstarter mini Cheap and fully-working Rubberducky

This cheap USB dongle is based on the digispark Kickstarter project for an ATTINY085 USB development board. It works as the original rubberducky permitting to insert any HID payload that permits quickly hacking any OS (Windows, Linux and MacOS). There are many github accounts available with payload samples for Powershell, CMD and other OS exploits that permit to run and download many exploit codes from internet or directly from the devices internal memory.

### Specifications

Support for the IDE > 1.0

Power from USB bus or external source 7-35V

On-board 500mA DC regulator

Built in USB and serial debugging

6 I/O pins (GPIO)

8k flash memory

I2C and SPI buses

PWM on 3 GPIO pins

ADC on 4 pins

Power LED and Test/Status LED on Pin 0

FROM  
**1.3 EUR**

AliExpress



# HI D & Key I og

Rubberducky, mouse injection, wireless keyboards



## Ai rDri ve KeyI ogger Max

One of the most advanced keyI oggers

The AirDrive Keylogger Max is an ultra-small, incredibly powerful USB keylogger with wireless egress capabilities packed into a tiny footprint. Not only acting as a Wi-Fi access point, the AirDrive Keylogger Max also acts as a wireless bridge, allowing the device itself to stream captured data in real time, dispatch report emails and timestamp logs. It can be accessed and controlled via any Wi-Fi capable device such as a computer, laptop, tablet, or smartphone. Finally, when plugged into a computer, it functions as an 8GB USB thumb drive - totally masquerading its real use. **Since it is maybe the most complete hardware keylogger you'll find in the market, it's fair to comment that it lacks of good build quality and service.**

### Specifications

8GB Internal Flash Memory

Wi-Fi Interface: WEP, WPA, WPA-2 security

Wi-Fi-Bridge allows for:

Real time captured data streaming

Automatic emailed log reports

Timestamping

Off-site remote-control

Encrypted internal memory

Masquerades as an 8GB flash drive

Works with 100% of USB Keyboards

Supports 40 international keyboard layouts

UTF-8/16 compatible logging

Device management via web-interface. No apps or software required

Management panel accessible from any computer, telephone, etc

Over-the-air data exfiltration

FROM  
**99 EUR**



LAB|401





## GL - I net AR150

### OpenWRT/LEDE router Pi napp l e

These small router based in OpenWRT (now named as LEDE) operating system are the best option for those who need a very small platform with low power consumption that run Linux. The included hardware is based on Qualcomm SOC, which includes a Wi-Fi interface compatible with monitor mode, what allows scanning Wi-Fi APs and stations. The CPU doesn't offer an incredible performance, but it's enough for small projects as sensors, scanners, deauthers, MiTM, etc. Especially the AR150 model uses a very similar hardware to the Hak5 Pineapple Nano device but for a much reduced price. Therefore a hacker migrated the Pineapple firmware to this device:

<https://www.securityaddicted.com/2016/11/17/weaponizing-gl-inet-gl-ar150/>

<https://github.com/SecurityAddicted/pineapple-ar150>

### Specifications

CPU	Atheros QCA9331 SoC, 400MHz
Memory	DDRII 64MB
Storage	16MB Flash
Interfaces	1 WAN, 1 LAN, 1 USB2.0, 1 micro USB (power), 1 Reset button, UART
Frequency	2.4 GHz
Transmission rate	150Mbps
Max TX Power	18 dBm
Protocol	802.11 b/g/n
External Storage support	FAT32/EXFAT/EXT4/EXT3/EXT2/NTFS
Webcam support	MJPEG, YUV
DIY features	UART, 4xGPIO, 3.3V & 5V power port
External antenna support	Yes (GL-AR150-Ext)
PoE support	Yes (GL-AR150-Ext-2)
Power input	5V/1A consumption: <1.5W
Dimension, Weight	58*58*25mm, 39g

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**27 EUR**

GL·iNet



# Network

Routers, modems, VLAN, NAC



## GL - I net AR750S slate Gi gabi t Wi rel ess Router

Slate brings all your workplaces under a digital roof with a secure VPN. Connecting your global offices with Slate so the staff from all locations can communicate with each other remotely and all data is shared securely. Slate is designed for frequent travellers; it is therefore both compact and lightweight. It can easily slip into a backpack or even your pocket and take it with you anywhere. It also comes with a USB port for connecting a 3G/4G USB modem. And of course OS is opensource LEDE/OpenWRT based.

### Specifications

CPU	Qualcomm QCA9563 SoC, 775MHz CPU
Memory	DDRII 128MB
Storage	16MB NOR Flash and 128MB NAND Flash
Interfaces	3xWAN/LAN, 2 LAN, 1 USB2.0, 1 Reset button, UART
Frequency	2.4 GHz & 5 GHz
Transmission rate	150Mbps
Max TX Power	20dBm (2.4GHz), 20dBm(5GHz)
Wi-Fi	300Mbps(2.4G) + 433Mbps(5G) high speed Wi-Fi
External Storage support	FAT32/EXFAT/EXT4/EXT3/EXT2/NTFS
DIY features	UART, GPIO, 3.3V & 5V power port
Power input	5V/2A
Power consumption	<6W
Dimension, Weight	100mm X 68mm X 24mm, 86g

**FROM**  
**70 EUR**

GL·iNet





## GL - I net AR300M shadow

### OpenWRT/LEDE based advanced router

These small routers based in OpenWRT (now named as LEDE) operating system are the best option for those who need a very small platform with low power consumption that run Linux. The included hardware is based on Atheros Qualcomm SOC, which includes a Wi-Fi interface compatible with monitor mode, what allows scanning Wi-Fi APs and stations. The CPU doesn't offer an incredible performance, but it's enough for small projects as sensors, scanners, deauthers, MITM, etc.

### Specifications

CPU	Qualcomm Atheros QCA9531, 650MHz
Memory	DDRII 128 MB
Storage	128MB Nand Flash + 16MB Nor dual flash
Interfaces	1 WAN, 1 LAN 1 USB2.0, 1 micro USB (power), 1 Reset button, 1 switch
Frequency	2.4GHz
Transmission rate	300 Mbps
Max TX Power	18dBm
Protocol	802.11 b/g/n
External Storage support	FAT32/EXFAT/EXT4/EXT3/EXT2/NTFS
Webcam support	MJPEG, YUV
DIY features	UART, GPIO, PCIe interfaces
External antenna support	Yes
PoE support	Yes
Power input	5V/1A consumption <1.5W
Dimension, Weight	58*58*25mm, 39g

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# Network

Routers, modems, VLAN, NAC



## GL - I net USB150 Mini router OpenWRT/LEDE based router devices

These small USB stick sized router is based in OpenWRT (now named as LEDE) operating system. It is a good option for developing any application based on a very small platform with low power consumption running Linux. The included hardware is based on Qualcomm SOC, which includes a Wi-Fi interface compatible with monitor mode, what allows scanning Wi-Fi APs and stations. **The CPU doesn't offer an incredible performance, but it's enough for small projects as sensors, scanners, deauthers, MiTM, etc.** If you need just to protect your laptop navigation by creating another layer between Internet and you, you can use this minirouters to connect by Tor or by VPN in a way that nobody can get up to your network traffic.

### Specifications

CPU	QCA9331, 400MHz
Memory	64MB
Storage	16MB Flash
Frequency	2.4GHz
Transmission rate	150Mbps
Protocol	802.11 b/g/n
Power input	5V/1A
Power consumption	<1W
Buttons	Reset
Connection	USB to Ethernet interface
Dimension, Weight	82*24*11mm, 10g

FROM  
**27 EUR**

GL·iNet





## GL - I net Mi fi

### OpenWRT/LEDE 4G router with battery

This small sized 4G LTE router offers a very good option for creating a hacking device that also needs to be connected to internet. The hardware is based on an Atheros SOC that includes a Wi-Fi interface that allows monitor mode for scanning and capturing raw Wi-Fi information. It also offers free GPIO, UART ports for connecting a GPS or any other device. The 4G connectivity option is based on an internal PCIe port that is populated with a Quectel EC25 4G WWAN card. All the firmware, SDK and code is open sourced and available through github. It also has an internal battery and charger, so it can be used in standalone mode. There is a slot for the SIM card and another for a microSD card, what allows to store captures, files, payloads, etc. There is also a free USB-A connector for attaching an extra Wi-Fi card or other peripheral devices.

### Specifications

CPU	Atheros AR9331, @400MHz
Memory/Storage	DDR 64MB/ FLASH 16MB
Interfaces	1 WAN, 1LAN, 1 USB2.0, 1 micro USB (power), SIM card slot, MicroSD card slot, Antenna SMA mount holes
Frequency	2.4GHz
Transmission rate	150Mbps
Max TX Power	18dBm
Protocol	802.11 b/g/n
External Storage support	FAT32/EXFAT/EXT4/EXT3/EXT2/NTFS
Power input	5V/2A
Power consumption	<3W
Dimension, Weight	105*72*27mm, 170g

**FROM**  
**109 EUR**

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# Network

Routers, modems, VLAN, NAC



## Quectel EC25-EU 4G modem 4G/3G/GSM/GPRS + GPS/GNSS

Quectel EC25 Mini PCIe is a series of LTE category 4 module adopting standard PCI Express® MiniCard form factor (MiniPCIe). It is optimized specially for M2M and IoT applications, and delivers 150Mbps downlink and 50Mbps uplink data rates. EC25 Mini PCIe contains 5 variants: EC25-J Mini PCIe, EC25-E Mini PCIe, EC25-AU Mini PCIe, EC25-V Mini PCIe and EC25-A Mini PCIe. This makes it backward-compatible with existing EDGE and GSM/GPRS networks, ensuring that it can be connected even in remote areas devoid of 4G or 3G coverage. EC25 Mini PCIe supports Qualcomm® IZat™ location technology Gen8C Lite (GPS, GLONASS, BeiDou, Galileo and QZSS). The integrated GNSS greatly simplifies product design, and provides quicker, more accurate and more dependable positioning. A rich set of Internet protocols, industry-standard interfaces and abundant functionalities (USB drivers for Windows XP, Windows Vista, Windows 7, Windows 8/8.1, Windows 10, Linux, Android/eCall\*) extend the applicability of the module to a wide range of M2M applications such as industrial router, industrial PDA, rugged tablet PC, video surveillance and digital signage.

### Specifications

LTE category 4 module optimized for broadband IoT applications

Worldwide LTE, UMTS/HSPA+ and GSM/GPRS/EDGE coverage

Standard PCI Express® MiniCard form factor (Mini PCIe) ideal for manufacturers to easily integrate wireless connectivity into their devices

MIMO technology meets demands for data rate and link reliability in modem wireless communication systems

Multi-constellation GNSS receiver available for applications requiring fast and accurate fixes in any environment

FROM  
**45 EUR**

AliExpress





## USB to mini PCI e adapter Modem adapter with SIM socket

The New version 2.0-3 MINI PCI-E WWAN TO USB 4-Pin ADAPTER WITH SIM CARD SLOT Ideal for testing the WWAN cards. You don't need to break or open your laptop to test your WWAN modules. No risk! The adapter has integrated with a SIM card slot and 1 or 2 WWAN antenna. It can work with most of WWAN modules. Very easy to use. Don't need extra drivers. Just make sure you have installed the drivers & software for your WWAN card. It works with desktop computer and laptop computer with WINDOWS OS (XP & VISTA). With SIM/UIM card slot at the switch interface, it enables you to use 3G module directly when SIM card installed. Stable performance, strong internet performance. Built-in antenna switch port, can connect super external antenna. Also used for 3G module flash, test, and unlock. Compatibility (3G network card: Huawei, ZTE, AIRCARD, OPTION, Samsung, HuaYu, Datang): (The following modules have been tested in advance. If you want to get it work with other WWAN modules, we cannot guarantee if it works)

### Specifications

PCIe to USB adapter

SIM / UIM card slot present

1 / 2 WWAN antenna

USB 2.0 Interface

FROM  
**14 EUR**

amazon



# Network

Routers, modems, VLAN, NAC



## Waveshare 4G modem + GPS 4G/3G/2G/GSM/GPRS + GPS/GNSS

In many of your outdoor/indoor projects you'll need to have any kind of IoT Internet communication system. Actually LTE (4G) is the most extended system to access Internet wirelessly. There are many operators available through the world and the data connection prices are not very expensive. Also the broadband LTE data bandwidth is more than acceptable, offering high speed and wide coverage communications all over the world. This modem can be easily integrated in your Raspberry pi projects as an extra, connecting it with the Raspberry board by using the 40 pin available connector. It includes a SIM socket for the operator card and many possible configurations for connecting it to other boards. You can also use it as a normal 4G external modem thanks to the USB connector. The easiest software for using it in Linux is wvdial.

### Specifications

Raspberry Pi connectivity, compatible with Raspberry Pi Zero/Zero W/Zero WH/2B/3B/3B+

Supports dial-up, telephone call, SMS, MMS, mail, TCP, UDP, DTMF, HTTP, FTP, etc.

Supports GPS, BeiDou, Glonass, LBS base station positioning

On-board USB interface, to test AT Commands, get GPS positioning data, and so on

On-board CP2102 USB to UART converter, for serial debugging

Breakout UART control pins, to connect with host boards like Arduino/STM32

SIM card slot, supports 1.8V/3V SIM card

TF card slot for storing data like files, messages, etc.

On-board audio jack and audio decoder for making telephone call

2x LED indicators, easy to monitor the working status

On-board voltage translator, operating voltage can be configured to 3.3V or 5V via jumper

Baudrate: 300bps ~ 4Mbps (default: 115200bps)

Autobauding baudrate: 9600bps - 115200bps

Control via AT commands (3GPP TS 27.007, 27.005, and V.25TER command set)

Supports SIM application toolkit: SAT Class 3, GSM 11.14 Release 99, USAT

Comes with development resources and manual (examples for Raspberry Pi/Arduino/STM32)



AliExpress





## LTE PCB Antenna

### 4G/3G/2G/GSM/GPRS + GPS/GNSS

When designing your own hacking devices and integrating mobile network based technologies you will need to find an antenna that meets your needs. This small PCB antenna incorporates an UFL connector that is very usual in embedded devices. PCB antennas are an adequate solution for projects in which there isn't place enough for using external omnidirectional antennas. This antenna will work in all the necessary bands for including 4G / 3G/ 2G/ GSM/ GPRS + GPS/GNSS applications that need to be connected to the same RF circuit.

### Specifications

LTE band: 28/38\*2

Frequency: 703~803/2520~2620(MHz)

Antenna size: 75 x 21 (mm)

PCB: 0.6 mm

Low Bands

(5, 8, 12, 13, 18, 19, 20, 28)

TX frequencies: 699 to 915 MHz

RX frequencies: 729 to 960 MHz

Mid Bands

(1, 2, 3, 4)

TX frequencies: 1710 to 1980MHz

RX frequencies: 1805 to 2170 MHz

RF Cable Assemblies: SMA(F) JK-IPEX MHF U.FL 1.13 100MM

Weight: 40g

FROM  
**12 EUR**

 **seeed**  
The IoT Hardware Enabler



# BUS

HW hacking, JTAG, cars, motorbikes



## Bus pirate v.3.6

Last and most powerful NF device

Every prototype starts with a Bus Pirate. One open source development tool. So many features. Only \$30 bucks. Bus Pirate v3 is a universal bus interface that talks to electronics from a PC serial terminal. Get to know a chip without writing code. Eliminates a ton of early prototyping effort with new or unknown chips. A laser cut acrylic case for Bus Pirate v3.6 is also available. This board provides 1-Wire, I2C, SPI, JTAG, asynchronous serial (UART), MIDI, PC keyboard, HD44780 LCDs, and generic 2- and 3-wire libraries for custom protocols. **Don't** forget to buy the cable kit from the same store.

[http://dangerousprototypes.com/docs/Features\\_overview](http://dangerousprototypes.com/docs/Features_overview)

### Specifications

0-5.5volt tolerant pins

0-6volt measurement probe

1Hz-40MHz frequency measurement

1kHz - 4MHz pulse-width modulator, frequency generator

On-board multi-voltage pull-up resistors

On-board 3.3volt and 5volt power supplies with software reset

Macros for common operations

Bus traffic sniffers (SPI, I2C)

A bootloader for easy firmware updates

Transparent USB-> serial mode

10Hz-1MHz low-speed logic analyser

Servo driver

Can program many AVR microcontrollers

Supported by AVRdude

Can emulate the AVR STK500 v2 with alternate ST500 Clone firmware

Programs FPGAs and CPLDs with alternate XSVF firmware

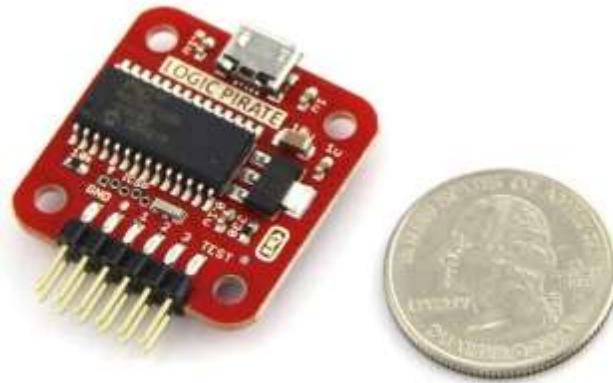
Scriptable from Perl, Python, etc.

FROM  
**30 EUR**

**DANGEROUSPROTOTYPES**  
OPEN SOURCE HARDWARE PROJECTS

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The IoT Hardware Enabler





## Logic pirate

Logic analyser for complicated signals

The Logic Pirate is an inexpensive, yet capable open source logic analyzer. It can sample 8 channels at 20 million samples per second, and may be overclocked for even faster acquisitions. It's designed to support the open source SUMP logic analyzer protocol with software available for most operating systems.

[http://dangerousprototypes.com/docs/Logic\\_Pirate](http://dangerousprototypes.com/docs/Logic_Pirate)

### Specifications

8 channels

256,000 Samples recording size

20 MHz sampling speed, can potentially be overclocked to 60 MHz

No compromise on sample size when combining different speeds or number of channels

Simple configurable edge detection triggers on all inputs (simple OR trigger)

Configurable ratio of samples from before and after the trigger (rolling sample buffer)

5 V tolerant inputs (LOW-level voltage < 0.8 V, HIGH-level voltage > 2.0 V)

About 500 kB/s transfer speed to the PC (256 kSamples take about 0.5 seconds)

Data capturing can be stopped from the host software anytime

Cross platform host software for Windows, OS X, and Linux

DIY-friendly 0603 parts and SOIC packages used on a 2-layer board

On board 3.3 V regulator can supply up to 400 mA to an external circuit

Tiny 3cm x 3cm PCB

Firmware updates via built-in USB bootloader

Probe cables and acrylic case available from Seeed Studio

Open source PCB (EAGLE) and firmware files

OLS Analysis software included

OLS Analyzers for a large number of protocols: 1-Wire, I2C, JTAG, SPI, UART, etc.

FROM  
**30 EUR**

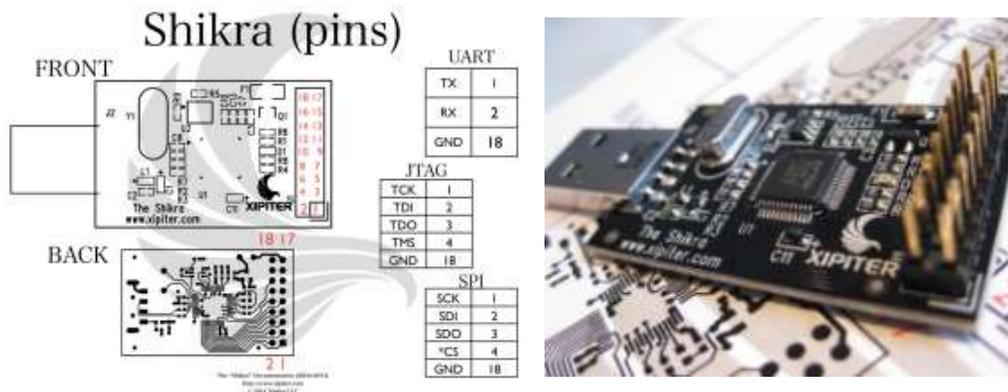
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OPEN SOURCE HARDWARE PROJECTS

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The IoT Hardware Enabler



# BUS

HW hacking, JTAG, cars, motorbikes



## The Shikra

Bus pirate JTAG big brother

The Bus Pirate, as well as the Shikra, are devices that enable a user to interact with different types of protocols. Protocols such as JTAG, SPI, I2C, UART and GPIO via a USB interface. Once you've identified all your pin-outs, protocols, data rates, and device addresses, it's usually best to move on to more robust single-purpose tools. FTDI's FT232H is a more powerful chip compared to the older brother to FT232R USB to UART adapter. The "-H" model of chips are widely used in JTAG adapters but also support several different serial protocols, plus the ability to bit-bang custom ones. The Shikra is Xipiter's nice, dead-simple FT232H device that allows you to use all these different modes. Bus Pirate, since it is well supported by OpenOCD - it's incredibly slow, and required frequent reconnecting for hardware reset. The Shikra was equally as easy to get wired up for JTAG and use with OpenOCD.

<https://www.xipiter.com/musings/category/iot>

### Specifications

JTAG

SPI

I2C

UART

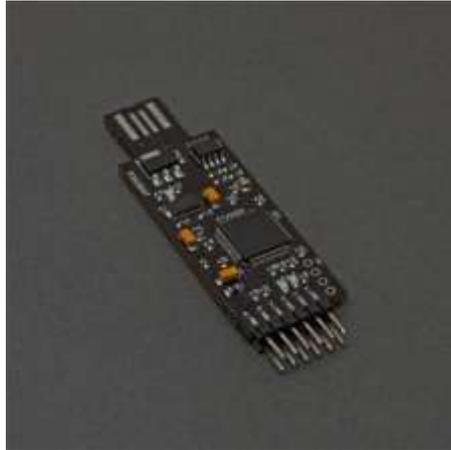
GPIO

FROM  
**45 EUR**

**DANGEROUSPROTOTYPES**  
OPEN SOURCE HARDWARE PROJECTS

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The IoT Hardware Enabler





## Exploit Nano

Bus pirate JTAG big brother

Exploit-NANO is a compact hacker friendly multi-purpose, multi-protocol hardware tool mainly used to debug and program microcontrollers/processors and flash chips. Exploit-NANO can be configured to support hardware protocols including, UART, I2C, SPI, ARM SWD and JTAG. Even though it runs on 3.3V, all I/O pins are 5V tolerant.

<https://exploit.io/products/exploit-nano>

### Specifications

USB 2.0 High Speed interface

Memory - onboard 2 kb EEPROM

Supports USB-TTL mode (virtual com interface)

Supports read, write and erasing flash chips (BIOS, firmware..)

Supports read, write and erasing I2C and SPI EEPROMs

Standard JTAG debug interface as well as ARM SWD debug interface

GDB Debugging support

Can be used with any openOCD supported processors/controllers

Supported by OpenOCD on-chip debugger (open source)

Supported by Exploit - Internet of Things Exploitation framework (open source)

Power - Host computer power-up the board, no external power supply required

Compact size 60mm x 20mm

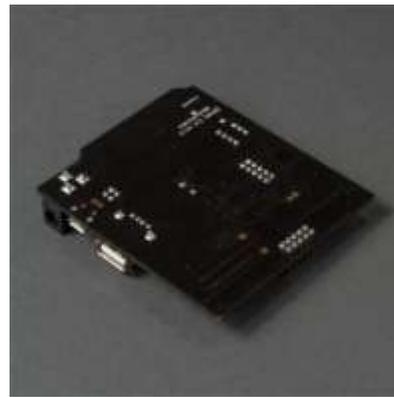
FROM  
**40 EUR**

EXPLIOT  
www.exploit.io



# BUS

HW hacking, JTAG, cars, motorbikes



## DIVA IoT board

Damn Insecure and Vulnerable Application

DIVA [Damn Insecure and Vulnerable Application] board is a connected IoT device and a vulnerable target board designed to teach the basics of IoT security. DIVA integrates an ARM cortex M4 microcontroller and a 802.15.4 radio on the board. It comes with many more on-board peripherals including, SPI and I2C EEPROMS, IR receiver, temperature sensor, RGB LED, input switches etc. The board provides a standard JTAG debug interface as well as a SWD port that can be used to debug programs from the host PC. The inbuilt USB port can be used for accessing the serial console and for firmware upgrades in DFU mode. Some challenges are preloaded in the firmware. New firmware with updated challenges will be available at:

<https://exploit.io/collections/boards/products/diva-iot-board>

### Specifications

USB 2.0 virtual com interface

USB Device Firmware Upgrade (DFU) support

Memory - onboard 256 kb I2C EEPROM and 256 kb SPI EEPROM

Standard JTAG debug interface as well as ARM SWD interface

GDB Debugging support

Can be used with any openocd supported debugger/programmer

UART debugging port

Exposed I2C and SPI lines for easier access

Built-in 802.15.4 radio

Supports IR reception (from standard remote controls)

Power - Host computer power-up the board, no external power supply required

Stand alone mode with external power supply (6v to 12v)

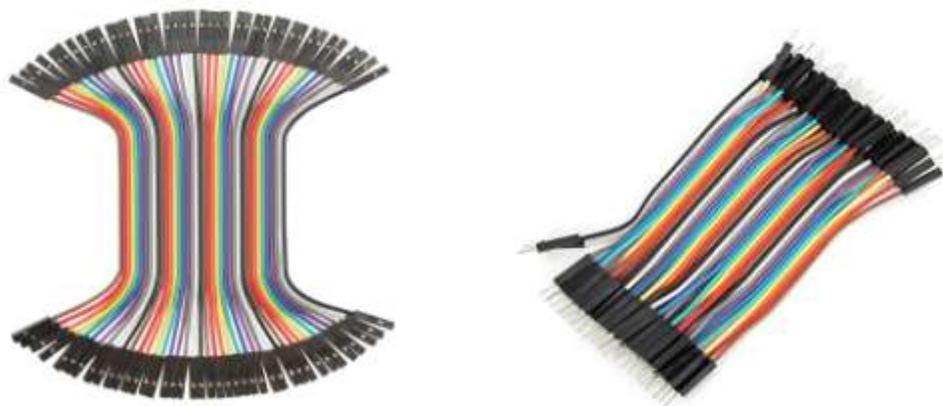
RGB status led, on-board LED array and a power LED

Compact size 84mm x 70mm

FROM  
**200 EUR**

EXPLIOT  
www.exploit.io





## Jumper cables

### DuPont line jumpers for electronics

It's always nice to have extra jumper wires on hand for your projects. The wires in this peel-apart set come in 10 colours and feature crimp terminals that fit side-by-side for use with standard 1.0 inch headers. Use them individually, or peel off a group to serve as a custom-width cable for a sensor or accessory. These jumper wire ribbons are available in 100 mm or 200 mm lengths, and with Male – Male or Male - Female terminals.

This is the perfect companion for your electronic projects like hardware hacking, device connecting, etc.

### Specifications

Available in 100 mm or 200 mm length

Quantity: 40 wires

Female-female

Gauge: 28 AWG, stranded

Female-male also available

Male-male also available



amazon



# BUS

HW hacking, JTAG, cars, motorbikes



## USB to TTL/UART

Last and most powerful NF device

An USB to UART or TTL adapter is a “must-have” for all your projects. You will use it hundreds of times for connecting external UART type peripherals, like GPS modules, magnetometers, etc. as well as for connecting to console in multiple board based computers, like Raspberry Pi, Arduino, etc. There are many different models available in the market from prices from 5 bucks up to dozens, but quite all of them work very well. Some of them are based on the CP2102/CP2104 chipset and other on the FTDI FT232RL. Some of them include, as this model, DC power supply for 5V and for 3.3V powering external devices, such as GPS modules. This is one of the most compatible ones but as they are **very cheap** it's a **good option to buy some of them**.

### Specifications

USB 2.0 to TTL UART 6PIN CP2102 Module Serial Converter

USB specification 2.0 compatible with full speed 12Mbps

Standard USB type A male and TTL 5pin connector

5pins for 3.3V, TXD, RXD, GND & 5V

Baud rates: 300 bps to 1.5 Mbps

Byte receive buffer; 640 byte transmit buffer

Hardware or X-On/X-Off handshaking supported

Event character support Line break transmission

USB suspend states supported via SUSPEND pins

Temperature Range: -40°C to +85°C.

Supports Windows 98SE, 2000, XP, Vista, Window7, Mac OS 9, Mac OS X, Linux > 2.40

FROM  
10 EUR

AliExpress  
amazon





# STM32 programmer/debugger

## Programmi ng/debuggi ng for STM32 mi cros

ST-LINK/V1 and ST-LINK/V2 embed a unique interface (ST debug) with the USB. When powered up, the boards are in firmware-upgrade mode (also called DFU for "Device Firmware Upgrade"), **allowing firmware to be updated** through the USB. Dedicated commands switch the ST-LINK from the firmware-upgrade to the STM8 or STM32 debug mode (depending on firmware capability). There is no similar command to switch back to the firmware-upgrade mode (a power cycle is required). The STLINK-V3SET is composed of a main module and a complementary adapter board. The SWIM and JTAG/SWD interfaces are used to communicate with any STM8 or STM32 microcontroller located on an application board. The modular architecture of STLINK-V3SET enables to extend its main features through additional modules such as the adapter board.

### Specifications

5 V power supplied by a USB connector (USB 2.0 full-speed-compatible interface)

1.65 V to 5.5 V application voltage supported on SWIM interface

SWIM low-speed and high-speed modes supported

SWIM cable for connection to the application via a pin header or a 2.54 mm connector

1.65 V to 3.6 V application voltage supported on the JTAG/SWD interface and 5V tolerant inputs

JTAG cable for connection to a standard JTAG 20-pin pitch 2.54 mm connector

JTAG supported

SWD and serial wire viewer (SWV) communication supported

Direct firmware update feature supported (DFU)

Status LED which blinks during communication with the PC

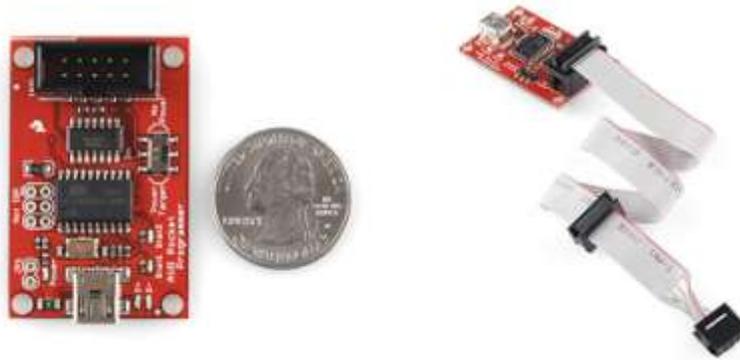
FROM  
**12 EUR**

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# BUS

HW hacking, JTAG, cars, motorbikes



## AVR programmer/debugger

### Programmer/debugger for ATmega micros

This new version uses an SMD 5x2 header. This is a simple to use USB AVR programmer. It is low cost, easy to use, works great with AVRDUDE and Magspoo, and is tested extensively on a Windows desktop. Based on Dick Steefland's USBtiny and Limor Fried's USBtinyISP. It works well with Windows, Linux and Mac boxes. For out-of-the-box compatibility with other operating systems and machines, checkout the AVR ISP2 USB programmer from Digikey. This programmer works really well for ATmega168 and ATmega328 and should work with all the AVR micros supported by AVRDUDE. This board is buffered and power protected so that you can do some really evil things to the programmer without killing it. It is fast! Comparable speed to the AVR ISP2 USB programmer from Digikey. One of the greatest features of this board is the ability to power the target (up to 500mA) from the programmer. To use this programmer, attach to a Windows machine and install the drivers listed below. Open a command prompt. Assuming WinAVR (and therefore AVRDUDE) have been installed, type:

```
avrdude -c usbtiny -B 1 -patmega328 -U flash:w:main.hex
```

Be sure to include the "-B 1" flag as this will significantly increase the programming speed! You may need to change -p flag to your appropriate microcontroller.

### Specifications

Standard AVR ISP programmer

ATtiny2313 with USBtiny firmware preloaded

Buffered output

PTC fuse protected power

Programmer can power target (up to 500mA)

Programming cable included (10-pin and 6-pin targets supported), USB cable not included

Supports ATmega168/328 and some others not based on i2c like AD9833 and MPU9255

Windows, MacOS and Linux support

FROM  
**15 EUR**

sparkfun.  
ELECTRONICS





## RS-422/RS-485 Shield

Last and most powerful NF device

The RS485 is in use in many applications like industrial and home automation (for example MODBUS), lighting control (DMX), video surveillance (for example Pelco-D). Some RS485 shields are already available for the Raspberry Pi on the market, but these extensions are not suitable for professional use, because they come without a galvanic isolation between the RS485 bus and the Raspberry Pi. Without such isolation a damaging of the Raspberry Pi or malfunction of the device is possible, because of the large distances of a RS485 bus. Furthermore a full-duplex mode (RS422) is also not integrated.

If you like to know more about RS485 visit this website:

[http://www.radio-electronics.com/info/telecommunications\\_networks/rs485/rs-485-tutorial-basics.php](http://www.radio-electronics.com/info/telecommunications_networks/rs485/rs-485-tutorial-basics.php)

### Specifications

Galvanic isolation between PI and interface

RS422 (full duplex) support

RS485 (half duplex) support

Indicator LEDS for RX and TX activity

Switchable pull-up, pull-down and terminal resistor

Different modes for send/receive switching (Auto, GPIO18, always transmitter, always receiver)

Auto switching via monoflop

All options adjustable via DIP switches

FROM  
**32 EUR**



# BUS

HW hacking, JTAG, cars, motorbikes



## Waveshare RS485 Can Hat CAN bus for Raspberry Pi model Zero W

The RS485 is in use in many applications like industrial and home automation (for example MODBUS), lighting control (DMX), video surveillance (for example Pelco-D). Some RS485 shields are already available for the Raspberry Pi on the market, but these extensions are not suitable for professional use, because they come without a galvanic isolation between the RS485 bus and the Raspberry Pi. The RS485 CAN HAT enables your Pi to communicate with other devices stably in long-distance via RS485/CAN functions.

If you like to know more about RS485 visit this website:

[http://www.radio-electronics.com/info/telecommunications\\_networks/rs485/rs-485-tutorial-basics.php](http://www.radio-electronics.com/info/telecommunications_networks/rs485/rs-485-tutorial-basics.php)

### Specifications

Operating voltage:	3.3V
Onboard CAN controller	MCP2515 via SPI interface, with transceiver SN65HVD230
	RS485 function, controlled via UART, half-duplex communication, with transceiver SP3485
Dimension:	65mm x 30mm
Mounting hole size:	3.0mm
	Compatible with Raspberry Pi Zero/Zero W/Zero WH/2B/3B/3B+
	Reserved control pins, allows to work with other control boards

FROM  
**18 EUR**

amazon





## CANTact 1.0

Last and most powerful NF device

CANTact is an open source Controller Area Network (CAN) to USB interface for your computer. The CANTact device is a single channel USB CAN interface. It can be used to connect to CAN bus systems, including cars, heavy duty vehicles, and industrial automation systems. CANTact works on Linux, OS X, and Windows. CANTact is supported by SocketCAN, Cantact App, and pyvit. The CANTact hardware and firmware are open source, and are available on Github. The CANTact hardware is designed KiCad, which is a free and open source hardware design tool.

With a CANTact and an OBD-II to DE9 cable, it is very easy to get onto the OBD-II CAN bus of any CAN enabled vehicle. Connect to any CAN enabled car using a standard OBD-II cable. A truly open source hardware project. All design files are available under a permissive license. Works on Mac, Linux, and Windows. Easily scriptable using an open-source Python library, designed for hackers.

### Specifications

CANTact is based around the ST STM32F042C6 microcontroller

A Microchip MCP2561 CAN transceiver provides an interface to a standard high speed CAN bus.

CANTact acts as a virtual serial port, and uses the LAWICEL protocol to send and receive frames.

CANTact can operate at speeds much higher than 115200 bps

The DE9 connector of the CANTact allows for two pin mappings for different use cases:

Pins 7 (CAN high), 2 (CAN low), and 3 (ground) for standard CAN connections

Pins 3 (CAN high), 5 (CAN low), and 1 (ground) for use with an OBD-II to DB9 cable.

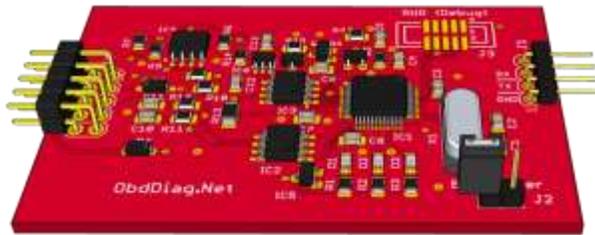
Compatible with the Sparkfun OBD-II to serial cable

The final jumper is for CAN termination. Place the jumper besides the "CTE" marking to place 120 ohms across CAN high and CAN low. This is commonly used in development, when you are only interfacing with a single CAN device.



# BUS

HW hacking, JTAG, cars, motorbikes



## ObdDi ag

### Open-source ELM327 OBD adapter

The AllPro adapter is a small device that plugs into your automobile's On-Board Diagnostic (OBD) port, which grants access to the car's computerized self-diagnostic system. All cars manufactured in 1996 and later have an OBD-II port, which is usually located under the dashboard on the driver's side. The adapter allows you to interface with your car's OBD-II bus. It provides you a serial interface using the ELM327 command set and supports all OBD-II standards. The adapter kit schematic is shown here. It is built around NXP LPC1517 Cortex-M3 microprocessor with 64 Kb program memory, but can accommodate another chip from same family like LPC1549 with 256 Kb if required. The NXP chips have a ROM-based bootloader that supports loading a binary image into its flash memory using USART or CAN. All the software is written in C++ for NXP LPCXpresso IDE which is essentially using GNU toolchain for ARM Cortex-M processors. However, it can be compiled with other pre-built GNU toolchain, like GCC ARM Embedded or even with Keil uVision IDE.

### Specifications

NXP LPC1517JDB48 ARM Cortex M3 72Mhz processor

64kB Flash, 12kB RAM

Using NXP sophisticated State Configurable Timers to do the precise signal handling for J1850 PWM and VPW protocols

CAN FIFO buffers for handling some not-strict ISO-compliant ECUs

Botloader for initial firmware programming

Low power consumption

SAE J1850 PWM

SAE J1850 VPW

ISO 9141-2

ISO 14230-4

ISO 15765-4 CAN

SAE J1939

SAE J1850 PWM

SAE J1850 VPW

FROM  
**20 EUR**

ObdDiag.Net





## Machina M2

Last and most powerful NF device

M2 by Macchina is an open and versatile automotive interface that can take your car to the next level. Use it to customize your ride or as a development platform for your next product. M2 works with almost any vehicle and features an SAM3X ARM Cortex-M3 processor at its core (the same processor as the Arduino Due). An XBee form factor socket allows for many wireless capabilities (BLE, WIFI, GSM, 3G, LTE, GPS). Some of the first adopters of M2 were Security Researchers, and it remains a great platform for their work. M2 can also be used to **make your car safer by tracking its location and other telematic data**. Telematics isn't just for safety; race teams, parents and fleets are all looking for more insight into their cars.

You can read more about M2 general features on:

<https://www.macchina.cc/m2-introduction>

### Specifications

32kb EEPROM + MicroSD card socket

2 CANBUS channels, 2 LIN/K-Line channels, Single-wire CAN interface

Arduino 84MHz

32-bit Atmel SAM3X8E ARM Cortex M3 processor

DIGI XBee form factor expansion port

Expandable through optional breadboard

6 general purpose driver circuits

Up to 1 amp of current at 12 volts

2x User programmable buttons, 2 hard buttons, 1x RGB LED, 5x colour LED

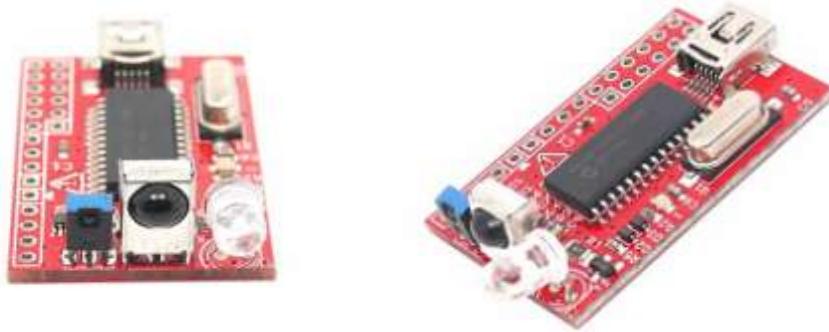
56.4mm x 40.6mm x 15.7mm

FROM  
97 EUR



# BUS

HW hacking, JTAG, cars, motorbikes



## USB Infrared Toy v2

Bus pi rate JTAG bi g brother

Assembled USB infrared remote control receiver / transmitter v.2 designed by DangerousPrototypes.com. Use a remote control with your computer, view infrared signals on a logic analyser, capture and replay remote control buttons, and play TV POWER codes. Still today there are many devices that can be controlled by IR signals. If you plan to develop your own control utilities, this is the device you need.

### Specifications

NEW: 100mA constant current IR transmitter with improved range

NEW: Infrared frequency measurement

NEW: Pin breakout area

Infrared remote control decoder (RC5)

Infrared signal logic analyzer

Capture and replay infrared signals

USB connection, USB bootloader for easy updates

Supported in WinLIRC

Open source (CC-BY-SA)

FROM  
**20 EUR**

**DANGEROUSPROTOTYPES**  
OPEN SOURCE HARDWARE PROJECTS

 **seeed**  
The IoT Hardware Enabler





## NVIDIA GeForce GTX 1080 Ti

### High performance GPU processing card

There was a time, in which graphics cards were only for gamers. But someone later discovered that GPU were incredibly better for cracking passwords than CPU. From that point every hacker needs to have access to a computer with a good graphics card for cracking many types of key hashes. The best software tool for doing that is hashcat, **but it's not easy to install and configure it.** When achieved, the results are awesome.

#### WPA2 hashcat benchmarking

GPU	WPA2 hash rate
RTX 2080 Ti	758700 hash/s
Nvidia RTX 2080 Founders Edition	571400 hash/s
Nvidia GTX 1080Ti	576000 hash/s
Radeon VII 16GB	534000 hash/s
Nvidia GTX 1080	396800 hash/s
GeForce GTX 1070	285000 hash/s

### Specifications

Boost Base Core Clock:	1683 MHz / 1569 MHz(OC Mode),1657 MHz / 1544 MHz(Gaming Mode) ,1582 MHz / 1480 MHz(Silent Mode)
Graphics card Dimensions:	Card: 269 x 111x 35 mm / 1363 g, Cooler: 151 x 120 x 52 mm, Tube: 330 x 10.6 mm
Memory Bus:	352-bit
Graphics Card Memory Size:	11GB
Memory Clock:	11124 MHz (OC Mode),11016 MHz (Gaming Mode),11016 MHz (Silent Mode)
Output:	DisplayPort x 3 (Version 1.4),HDMI (Version 2.0),DL-DVI-D
Power Consumption Connector:	8-pin x 1, 6-pin x 1
CUDA Cores:	3584
Interface:	PCI Express x16 3.0
Memory Type:	GDDR5x
Power Connector:	250W
Recommended PSU:	600W

FROM  
**750 EUR**

amazon



# Accessories

Storage, powerbanks, batteries, chargers, GPS



## Beitian BN-180 GPS GPS module with UART bus

Having a UART GPS is very useful for some hacking projects. Always signing the network captures with the actual real geolocation is a good idea. It also works for Wi-Fi, Bluetooth, Lora wardriving projects. There are some different models available from Beitian. BN280 and BN-880 both have a compass (magnetometer) built in. These are pretty bulky for a mini quad. There are smaller GPS modules, such as the BN180 and 220. These don't have Compass in them however. The BN-180 doesn't have flash memory for saving configuration while the **BN-220 does**. Ask if the connection cable is included in your order, you'll need it. You can use it on a Raspberry Pi and many other boards with UART interface, or by using UART to USB adapter.

### Specifications

Dimensions / Weight :	18mm*18mm*6mm / 4.9g
Receiving Format :	GPS, GLONASS, Galileo, BeiDou, QZSS and SBAS
Frequency :	GPS L1, GLONASS L1, BeiDou B1, SBAS L1, Galileo E1
Channels :	72 Searching Channel
Tracking :	-167dBm
Position Horizontal :	2.0 m CEP 2D RMS SBAS Enable (Typical Open Sky)
Velocity :	0.1m/sec 95% (SA off)
Timing :	1us synchronized to GPS time
Cold Start :	26s , Warm start : 25s, Hot start : 1s
Support Rate :	4800bps to 921600bps, Default 9600bps
Data Level :	TTL or RS-232, Default TTL level
Data Protocol :	NMEA-0183 or UBX, Default NMEA-0183
Single GNSS :	1Hz-18Hz
Concurrent GNSS :	1Hz-10Hz, Default 1Hz
VCC :	DC Voltage 3.0V-5.5V, Typical: 5.0V
Current :	Capture 50mA/5.0V
TX LED :	Blue. The data output, TX LED flashing
PPS LED :	red. PPS LED not bright when GPS not fixed, flashing when fixed
Wiring :	GND, TX output, RX input, VCC(3.0v-5.5v)

FROM  
**20 EUR**

AliExpress  
amazon





## Powerbank for Raspberry Pi

DC power + 5 port USB hub

The working PMU (Power Manage Unit) can work for charging mode or step-up mode at the same time. If the USB-A interface without any external load (like Pi), with 5V input voltage of microUSB, then the PMU enter charging mode. The PMU will integrate a current-limiting resistor with the external voltage, 5V voltage for Lithium battery, around 4.6V-4.7V voltage for USB-A interface. The PMU would enter step-up mode without external 5V voltage. Under this circumstance, turn on the switch, USB-A interface can output maximum 5V voltage, two USB-A interface can maximum output 1.8A current. The PMU itself has current-limiting protection. It will be short circuit when over 1.9A current. You can charge the battery even if the switch is turn off. Attach it to the Raspberry pi using the included board separators.

### Specifications

Battery capacity: 3800mAh

Maximum output current: 1.8A

Output voltage: 5.1V  $\pm$  0.1V

Double USB output

Standard charging current / voltage: 1.0A/5.0V

It can last about 9 hours if only pi 3.

Branded as MakerHawk

FROM  
**29 EUR**

amazon



# Accessories

Storage, powerbanks, batteries, chargers, GPS



## Quimat 3.5 LCD touch screen

Small sized LCD touchscreen for Raspi

This is the Quimat QC35C LCD Display Kit with 40PIN Raspberry Pi styled GPIO extension connector. It is fully compatible with Raspbian Linux distribution and Kali Linux 2019.1 ARM versions. To configure it in Raspbian, use the “raspi-config” tool and select Waveshare 3.5A model. In Kali Linux, you can also use the forked tool called “kalipi-tft-config” with the same LCD screen type. You can also configure root auto-login or onscreen keyboard, since it’s a touch screen. It’s ideal for having feedback in your outdoor projects.

For configuring it:

[https://www.youtube.com/watch?v=kBtnQdD\\_ssM](https://www.youtube.com/watch?v=kBtnQdD_ssM)

There is also a screen touch menu project available from:

<https://whitedome.com.au/re4son/kali-pi/>

## Specifications

Touch Screen LCD Display kit designed for using the GPIO pins of raspberry pi

Directly plug and play while the main board is running

Can connect other 40 pin GPIO components at the same time

Supports multiple systems: includes Raspberry Pi 3 2 Model B B+ A A+, Raspbian, Kali, Ubuntu, RetroPie, PiPlayer, windows10, Orange PI, Nanop Pi M1, and Banana PI M2

Input native resolution 480\*320

Touch pen included

FROM  
**35 EUR**

amazon



IPS screen, wide viewing angle, excellent display effect  
Small size, high resolution, high definition display



## Waveshare 1.3 IPS LCD display 240x240 SPI Display for Raspberry Pi Zero

This is an IPS LCD display HAT for Raspberry Pi, 1.3inch diagonal, 240x240 pixels, with embedded controller, communicating via SPI interface. Trying to add a control interface for your Pi? This compact display would be the ideal choice. Standard Raspberry Pi connectivity, compatible with Raspberry Pi Zero/Zero W/Zero WH/2B/3B/3B+. IPS screen, wide viewing angle, better display. High definition in small size. 1x joystick, 3x pushbuttons, handy and useful.

Comes with development resources and manual (examples for Raspberry Pi/Arduino/STM32).

### Specifications

Driver: ST7789

Interface: SPI

Display color: RGB, 65K color

Resolution: 240x240

Backlight: LED

Operating voltage: 3.3V

FROM  
**17 EUR**

amazon



# Accessories

Storage, powerbanks, batteries, chargers, GPS



## RasPi Thermal Printer Hat

7x105px thermal printer UART/USB

The thermal printer module is available in Arduino shield format (R2Z5000) and in Raspberry hat format (R2Z5001). Both variants have UART interface connected to his specific pinout pins. USB can be optionally connected with a Micro USB cable. The shield has an independent power connector that powers both printer and Arduino/Raspberry board. Please note that Arduino/Raspberry power source is insufficient and shall not be used with the printer connected. This is a thermal printer hat for Raspberry Pi The printer shall be powered directly through his power connector within a minimum voltage of 12V/1A and a maximum of 18V. The integrated regulator will forward a proper stabilised 5V to the Arduino/Raspberry main board that does not need to be powered separately. Do NOT use Raspberry's micro-USB power connector because current and voltage are totally insufficient for both devices.

### Specifications

Onboard power supply with 12-18V input voltage at 1A (will power both Raspberry and Printer hat)

Serial communication over USB (standard COM port, no driver needed, will work on any OS) and UART interface (TTL 5V)

TTY-like control protocol

Paper jam status control

Paper feed button

Status leds

7 dots hot printing head

105 dots per line

Text mode printing with 7x5 dots characters

Graphical printing with 105x7 dots contiguous areas

Paper width of 37 mm

FROM  
**40 EUR**

 **seeed**  
The IoT Hardware Enabler





## Kuman Camera for RasPi

5MP 1080p HD Video Webcam Night Vision

For many Raspberry Pi based projects you will need a good quality camera for using it as a spy camera, face recognition, security camera, etc. This camera is an upgraded release of the classic PiCamera also available in other stores. This camera offers high resolution image 5 Megapixel with a good F-factor aperture (F2.9) and medium angle width. NOTE: IR board turns on automatically in default factory setting, and LED light will keep on in this mode. In order to extend the life of LED lights, please adjust the centre of resistance with a small screwdriver according to your needs, then IR light will turn on & off automatically based on the value you set. If you want LED always keep on, we also sell heat sink for your special needs. Attention: This is upgraded one!!

### Specifications

Lens:	1/4 5M
CCD sensor:	5 megapixel OV5647 sensor
Aperture (F):	2.9
Focal Length:	3.29MM
Diagonal:	72.4 degree
Sensor best resolution:	1080p (2592×1944 pixels)
Image capture resolutions:	2592 x 1944 pixel static images; Capture video at 1080p @ 30 fps, 720p @ 60 fps and 640x480p 60/90
Dimensions:	25mm x 24mm x 6mm
Flash / lights:	2 3W high-power 850 infrared LED and/or fill flash
Supported Raspi releases:	Raspberry Pi model B/B+ A+ RPi 3 2 1

FROM  
**22 EUR**

amazon



# Accessories

Storage, powerbanks, batteries, chargers, GPS



## HDMI to VGA converter

Works with Raspberry Pi + surprise

This HDMI to VGA converter is one of the most known models in the market. It works perfectly for connecting Raspberry Pi to old styled VGA monitors, providing resolutions up to Full HD. There are models that incorporate an extra Audio port for getting the sound out of the HDMI output, using a mini-jack 3.5 stereo adapter. This cheap model was very known some years ago because it permitted to be used for a very different application. More info:

<https://hackaday.com/2018/04/23/spoofing-cell-networks-with-a-usb-to-vga-adapter/>  
<https://github.com/steve-m/fl2k-examples>

### Specifications

Input:	HDMI Male
Output:	VGA Female
Audio Support:	No
Installation:	Plug and Play
Supported Resolutions:	1080p/1080i (1920x1080), 1600x1200, 1280x1024, 720p/720i (1280x720), 800x600, 576p/576i (768x576), 480p/480i (640x480)

FROM  
**8 EUR**

amazon





## Plugable USB to Ethernet Linux compatible LAN adapter

Plug into any USB 2.0 laptop or desktop currently limited to 10/100 Ethernet, and benefit from faster transfers on your Gigabit Ethernet Network. USB 2.0 supports theoretical speeds up to 480Mbps. In practice, most machines will see up to a doubling of network speed by moving from 100Mbps Fast Ethernet to 1000Mbps Gigabit Ethernet via USB. Also works on 10/100 Ethernet networks at their native speeds. You can also use it in many Android based smartphones. This model using ASIX AX88178 chipset is very compatible with Linux and Android boxes.

### Specifications

USB 2.0 male A to RJ45 female adapter supporting 10/100/1000 Ethernet at USB 2.0 speeds (480Mbps)

ASIX AX88178 Controller and Realtek RTL8211CL PHY - Jumbo packets up to 9KB

Compatible with Windows, Mac, Chromebook, Linux/Unix

USB-A male connector

FROM  
**19 EUR**

amazon



# Accessories

Storage, powerbanks, batteries, chargers, GPS



## Micro USB 3 port hub OTG Simultaneous Charging & Transmission

This small sized USB hub has the size of a pen. It works for OTG (On-The-Go) enabled smartphones, thanks to the microUSB OTG connector, but can also be used for laptops (using included micro USB to USB-A connector) or can be connected to modern C-type USB devices using an adaptor. It is much recommended, since it permits powering the attached USB devices with a USB power supply connected to the female micro USB connector on the side. It also permits switching to different modes, in which you decide to allow also charging the connected smartphone.

### Specifications

Small sized USB hub

Switch positions:

Position 1: closed

Position 2: OTG + Charging

Position 3: OTG alone

Micro USB to USB-A adaptor included

"Acasis H027" or "leagy" branded

OTG standard compatible and Charge mode

Support For Android, Win8, Win7, Vista, XP, Window 2000, ME, Linux And Other Operating Systems

USB 2.0 support

FROM  
**14 EUR**

amazon





## USB OTG Adapter

USB OTG micro or USB-C connector

OTG technology allows your phone to connect flash drives, mouse, keyboards or controllers and other USB peripherals. Now you can enjoy videos, photos from a USB flash without connecting to the host. Use a keyboard or mouse to directly control your phone/tablet. With the right Android phone you can connect peripherals into it like Wi-Fi cards, SDR devices, etc.

But take care if the phone can serve enough power for them. If not, think about using a “Y-type” adapter or a USB hub with external power.

### Specifications

USB type C adapter or micro USB

USB-A receptacle

Valid for modern Apple computers and new laptops

OTG specification

USB 2.0 / 3.0 / 3.1 compatible

USB Y-type model available

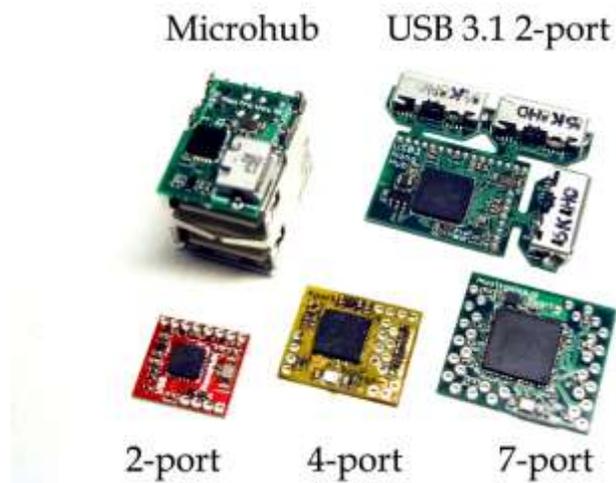
FROM  
**10 EUR**

amazon



# Accessories

Storage, powerbanks, batteries, chargers, GPS



## USB Hub micro-modules

Micro USB hubs for your projects

This USB hub is really for hacking projects, by people who are comfortable soldering tiny wires. The NanoHub's connection points are spaced just right to use with standard 1.27mm (0.050") ribbon cable or flat USB cables. Because these aren't properly impedance matched wires, you will not be able to use more than approx. 400mm cable lengths reliably. Also, carefully observe and double-check the polarity of your wires. The correct pole designation is on the back of the board. Getting this wrong almost certainly means damaging the NanoHub and any attached USB devices. After building it into your project, in order to avoid accidental shorts, use heatshrink or kapton tape around the board to insulate it.

### Specifications

11.6x12.4mm (0.457x0.488") footprint

1.52mm (0.06") thickness

0.35 grams (0.012oz) mass

Uses SMSC/Microchip USB2422 chipset

Less than 1mA in suspend and 70mA at full speed current consumption

ESD protected

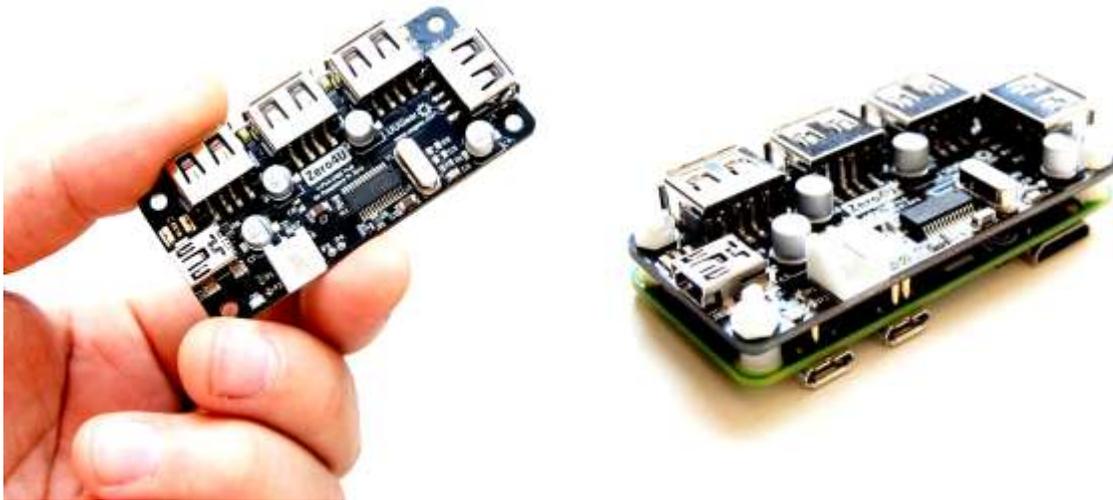
1.5mm pitch eyelets

Full mechanical drawings and detailed specifications on [muxtronics.nl](http://muxtronics.nl)

Available in USB 2.0 and 3.0 versions and in 2-7 ports

FROM  
**7 EUR**





## Zero4U USB Hub

3 more USB ports for your Raspi Zero W

This is a 4-port USB hub for Raspberry Pi Zero, and it can be mounted to Raspberry Pi Zero back-to-back. After mounting this USB hub to your Raspberry Pi Zero, it immediately has 4 USB ports that could transfer data in USB 2.0 high-speed. The 4 pogo pins on the back will connect the PP1, PP6, PP22 and PP23 testing pads on Raspberry Pi Zero, hence no soldering will be needed. The USB hub will take power directly from your Raspberry Pi Zero, so you don't need to power the USB hub separately. However you can use the JST XH2.54 connector on board as the alternative power input port. There are one blue LED on board as the power indicator, and four white LED aside the USB ports as transaction indicators. If you use this USB hub with other types of computer, you can use a USB cable (not included) to connect the mini-USB port on board to the up-stream USB port.

### Specifications

65 mm x 30 mm x 9 mm

USB v1.1: 12 Mbps

USB v2.0: 480 Mbp

Upstream: 1 (mini-USB or via pogo pins)

On Raspberry Pi Zero: Self Powered

Bus-Power: maximum 500mA for all ports

Self-Power: maximum 2A for all ports

Output voltage: 5V DC

LEDS: 1 blue for power, 4 white for ports activity

FROM  
**12 EUR**



# Accessories

Storage, powerbanks, batteries, chargers, GPS



## USB power monitor

Monitors and logs USB power details

This electronic tool is very useful for those who create their own electronic projects, to help them to measure the electrical conditions of their projects. This powerful tool measures in a MiTM position the voltage and power consumption in amps of any connected USB device. Many electronics projects fail or are unstable because the components are not getting enough stable power. With this tool you will be able to monitor the power peaks of any USB device. There is one model with BLE connectivity (UM24C) and another just with the LCD screen (UM24).

### Specifications

Voltage measurement range:	4.50-24.00V
Current measurement range:	0.000-3.000A
Capacity accumulation range:	0-99999mAh
Energy accumulation range:	0-99999mWh
Load impedance range:	1.5-9999.9Ω
Screen brightness setting:	0-5 level
Voltage graphing range:	04.5-24.0V
Display screen:	1.44 Inch colour LCD display
Refresh rate:	2Hz
Voltage measurement resolution:	0.01V
Current measurement resolution:	0.001A
Voltage measurement accuracy:	±(0.2%+1 digit)
Current measurement accuracy:	±(0.8%+3 digit)
Time measurement range:	0-99h59min59s
Auto screen off time:	1-9mins
Current graphing range:	0.00A-3.00A
Quick charge recognition modes:	QC2.0 / QC3.0

FROM  
**10 EUR**

AliExpress





## USB Kill v3

System destroyer device

The USB Killer is a CE Approved and FCC Approved testing device designed to test the surge protection circuitry of electronics to their limits - and beyond. When plugged into a device, the USB Killer rapidly charges its capacitors from the USB power lines. When the device is charged, -200VDC is discharged over the data lines of the host device. This charge/discharge cycle is repeated many times per second, until the USB Killer is removed. Simply put: used on unprotected equipment, the USB Killer instantly and permanently disables the target hardware.

It does not require batteries, and it can be used an unlimited number of times. Its compact size and flash-drive style housing makes it an important device in every pen-tester's toolkit. The USB Kill V3.0 also comes in an anonymous edition: without any logo or branding, in a generic USB Flash Drive case.

### Specifications

Input voltage:	4.5 - 5.5 VDC
Output voltage:	-215 VDC
Pulse Frequency:	8 - 12 times / second
Pulse current:	≥180A
Standards:	CE & FCC Approved

FROM  
**55 EUR**

 **USB KILL**



# Accessories

Storage, powerbanks, batteries, chargers, GPS



## USB condom

### The original USB condom

The Original USB Condom prevents accidental data exchange when your device is plugged into a foreign computer or public charging station with a USB cable. The USB Condom achieves this by blocking the data pins in the USB cable and allowing only power to flow through. It can block all the known attacks, like HID, ADB injection, etc. just by blocking the Data pins of the USB bus, but also allowing DC 5V supply or charge. It is also very useful for USB testing since it has exposed pins for connecting to testing devices.

SyncStop is the name of the 'cased' version of the original USB Condom. We listened and spent some time designing and manufacturing our own enclosure.

### Specifications

Input voltage:	4.5 - 5.5 VDC
Output voltage:	bypass
Input connector:	USB type-A receptacle
Output connector:	USB type-A male
Exposed pins:	2.5" pin headers

FROM  
**7 EUR**

SyncStop





## Multimeter

Ideal for your electronic projects

The HOLDPEAK HP-770D Digital Multimeter is a practical tool for electricians, hobbyists, and general household use. It is easy to operate and features many different functions for measuring current, voltage, and resistance, as well as continuity, transistor, and diode testing. It can be used to diagnose, assemble, and repair circuitry and wiring. Other features include a low battery indicator, continuity buzzer, and overload protection.

### Specifications

Max Display:	40000, 3 1/2 digits
Range selection:	Auto ranging
Overload display:	Display OL
DC Voltage:	40mV-1000V
AC Voltage:	40mV-750V
DC Current:	400uA-20A
AC Current:	400uA-20A
Resistance:	40Ω~40MΩ
Auto LCD Backlight	Present
Overload protection	Present
Data Hold	Present
Diode Test	Present
Auto power off	Present
True RMS	Present
Relative Value	Present
Continuity Test	Present
Non Contact AC Voltage (NCV) detection	Present
Max Display:	40000, 3 1/2 digits

FROM  
**45 EUR**

amazon



# Accessories

Storage, powerbanks, batteries, chargers, GPS



## Ai yi ma 8686 Sol deri ng Ki t I deal for your el ectroni c projects

This soldering / SMD desoldering station is the ideal solution for electronics beginners, since its price and quality balance offers a good product for them. This kit includes all the necessary tools, spare parts and accessories for accomplishing all your needs, without having to invest a buck more. Today, hacking and electronics are two subjects that are closely related.

### Specifications

Hot air gun power:	700W
Hot air station temperature:	100-450 degrees
Airflow:	120 L
Brushless fan	Present
Noise:	< 45dB
Soldering hot iron temperature:	200-480 degrees
Soldering hot iron power:	60W
Temperature stability:	<2 degrees
Voltage:	110V/220V AC

FROM  
**42 EUR**

AliExpress





## TS100 smart soldering iron Portable Adjustable digital soldering iron

TS100 smart electric soldering iron kit is a portable and easy-to-use electric soldering iron adopting the internal Heating working mode with dual temperature sensor and acceleration extreme cooperate, reach the set the temperature only few seconds. It built-in MT32 acceleration sensor chip enable you to update the firmware or parameter setting via computer. OLED screen to display the parameter with large temperature adjustable range (100-400 Celsius degree). It is small just like a pen with DC12-24V working voltage and DC5.5\*2.5 (5525) power port easy and safe to use, the indispensable tools for electronic worker (Just use your laptop charger if it uses this connector). Read the review in:

<https://hackaday.com/2017/07/24/review-ts100-soldering-iron/>

### Specifications

Power:	40-65W
Input Voltage:	DC 12-24V (order it with DC power supply)
Power Supply Port:	DC 5.5*2.5mm
Temperature Adjustable Range:	100-400 Celsius degree
Temperature Stability Range:	±2%
Working Temperature:	300 Celsius degree(default)
Sleep Temperature:	200 Celsius degree(default)
Overall Length:	168mm/6.61inch (after installed bit)
Functions:	Quick heat up (11 secs To max temp.) / Auto sleep
Accessories:	Travel box / Multiple sizes tips / spare parts

FROM  
**60 EUR**

AliExpress



# Accessories

Storage, powerbanks, batteries, chargers, GPS



## TS80 smart soldering iron Portable Adjustable digital solder iron

The company that makes one of the best portable soldering irons, the TS100, has recently released a new model, the TS-80! Many people love the TS100 because of the small form factor and portability. What if I tell you that the TS80 is even smaller! The TS-80 shell is made of anodized aluminium and feels to have better build quality over the TS100, which is just plastic. For this reason, the TS80 is actually heavier, at 35g, while the TS100 weighs only 31g, despite being bigger. The TS80 is easier to hold than the TS100 thanks to more ergonomic grip. Note that the TS80 also has a shorter grip-to-tip distance, which helps with soldering precision. The grip on the T80 is actually removable so I supposed there would be an upgraded grip in the future? One of the biggest differences between the TS80 and TS100 is perhaps the input power. The TS100 can be powered by a DC input voltage between 12V-24V, via a 5.5mm barrel connector. **That's probably** the reason why the FPV and RC community love it so much, as you can simply use a 4S to 6S LiPo to power it. Very handy for field repairing too.

### Specifications

Temperature Range:	100 degree to 400 degree (Max)
Power Input:	3.6V-6.5V/3A, or 6.5V-9V/2A, or 9V-12V/1.5A ~ (QC 3.0)
Data/Power Interface:	USB Type-C
Temperature stability:	±3%
Display:	OLED
Control part:	Length 95.5mm, Diameter: 13mm
Heating part:	Length: 60+40mm, Diameter: 10.6mm
TS80 Controller Weight:	36.5g

FROM  
**85 EUR**

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Best Bang For Your Buck





## TS- 100 / TS- 80 carry case

Portable Adjustable digital solder iron

This is the original portable carry bag for TS100 electric soldering iron set. This small organizer bag is made from PU leather and microfiber with zipper closure. Single layer and 3 elastic loop strap to store one TS100 soldering iron and 2 solder tips tightly. It can also be used as a small tool pouch to hold screwdriver, nut driver, pen or other little gadgets.

### Specifications

Size(L\*W\*H): 165mm\*50mm\*25mm

Material: PU leather & microfiber

Capacity: Solder Iron & 2x tips

FROM  
10 EUR

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# Accessories

Storage, powerbanks, batteries, chargers, GPS



## Anti - Static Soldering Mat Heat-resistant Magnetic Multi-purpose Work Station Pad for Soldering

Soft silicone, free to fold, easy to roll and store. It can be directly rubbed with water thinner, excellent anti-sticking performance, AB glue; quick-drying glue cannot stick. Preciva soldering station mat can isolate from high temperature, to prevent repair station carbonization, reduce poisoning, good for health. Considering that when some little parts will be taken apart, and maybe lose carelessly, so we adding the parts box for users to store some little parts easily. Screw positioning area efficiently allocates smaller screw components to help you find the parts you need more precisely and faster. Screwdriver is one of the most commonly used tools for maintenance, so the characteristics of the magnetic field plus screwdriver are more essential. Positioning holes can be used for common screwdrivers and tweezers. For tipped or easily damaged tools such as tweezers, the holes provide protection and longer tool life.

### Specifications

**Non-Toxic Material:** Made of high silicone, the Preciva soldering mate is non-toxic, anti-static, environment-friendly, resists corrosion and won't deformed.

**Excellent Heat Resistance:** The soldering station mat has a good heat resistance, that can be insulate 500 celsius degree, which makes it protect the maintain platform from being burned. Even the heat iron can be put on the silicone soldering mat directly.

**Muti-function:** With different classification of the parts box, screw position, circuit board location, tool suppliers area, magnetic position, the magnetic soldering mat can not only serve as a heat insulation mat but also can help you clear your working platform to improve your working efficiency.

**Widely Applications:** Preciva antistatic soldering mat is really an ideal products for your repairing, such as phone, laptop, computer, sports watch, camera, smart toy, eyeglasses, etc.

FROM  
**15 EUR**

amazon





## Yoctosun Sol deri ng Gl asses I nterchangeabl e/Repl aceabl e Lenses

The head mount magnifier comes with 5 magnification power lenses of 1.0X, 1.5X, 2.0X, 2.5X, 3.5X, which can deliver bi-plate magnification powers of 3.0X, 4.0X, 4.5X, 5.0X, 5.5X, 6.0X. The lenses are made of high quality ABS moulded acrylic, providing clear and undistorted texts and images. With clamps on the head gear, users can set two lenses at a time for easy flipping or switching from one magnification power to another. It comes with a detachable and rotating head lamp which illuminates images. The light box comes with 2 bright white LEDs that are powered by 3 AAA batteries (not included). Once detached, it can serve as a stand-alone reading lamp or flashlight. Flexible and hands free operation is to be expected from this led head magnifier. It's a convenient and versatile vision aid for those who work on tiny parts and intricate art and craft designs.

### Specifications

Headband magnifying glasses with lights hands free visor lamp loupe lens, bring hands-free variable magnification detail views to hobby.

5x interchangeable, inter-convertible and detachable lenses with storage box (lens magnification power marked in the middle of lens) Lens can swung up out of the way.

Single-plate lens magnification: 1.0X, 1.5X, 2.0X, 2.5X, 3.5X, bi-plate lens magnification: 3.0X, 4.0X, 4.5X, 5.0X, 5.5X, 6.0X.you can choose to use them singly or two at a time.

Comfort fit head band is adjustable using head gear tightening knob,LED light can be rotated about 60 degree and light source box can be used separately as lighting source after being dismantled.

FROM  
**14 EUR**

amazon



# Accessories

Storage, powerbanks, batteries, chargers, GPS



## Lab DC Power supply

Switch ON/OFF external devices

Professional power supply design with intuitive operability, and fast and accurate selection of voltage and current. Low noise and ripple. CV/CC given voltage and constant current mode. Built-in set of parameters stored. Intelligent temperature control fan to effectively reduce the operating noise. To prevent damaging to the load, you can set an over-voltage protection and over-current protection. The panel buttons can be locked in order to prevent undesirable results that can damage the connected device. It offers up to 5 user-programmable pre-set settings. Just press the button to recall or store the fixed settings.

### Specifications

Input voltage : 220V +/-10% (50- 60Hz)

Output Voltage Range : 0-30V DC

Setup Resolution : 10 mV

Setup Accuracy : <0.05% +20 mV

Ripple : < 1mVRMS

Read back Accuracy : 10 mV

Output Current Range : 0-5A Continuously adjustable

Setup Resolution : 1 mA

Setup Accuracy : <0.1% +3 mA

Dimensions : 4.3 x 6.1 x 10.25 inch (110 x 156 x 260mm)

FROM  
**52 EUR**

AliExpress





## Sai nSmart DS0 Note II

### Handheld Mini Digital Oscilloscope

This pocket-sized device has a weight of 5.6 ounces and overall measurement of 5.9 x 3.6 x 2 inches. With its small size, this o-scope is easy to use too. In fact, you can use it easily through its one button in the touch area as well as gestures of one-click, double-click, press, and slide. Featuring 320x240 displays with 8M of memory card, this o-scope is suitable to use for academic experiments, electronics maintenance and engineering and many more. With its small size, this device is easy and convenient to use as well as SD card, USB flash, and USB charging. Other than that, since it uses a chargeable battery, this o-scope is suitable for use every day and everywhere.

### Specifications

Channels:	2 analog channels, 1 operation channel
Analog Bandwidth:	1 MHz
Max Sample Rate:	10 MSa/s 8K depth
Horizontal Sensitivity:	1uS/div to 2S/div (1-2-5 sequence step)
Vertical Sensitivity:	20mV/div to 10V/div (1-2-5 sequence step)
Analog Input Impedance:	1 MΩ
Coupling:	DC/AC
Trigger Mode:	ascend/descend edge trigger mode
Math Waveforms:	-A, -B, A+B, A-B, RecA, RecB, RecC
Inbuilt Signal Generator:	sine/square/triangle/sawtooth wave
Synchronous Mode:	auto, normal, single, none, scan value/average
Storage:	8 MB flash disk memory
USB Port:	Micro USB
Battery:	500 mAh
Screen:	2.8" TFT LCD with 320x240 px
Dimension:	100 x 56.5 x 10.7 mm (90g)

**FROM**  
**119 EUR**

amazon



# Accessories

Storage, powerbanks, batteries, chargers, GPS

NO PLACE  
CANNOT SEE

800X

DIGITAL ZOOM

WHAT YOU SEE IS WHAT YOU GET



PHOTO



VIDEO



LED x 8

## Electronics Microscope

### Circuit examination microscope

This is a digital microscope that can be continuously magnified 800 times. It has a 4.3-inch display and the object that being observed appears directly on the screen. At the same time, the elevation angle of the display can be adjusted freely within a certain range, which is convenient for the user to observe in multiple directions. The image can be saved to an microSD card or transmitted real-time to PC as a webcam.

### Specifications

4.3" HD LCD screen

800X zoom magnification

8x white LED

Material: ABS + metal plate

USB rechargeable with included 4000mAh battery

microSD card slot for picture taking

Focus knob

5 Megapixel real-time image

USB image transmission to a computer as webcam

FROM  
**34 EUR**

AliExpress



# Accessories

Storage, powerbanks, batteries, chargers, GPS



## Electronics Tool kit

### 73p Pro Electronics Repair Tool Kit

This professional tool kit includes up to 73 Pieces. The most commonly reached for tools when doing computer maintenance, IT upgrades and repair tasks on electronic devices including specialty tools and bits and precision equipment. Give yourself a lasting professional result to maintenance and repair tasks with the right set of tools. Most common tools as used by electronics repair technicians, IT guys and gamers. It includes many tools to open modern cases that are plastic soldered. Includes pentalobe bits for use on Apple devices. Since no available kit is **perfect you'll need to complement it with some** other professional tools. If you need to carry the tools out of your lab, it will be recommendable to find another soft case to carry them. Remember that the actual EU regulations just limit the following tools to be carried inside the hand-luggage: "tools with a blade or a shaft of more than 6 cm capable of use as a weapon, such as screwdrivers and chisels".

### Specifications

Tamper-Resistant Pentalobe:	0.8 ,1.2 ,1.5
Triangle:	TP2 ,TP2.7, TP3.2
Torx:	T4, T5, T6, T8
Phillips:	PH000, PH00, PH0
Slotted Metric:	1.0mm, 1.5mm, 2.0mm
Hex Metric:	0.8, 1.5, 2, 3mm
	175mm Flexible Extension Rod
	Device Disassembly Tools, Pry Tools
	Adjustable Wire Strippers and cutter
	Pliers Set
	AC Voltage presence Tester

FROM  
**20 EUR**

amazon



# Accessories

Storage, powerbanks, batteries, chargers, GPS



## iFixit Opening Tool kit

The essential tool to open every new toy

This soldering / SMD desoldering station is the ideal solution for electronics beginners, since its price and quality balance offers a good product for them. This kit includes all the necessary tools, spare parts and accessories for accomplishing all your needs, without having to invest a buck more. Today, hacking and electronics are two subjects that are closely related.

### Specifications

High quality thin flexible steel blade easily slips between the tightest gaps

Ergonomic flexible handle allows for precise control

Also favourite tool for watch makers to change watch batteries

Material: 6150 Steel

A simpler and safer way to open a glue-laden device

Heated in a microwave, the iOpener softens adhesive

The kit is designed to service every generation of Apple iPad, but can also be used for many more devices

FROM  
**8 EUR**

AliExpress



# Accessories

Storage, powerbanks, batteries, chargers, GPS



## Electronics fun Kit For Learning basic electronics

This is a great add-on to Arduino or raspberry pi, It comes with more than 300pcs sensors and components, all components are carefully bagged, most of them bagged separately, with combined bags pretty logical. We provide more number of resistors (220 ohm 40pcs and other value 20pcs, but other sellers only 10pcs each value), so that you are enough to use, don't need to spend extra money to buy. The breadboard comes with a power supply; you can set one side for 5VDC, and the other for 3.3VDC. It has a push switch to turn the power on or off. In addition, we also provide a male to male USB Power Cables, this is hard to find, but other sellers do not provide.

### Specifications

Breadboard plus power supply module (5V, 3.3V) and USB connector to power on

300 pcs. Sensors and components included

Kit of jumper wires of different types, Pin headers

74HC595 consists of an 8-bit shift register and a storage register

4N35 is a 4-terminal universal optocoupler that blocks the electrical connection

Active buzzer and passive buzzer

PN2222 NPN Transistor

Diodes, NPN transistors, resistors, capacitors, potentiometers, photoresistors, thermistors,

Colour LEDs and RGB LEDs

FROM  
**17 EUR**

amazon



# Accessories

Storage, powerbanks, batteries, chargers, GPS



## 2x Relay GPIO module Switch ON/OFF external devices

Two-Channel 5V Relay Module with Optocoupler Low Level Trigger for Arduino can switch quickly and reliably, even with low power, and are ideal for use with Arduino.

Relay Modules can switch up to 250V 10A AC or 30V 10A DC. Practical mounting holes allow the module to be securely mounted in enclosures, and due to its compact size, module is usable for many Arduino based projects.

### Specifications

2-channel 5V relay module with optocouplers

Perfect for driving up to 2 devices with larger current

Microcontroller compatible board

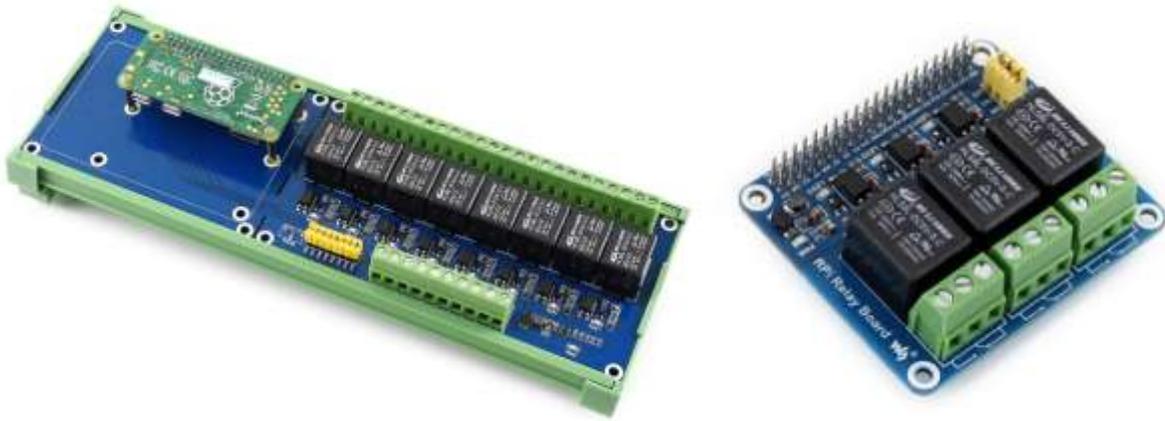
Max. 250V AC / 10A or 30V DC / 10A.

Dimensions (L x W x H): 50 mm x 38 mm x 19 mm.

FROM  
**6 EUR**

amazon





## Relay boards for Raspi

Switch ON/OFF up to 3x external devices

The Waveshare Raspberry Pi Relay Boards gives your Pi the ability to control high voltage/high current devices, easily makes normal home appliances become intelligent. The 3x Relay board fits perfectly for Raspberry Pi Model 3B+ and the 8x Relay board fits for both models.

Relay Modules can switch up to 250V 10A AC or 30V 10A DC. Practical mounting holes allow the module to be securely mounted to your Raspberry board using the 40 pin Raspberry type header.

### Specifications

Supports Raspberry Pi A+/B+/2B/3B/3B+

High quality relays, loads up to 5A 250V AC or 5A 30V DC

Opto-coupling isolation, prevent interference from high voltage circuit

Onboard LEDs for indicating relays status

Relay control jumper, allows to control the relays by custom pins other than the default pins

Development resources, with examples in wiringPi, WebioPi, shell, python, and bcm2835, python, python-bottle (webpage control), and crontab (cron job)

Reserved control Interface, allows to work with controllers like PLC

Standard rail mount bottom case (8x model)

Contact form: SPDT-NO,NC

Closed current: 6mA (per channel)

FROM  
**20 EUR**

amazon



# Accessories

Storage, powerbanks, batteries, chargers, GPS



## Ri i K01X1 USB keyboard 2.4 GHz Mini Wireless Keyboard with Touchpad

Don't use complicated Bluetooth keyboards that don't work properly when you need them. This small sized keyboard plus mouse pad works in every situation. Even if you use it for your Raspberry Pi in outdoor hacking environments or if you need it to control any computer, this is the easiest way to do it. The world's first Touch Pad 90-degree flip design With a 90-degree flip a switch function key Touch Pad, allows you to be more human mode of operation to achieve click, scroll, and the mouse click action.

### Specifications

Product Dimensions: 15 x 8 x 1.5 cm

Boxed-product Weight: 59 g

Batteries 1 Lithium ion batteries required. (included)

Product Dimensions: 15 x 8 x 1.5 cm

Qwerty keyboard and ordinary keyboard layout

RF 2.4G wireless connection, enjoy up to 10m operating distance

Ultra-sensitive touchpad with 90-degree flip design

Built-in rechargeable polymer Lithium-ion battery

FROM  
**16 EUR**

amazon





## USB charger / supply 60W 6x 2.4A power charge/supply ports

Engineered to refuel devices up to 4x faster than conventional charging. Powered by INOV (Intelligent Negotiation for Optimum Voltage) Technology for fine-tuned power output and more optimized charging cycles. Up to 45% more efficient than Quick Charge 2.0 & compatible with a full range of USB connector types, from A to C. Tuned to support healthier battery function and faster USB charging speeds, AiPower intelligently adjusts power output to match the unique charging needs of all your USB powered gear. With up to 2.4A of dedicated adaptive output per Ai USB port, your devices will each receive the safest maximum recharge rate possible. Advanced circuitry and built in safeguards to protect your devices against excessive current, overheating, and over charging. Universal Compatibility Designed to work with all popular USB powered devices from iPhones to Android phones, tablets, Bluetooth speakers and more. Whatever USB powered gear you've got, we've got you covered.

### Specifications

Input:	AC 100-240V
Output:	(Quick Charge 3.0) 3.6V-6.5V 3A, 6.5V-9V 2A, 9V-12V 1.5A (Standard) 5V / 2.4A
Dimensions:	4.06"x2.80"x1.02"
Weight:	7.29 oz

FROM  
**35 EUR**

amazon



# Accessories

Storage, powerbanks, batteries, chargers, GPS



## High power Powerbank

With enough power for high consumption applications

20000mAh Power Bank charges the iPhone 7 6 times, the Galaxy S8 4.7 times or the 9.7-inch iPad Pro 1.5 times, ideal for weekends away and long journeys, travels. Charging 4 devices at the same time, and automatically detects your devices and delivers the fastest possible up to 2.4A per port or 4.8A overall. Unique Dual USB 4A input halves the charge time, takes only 6 hours to fully charge it when sleeping. EasyAcc Power Bank with Built-in LED flashlight for dark or low-light environments.

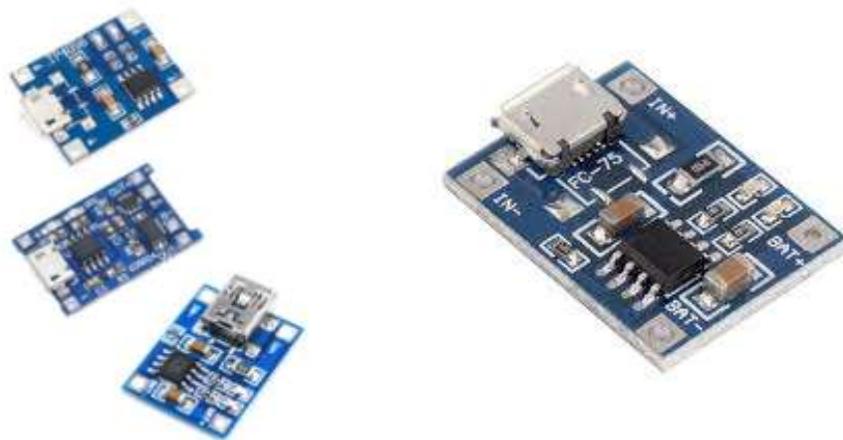
### Specifications

Capacity:	20000mAh/74Wh
Battery type:	Lithium-Ion battery cell
Input:	DC 5V 4A (max). Two different inputs for fast charging.
Output:	DC 5V 4.8A (max)
Size:	6.57 x 3.1 x 0.86 in.
Weight:	454 grams

FROM  
**30 EUR**

amazon





## USB Li - Po charger module

Charges any Li - Po 3.7V battery

The board charges a lithium ion cell with up to 1000 mAh charging current in any size (for example, 18650 cells with 2600 mAh removed from an old laptop battery). This means that with the module you can also charge lithium batteries that have a larger capacity than 1000 mAh. Charging time depends on input current. You can supply the charging current with a voltage of 5 V via mini USB cable or solder charging cable to the "+" contacts next to the USB port. For charging with the USB cable, any USB port from a mobile phone charger or computer is suitable. For example, I-Phone power supplies or a USB port on a PC USB HUB.

If a consumer is connected to the "out pin", the board switches off the output as soon as the battery level has fallen to 2.5 V. Also with a short circuit on the OUT+ and OUT pins. It can charge current while a consumer and a Li-Po battery are connected. For example, for solar cells that provides 5 volts and sufficient charging current.

### Specifications

Dimensions (L x W x H):	26 x 17 x 2 mm.
Switch-off voltage when charging:	4.2 V + - 1%
Under voltage protection:	<2.5vol.
Short circuit protection:	> 3 amps.
Input voltage:	4.5 to 5 V.
Available input connector:	mini USB and micro USB
Maximum charging current:	1000 milliamperes.
Output voltage:	Battery voltage.

FROM  
**1 EUR**

amazon



# Accessories

Storage, powerbanks, batteries, chargers, GPS



## SanDisk SSD USB disk

Small sized SSD with high capacity

The SanDisk Extreme Portable SSD is built to weather a variety of conditions with water, dust and drop-resistance. It is rated IP55 and is certified to withstand 2-meter drops. With up to 2TB of high-speed storage for high-res photos, videos and sound files, the SanDisk Extreme Portable SSD is perfect for all your creative pursuits. With high-speed transfers of up to 550MB/s, the SanDisk Extreme Portable SSD lets you offload files in a snap. Designed to work with both Windows and Mac, the SanDisk Extreme Portable SSD is equipped with a USB 3.1 Type-C connector and includes a USB Type-C to Type-C cable and a Type-C to Type-A adapter.

### Specifications

Connectivity:	USB
Standards:	USB 2.0 / 3.0
Connectors:	USB-A to USB-C and USB-C to USB-C
Sizes:	250GB, 500GB, 1TB, 2TB
Weight:	39 grams – 140 grams
High-speed transfers:	up to 550MB/s read speeds
Isolation:	IP55

FROM  
**99 EUR**

amazon





## SanDisk Extreme Plus 32 GB

High performance and quality microSD

Get extreme speeds for fast transfer, app performance, and 4K UHD for your Android based smartphone. SanDisk Extreme cards are built tough for extreme durability even under **challenging environmental conditions**. **Fast speeds reduce the time you're on hold** while your pictures and videos move to your card or from your card to your computer. Storage capacities from 32GB to 256GB expand device memory and **leave room to record video that's ready** for the new 4K UHD television screens and monitors.

### Specifications

Storage size:	32 GB
Dimensions:	0.1 x 1.5 x 1.09 cm
Weight:	5 grams
Write speed:	100 MB per second
Read speed:	60 MB per second
Accessories:	microSD to SD card adapter included

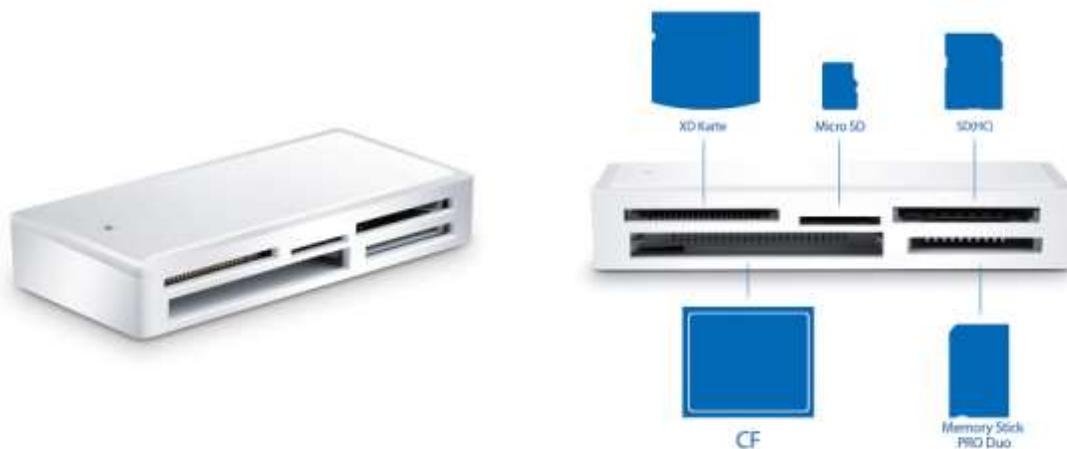
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**12 EUR**

amazon



# Accessories

Storage, powerbanks, batteries, chargers, GPS



## CSL-USB 3.0 Multi card reader

Reads quite all storage card types

High data transmission speeds of up to 5 GB/s are possible with the USB 3.0 Super speed card reader from CSL. Transfer HD videos, music, photos and data easily between USB devices and your computer or notebook at 10 times the speed compared to USB 2.0 (480 Mbit/s). In addition, several memory cards can be read simultaneously during operation. The card reader supports the following memory card formats: XD-memory # MS/MS PRO Duo # microSD # microSDHC # microSDXC # SD # SDHC # SDXC # CF # SD/ MicroSD class 10/ UHS-1. The device is also downward compatible with the obsolete USB 2.0 standard. Thanks to the ultra-compact dimensions (41 × 85 × 15 mm) and a low weight of only 30 g, the multifunctional card reader is also perfectly suited to be carried along in the laptop bag. Power is supplied directly via the USB port.

### Specifications

Supported card types: XD-memory, MS/MS PRO Duo, microSD, microSDHC, microSDXC, SD, SDHC, SDXC, CF

Operating system compatibility: Microsoft Windows 10, Microsoft Windows 8.1 (32/64bit), Windows 8 (32/64bit), Windows 7 (32/64bit), Windows XP (32/64bit), Linux and Mac OS

Cable length: 60cm

Dimensions: 4.1cm x 8.5cm x 1.5cm (LxWxH)

Weight: 30 g (device only)

Colour: White

FROM  
12 EUR

amazon



# Accessories

Storage, powerbanks, batteries, chargers, GPS



## Agptek USB3 - IDE/SATA converter

Reads all IDE and SATA hard disk types

As it supports 2.5" and 3.5" sizes IDE/SATA/SSD hard drive disks and, you can get all your drives active with this compact device. The three included ports enable to transfer data to all three hard drive disks simultaneously or among the 3 drives. And thanks to its USB 3.0 interface transfer speeds reach up to 5 Gbps. It permits duplicating, copying, backup'ing or transferring large amounts of data. An on/off Switch design for HDD protection, it's easy and convenient to use or switch it off. It's also very useful for forensic use.

### Specifications

Output interface:	USB 3.0 up to 5GBps Compatible with USB 2.0/1.1
Max. HDD capacity:	2 TB
Supported formats:	2.5"/3.5" IDE/SATA mechanical or SSD hard drive 5.25" CD/DVD drives
DC input:	Include 12V 2A Power Adapter
Support:	Plug and play, support hot swap, no drivers
Compatibility:	Windows XP / Vista / 7 / 8 /8.1/10 and Mac OS 10.1 and above, Linux
Material:	IDE/SATA
Note:	Only Support SATA M.2 key B / B+M SSD, does not support SATA SSD M.2 key M does NOT support any PCIe based SSD (NVMe and AHCI)

FROM  
**24 EUR**

amazon



# Accessories

Storage, powerbanks, batteries, chargers, GPS



## M.2 NVME to USB Adapter M- Key NVME to USB 3.1 10 Gbps

M.2 NVME to USB adapter Card, which is not cable needed. use this to clone a NVME SSD to another SSD. Without enclosure cover which is more effective in heat dissipation, can realizes **SSD's full** potential of its high performance. Support Samsung 950Pro/ 960Evo/ 970 Evo/ 970 Pro/ PM951/ PM961/ SM951/ SM961 and other M.2 SSDs with PCI-E (M-KEY) Interface Type, which size is 2230 / 2242 / 2260 / 2280. High performance 10Gbps USB3.1 Gen 2 bridge chip, high-speed retrieve and backup data. PLEASE NOTE: the raw SSD from some brand is totally not pre-formatted in any way so PC cannot recognize it, you have to go through Windows Disk Manager to make SSD identifiable as a volume. Then the adapter works great.

### Specifications

M.2 sizes supported: 22\*30mm (2230), 22\*42mm (2242), 22\*60mm (2260), 22\*80mm (2280)

Interface type: M.2 NVME to USB 3.1 SS 10Gbps USB3.1

Support: Plug and play, support hot swap, no drivers

Compatibility: Windows XP / Vista / 7 / 8 /8.1/10 and Mac OS 10.1 and above, Linux

Material: PCB

Note: Only Support SSD M.2 key M

FROM  
30 EUR

amazon





## Adwits USB3 UASP-SATA NGFF M.2 M.2 type SATA SSD reader

Many actual computers, specially the compact ones include a new SSD hard disk type which uses the new M.2 device format. This kind of SSD disks are available in different sizes (2230, 2242, 2260 and 2280) which are related to the width and length. But also, the connector pins are available in different formats (key B, key M and key B+M) which are related to the number and position of the pins. The final interface type can also be SATA or PCIe. This adapter permits connecting the SATA type SSD cards to an USB 3.0/2.0 port, in order to be able to read, write copy or clone the hard disk data to another device. When upgrading your laptop's hard disk to a bigger one, you'll need it. It's also very useful for forensic use.

### Specifications

M.2 sizes supported:	22*30mm (2230), 22*42mm (2242), 22*60mm (2260), 22*80mm (2280)
Interface type:	M.2 NGFF SATA SSD to USB 3.0 SS
Support:	Plug and play, support hot swap, no drivers
Compatibility:	Windows XP / Vista / 7 / 8 / 8.1/10 and Mac OS 10.1 and above, Linux
Material:	aluminum
Note:	Only Support SATA M.2 key B / B+M SSD, does not support SATA SSD M.2 key M does NOT support any PCIe based SSD (NVMe and AHCI)

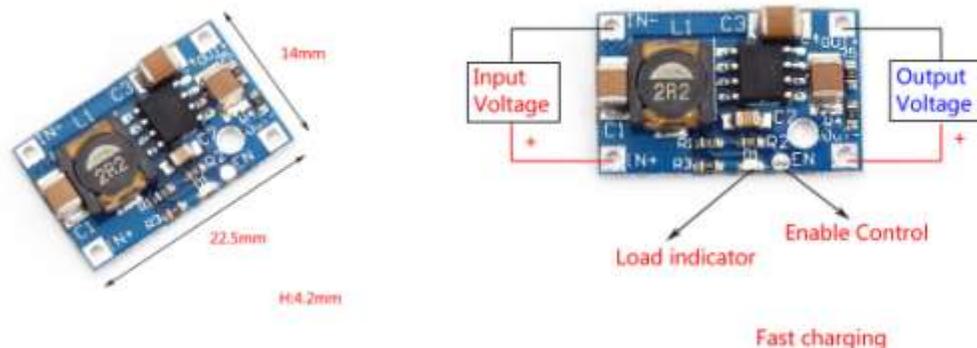
FROM  
**14 EUR**

amazon



# Accessories

Storage, powerbanks, batteries, chargers, GPS



## DC-DC step up 5V output

The complement for your Li-Po battery

It is a USB DC step up isolated power supply module. It can be used as ordinary buck power supply module, charger and LED constant current driver. Simple and efficient, practical. It supports fast charge and up to 3A current output. The DC input voltage must be between 2.5V and 5V and it offers a regulated output voltage about 5V, which makes it a good option for converting Li-Po/Li-Ion batteries voltage (3.6V/3.7V) to typical USB voltage (5V). It is a very cheap and valid option for your electronics projects.

### Specifications

Product Name:	DC Fast Charging Step Up Power Supply Module
Working Voltage:	DC 2.5V-5.0V
Output Voltage:	DC 4.9V-5.3V
Output Current:	3A(But long-term work is recommended below 2.5A)
Conversion efficiency:	About 95%
Output ripple:	About 80mV
Size:	22.5*14*4.2mm

There is a LED load indicator. Weak flash when no load, the greater the load, the higher the brightness.

'EN' is enable control port. Default enabled. User need remove resistor R2 if user need control enable by other such as button. High level TTL signal to turn ON enable and low level TTL signal to disable.

Due to the large current, it is recommended to use a thicker wire. Wire cross-section greater than 1.5 square millimetres. Wire cannot be reversed. Otherwise the module will be damaged.

FROM  
**0.7 EUR**

amazon





## snapVCC 3.3V / 5V regulator

Snaps onto 9V batt to power your devices

SnapVCC is a highly portable and convenient power supply for your electronics projects. It's designed to fit right on a 9V battery and give you 3.3V or 5V power wherever you need it. Many circuits require a regulated 3.3 or 5 volt power supply. The 9V battery is an easily available power supply option. A common way to power circuits using a 9V battery is to use a Linear regulator IC circuit to drop the voltage down. SnapVCC eliminates this additional circuit by putting the regulator right on top of the 9V battery. Also, since snapVCC uses a buck converter, it's more efficient than using a linear regulator. snapVCC is an Open Source hardware project. All design files for this project can be found on the electronut GitHub repository. snapVCC uses a buck converter for efficient regulation of battery voltage. snapVCC has an LED power indicator, reverse polarity protection, and you can switch between 3.3V and 5V by just switching a jumper.

### Specifications

Texas Instruments TPS560200 buck converter with 500 mA output current

3.3 V / 5 V output, switchable via jumper

P-MOSFET for reverse polarity protection

Power indicator low power LED

Tiny form factor, sits on top of a 9V battery

Power headers are standard .1" pitch

FROM  
9 EUR



# Accessories

Storage, powerbanks, batteries, chargers, GPS



## Li - Po batteries

You will need battery power

This battery is really the latest state of the art technology in rechargeable. It is extremely thin, light weight and super thin compared to any rechargeable chemistry. Low weight, small size but huge capacity. The other advantage of the Lithium Polymer technology is the very low self-discharge technology. There are many **models offering different capacity, depending on what you'll need in autonomy and size.** There are different connectors in this batteries:

[https://www.banggood.com/2PCS-DIY-Micro-2\\_0-Male-Female-Connector-Plug-Cable-For-Eachine-E010-E010C-LIPO-Battery-p-1166427.html](https://www.banggood.com/2PCS-DIY-Micro-2_0-Male-Female-Connector-Plug-Cable-For-Eachine-E010-E010C-LIPO-Battery-p-1166427.html)

[https://www.banggood.com/DIY-1\\_25mm-2-Pin-Micro-Male-Female-Connector-Plug-Cable-for-RC-LIPO-Battery-FPV-Drone-Quadcopter-p-1080391.html](https://www.banggood.com/DIY-1_25mm-2-Pin-Micro-Male-Female-Connector-Plug-Cable-for-RC-LIPO-Battery-FPV-Drone-Quadcopter-p-1080391.html)

### Specifications

Voltage:	DC 3.7V
Capacity:	2500mAh
Package Content:	Lithium Polymer Battery
Material:	Lithium Polymer
Net Weight:	48g
Connector Type:	2P 2mm Pitch
Cable Length:	5cm / 2"
Size (L*W*T):	73 x 55 x 4.8mm / 2.87" x 2.17" x 0.19"
Discharge Rate:	1C

FROM  
**8 EUR**

amazon





## Mic-Lock device

Blocks microphone on many devices

When hackers, companies, or governments gain remote access control of your laptop, tablet or smartphone, they're able to turn on the webcam—an action that causes the microphone to go live, too. While being watched is bad enough, being recorded without your permission is even worse. Are you sure your conversations are private?

Be sure with Mic-Lock, the only digital anti-spying sound blocker on the market! Mic-Lock is the first and only device to offer unbeatable protection against hackers and spies attempting to listen in on you.

### Specifications

**KEEP CONVERSATIONS PRIVATE!** Mic-Lock secures your device's microphone input with proprietary semiconductor comes with a lifetime guarantee.

**PREVENTS CYBER ATTACKERS** from using your microphone to listen in on you.

**THE ONLY ANTI-SPYING** sound blocker on the market.

**COMPACT DESIGN** with keychain attachment is portable for work and travel. Use with our webcam cover for complete audio and visual protection.

**SIMPLY PLUG** into your laptop, phone or tablet and you're ready to go!

FROM  
**6 EUR**

amazon



# Accessories

Storage, powerbanks, batteries, chargers, GPS



## BUBM 3x Accessories Bags Gadget Travel Case Electronics Organizer

Three varying sizes bags made of durable splash proof nylon, with high quality double zips and each bag has its own carry handle for easier transportation. All cases have a netted zip pocket for holding portable powerbank, hard drive, charger cords, usb flash disk, passport, etc to keep them closed and secure. Each gadget bag comes with removable dividers allowing flexible positioning to separate your items to suit your needs. Meanwhile, it comes with 5 brightly coloured cable ties to keep the contents neatly organised and prevent the tangle.

Made of splash proof nylon helps to keep out water and prevent large water permeation  
2 sturdy zipper pullers help to easy access the things you put (only the large size bag)  
Removable dividers allowing flexible positioning and separate items to make it organised  
Carry handle makes it portable to carry around for travel, business trip or any occasion  
Keep every gadgets you need organized, make it tidy, you have everything right at hand

### Specifications

Color :	Black
External Material :	High quality, durable nylon
Large Size:	(27x 19.5x 7.5cm)
Middium Size:	(23x 16x 5.7cm)
Small Size:	(19.5x 12.5x 5cm)
Material:	splash proof nylon
Zip:	2 sturdy zipper pullers

FROM  
**25 EUR**

amazon





## Lockpicking training kit

Real hackers know Lockpicking

No, picking a lock isn't just for criminals looking to make off with your flat screen TV. On the opposite, it's a very useful skill to have; just ask Jason Bourne, James Bond or any secret agent that ever needed to get into a room quickly and discretely. While you may not be a super spy trying to fill out your spy kit, the Lock Cowboy 20-Piece Lock Pick Set with amenities will give you all the tools, training and knowledge you need to unlock yourself out of a jam. Lock picking seems like it would be a challenge, right? Well, luckily for you, our lock pick set is so versatile and comprehensive that we've given you everything you need to start and continue. From lock picking tools to a transparent padlock for training to a lock pick set for your wallet, we've got you covered. Godpick visible crystal cutaway practice lock allows you can see clearly how the pins work when a key is inserted, this help you understand the mechanism of the locks, very helpful for Locksmith training and lock practice. So whether you're looking to impress your friends, need a way to keep you from locking yourself out of the house again or you just want to add to your locksmith set, choose Lock Cowboy, and you'll never need another lock pick set again.

### Specifications

15-Piece Lock Pick Set with Leather Case

5-Piece James Bond Credit Card Wallet-Size Lock Picking Kit

Transparent Cutaway Padlock with Keys and a Case

Beginner's Quick Start e-Guide with 2 Video Illustrations

Advanced MIT Guide to Lock Picking

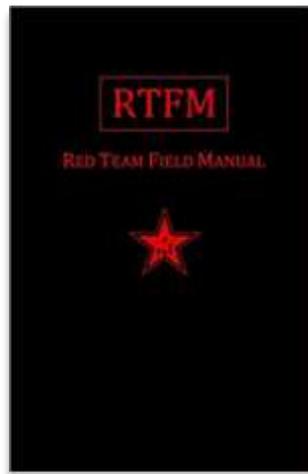
FROM  
**15 EUR**

amazon



# Accessories

Storage, powerbanks, batteries, chargers, GPS



## RTFM READ THE FUCKING MANUAL

No, RTFM doesn't really mean that. The real meaning is "Red Team Field Manual", and it's one of the **most useful books you can carry inside your hacker's bag**. The Red Team Field Manual (RTFM) is a no fluff, but thorough reference guide for serious Red Team members who routinely find themselves on a mission without Google or the time to scan through a man page. The RTFM contains the basic syntax for commonly used Linux and Windows command line tools, but it also encapsulates unique use cases for powerful tools such as Python and Windows PowerShell.

The RTFM will repeatedly save you time looking up the hard to remember Windows nuances such as Windows wmic and dsquery command line tools, key registry values, scheduled tasks syntax, startup locations and Windows scripting. More importantly, it should teach you some new red team techniques.

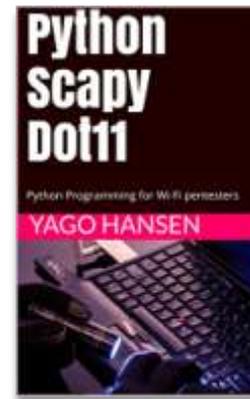
### Specifications

Author:	Ben Clark
Publisher:	CreateSpace Independent Publishing Platform; 1.0 edition (11 Feb. 2014)
Format:	Paperback
Pages:	96 pages
Product Dimensions:	14 x 0.6 x 21.6 cm
Language:	English
ISBN-10:	1494295504



amazon





## Python Scapy Dot11

Python for Wi - Fi pentesters

Since this is hardware catalogue, it's not the best place for including a book like this, but... I will do it for some reasons: the first one is that I wrote it ;-) and I want to publicize it. The second reason is that I have used the Scapy capacities in many network attacks inside of some of the included Network hacking tools (routers). This book offers a real solution for all those who love cybersecurity and hacking on Wi-Fi / 802.11 technologies, those who want to learn how to easily program their own tools for pentesting or auditing wireless networks. During the recent years Python has reached a prominent position as one of the bests programming languages for the pentesting, thanks to its simplicity and its wide capabilities. The large number of modules, libraries and examples publicly available permit to easily code any kind of application. Scapy is the most complete network module for Python, and allows analysing, dissecting, forging and injecting any frame over any existing network protocol. The scarcity of documentation on Scapy Dot11 makes this book a unique tool for all professionals, hackers, pentesters, security analysts and cyberforensics who wish to create their own arsenal of Wi-Fi penetration tools. The format of this book offers a first section which covers a theoretical introduction about Wi-Fi networks and their operating structure. The second part, eminently practical, presents a selection of more than 40 selected Python programmed scripts that use the Scapy library to perform Hacking and Pentesting Wi-Fi operations.

### Specifications

Author:	Yago Hansen
Publisher:	Createspace Independent Pub; Edición: 1 (4 de febrero de 2017)
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Pages:	212 pages
Product Dimensions:	14 x 0.6 x 21.6 cm
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FROM  
**9.5 EUR**

amazon



