STM32F4
DISCOVERY SHIELD

USB UART

mikroBUS 1

mikroBUS 2

3.3V VOLTAGE REGULATOR

HW REV. 1.00

DEVELOPMENT TOOL BY MIKROELEKTRONIKA

RoHS

mikroBUS 3

mikroBUS 4

STM32F4
DISCOVERY
SHIELD

STM32

mikroBUS

SHIELD

TO OUR VALUED CUSTOMERS

I want to express my thanks to you for being interested in our products and for having confidence in MikroElektronika.

The primary aim of our company is to design and produce high quality electronic products and to constantly improve the performance thereof in order to better suit your needs.

Nebojsa Matic
General Manager

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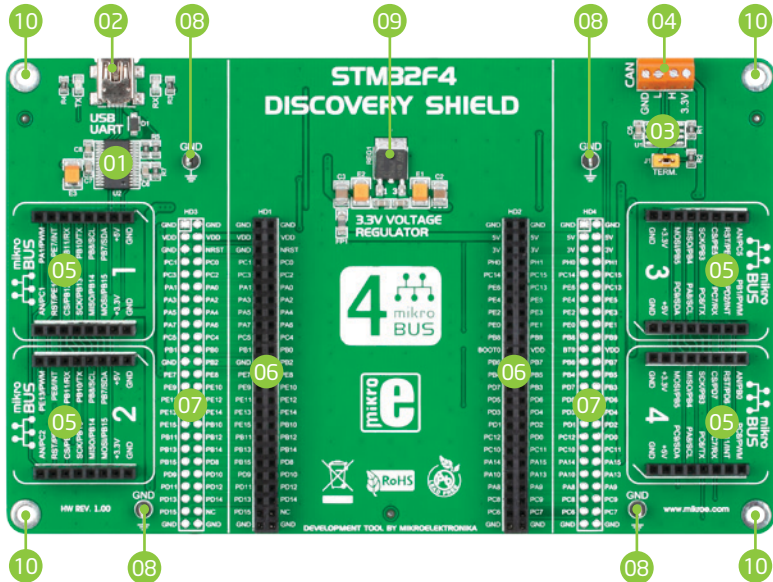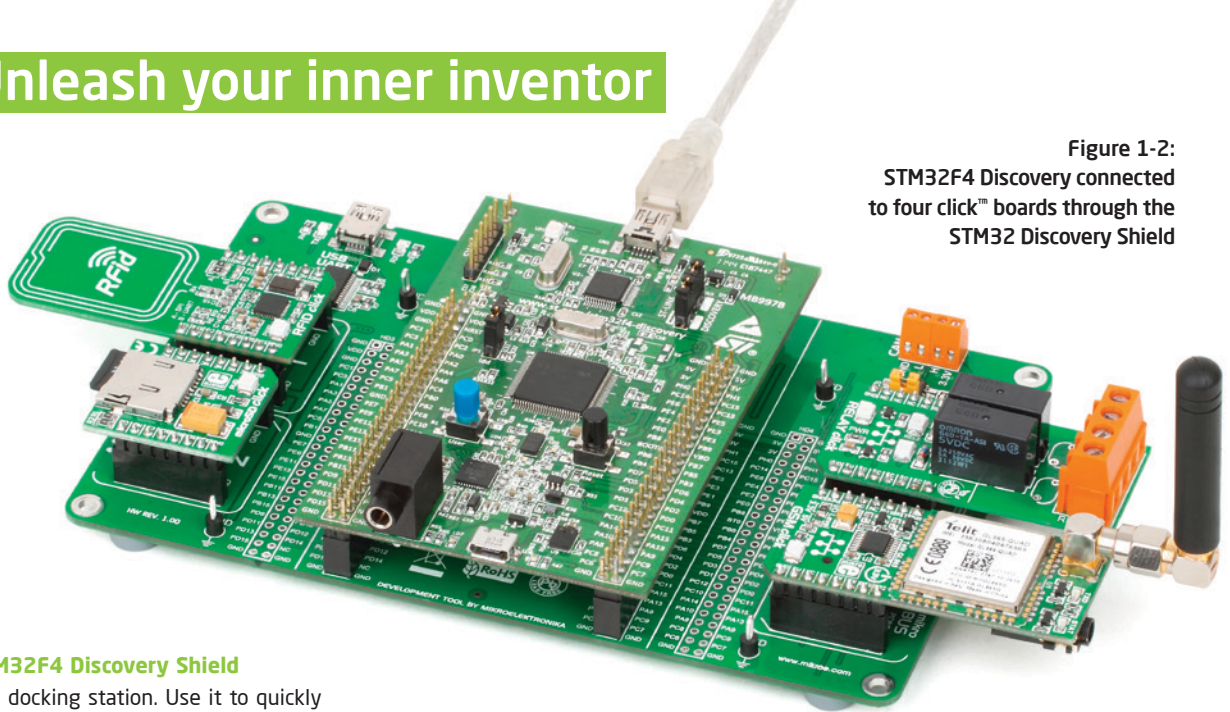
What is STM32F4 Discovery Shield?

Figure 1-1: STM32F4 Discovery shield

Equip your STM32F4 Discovery easily with an arsenal of additional modules using the **STM32F4 Discovery SHIELD**. This versatile extension board features following modules:

01 FT232RL USB-UART chip

02 USB MINI-B connector

03 CAN transceiver SN65HVD230

04 Screw terminals

05 Four mikroBUS sockets

06 2x25 headers for STM32F4 Discovery board

07 2x25 connection pads
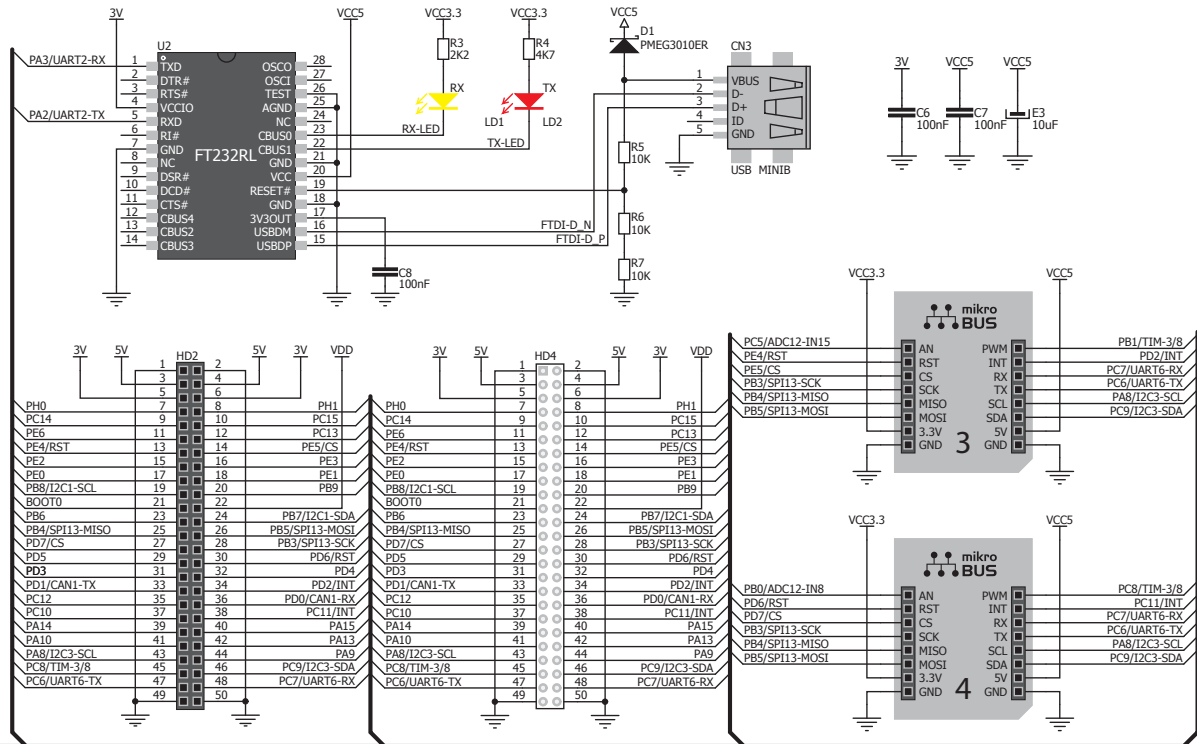
08 GNDs

09 3.3V voltage regulator

10 Mounting holes

Unleash your inner inventor

STM32F4 Discovery Shield
is a docking station. Use it to quickly
turn your Discovery board into a RFid lock, SMS-
triggered control switch, GPS tracking device, full-blown weather
station, or whatever else you have in mind. Assemble your prototypes quickly using
click™ additional boards. Just snap them into mikroBUS sockets, like LEGO blocks. As easy as pie!

Schematic

VCC3.3

U1

PD1/CAN1-TX

1	D	Rs	8
2	GND	CANH	7
3	Vdd	CANL	6
4	R	Vref	5

SN65HVD230

PD0/CAN1-RX

C5
100nF

VCC3.3 CN1

CANH
CANL

R1
10

CN2

CANL J1B R2 CANH
100

3.3V VOLTAGE REGULATOR

5V
FP1
FERRITE

VCC5

C3
22uF

JE2
10uF

C4
100nF

REG1
3	Vin	GND	1
2	Vout		

LD29080DT33

VCC3.3

C1
100nF

JE1
10uF

C2
22uF

mikroBUS 1

VCC3.3   VCC5

PC1/ADC123-IN11	AN	PWM	PA1/TIM-2/5
PE10/RST	RST	INT	PE7/INT
PB12/CS	CS	RX	PB11/UART3-RX
PB13/SPI2-SCK	SCK	TX	PB10/UART3-TX
PB14/SPI2-MISO	MISO	SCL	PB8/I2C1-SCL
PB15/SPI2-MOSI	MOSI	SDA	PB7/I2C1-SDA
	3.3V	5V	
	GND	GND	

mikroBUS 2

VCC3.3   VCC5

PC2/ADC123-IN12	AN	PWM	PE13/TIM-1
PE12/RST	RST	INT	PE8/INT
PE14/CS	CS	RX	PB11/UART3-RX
PB13/SPI2-SCK	SCK	TX	PB10/UART3-TX
PB14/SPI2-MISO	MISO	SCL	PB8/I2C1-SCL
PB15/SPI2-MOSI	MOSI	SDA	PB7/I2C1-SDA
	3.3V	5V	
	GND	GND	

HD3

VDD   VDD

	1	2	
	3	4	
	5	6	NRST
PC1/ADC123-IN11	7	8	PC0
PC3	9	10	PC2/ADC123-IN12
PA1/TIM-2/5	11	12	PA0
PA3/UART2-RX	13	14	PA2/UART2-TX
PA5	15	16	PA4
PA7	17	18	PA6
PC5/ADC12-IN15	19	20	PC4
PB1/TIM-3/8	21	22	PB0/ADC12-IN8
	23	24	PB2
PE7/INT	25	26	PE8/INT
PE9	27	28	PE10/RST
PE11	29	30	PE12/RST
PE13/TIM-1	31	32	PE14/CS
PE15	33	34	PB10/UART3-TX
PB11/UART3-RX	35	36	PB12/CS
PB13/SPI2-SCK	37	38	PB14/SPI2-MISO
PB15/SPI2-MOSI	39	40	PD8
PD9	41	42	PD10
PD11	43	44	PD12
PD13	45	46	PD14
PD15	47	48	
	49	50	

HD1

VDD   VDD

	1	2	
	3	4	
	5	6	NRST
PC1/ADC123-IN11	7	8	PC0
PC3	9	10	PC2/ADC123-IN12
PA1/TIM-2/5	11	12	PA0
PA3/UART2-RX	13	14	PA2/UART2-TX
PA5	15	16	PA4
PA7	17	18	PA6
PC5/ADC12-IN15	19	20	PC4
PB1/TIM-3/8	21	22	PB0/ADC12-IN8
	23	24	PB2
PE7/INT	25	26	PE8/INT
PE9	27	28	PE10/RST
PE11	29	30	PE12/RST
PE13/TIM-1	31	32	PE14/CS
PE15	33	34	PB10/UART3-TX
PB11/UART3-RX	35	36	PB12/CS
PB13/SPI2-SCK	37	38	PB14/SPI2-MISO
PB15/SPI2-MOSI	39	40	PD8
PD9	41	42	PD10
PD11	43	44	PD12
PD13	45	46	PD14
PD15	47	48	
	49	50	

U2 — FT232RL

Pin	Name		Name	Pin
1	TXD	OSCO	28
2	DTR#	OSCI	27
3	RTS#	TEST	26
4	VCCIO	AGND	25
5	RXD	NC	24
6	RI#	CBUS0	23
7	GND	CBUS1	22
8	NC	GND	21
9	DSR#	VCC	20
10	DCD#	RESET#	19
11	CTS#	GND	18
12	CBUS4	3V3OUT	17
13	CBUS2	USBDM	16
14	CBUS3	USBDP	15

PA3/UART2-RX
PA2/UART2-TX

3V

VCC5

VCC3.3 R3 2K2 RX RX-LED

VCC3.3 R4 4K7 TX TX-LED LD1 LD2

VCC5 D1 PMEG3010ER

CN3 — USB MINIB

1	VBUS
2	D-
3	D+
4	ID
5	GND

R5 10K
R6 10K
R7 10K

FTDI-D_N
FTDI-D_P

C8 100nF

3V VCC5 VCC5
C6 100nF C7 100nF E3 10uF

HD2

	3V 5V	1	2	5V 3V VDD	
		3	4		
		5	6		
PH0		7	8		PH1
PC14		9	10		PC15
PE6		11	12		PC13
PE4/RST		13	14		PE5/CS
PE2		15	16		PE3
PE0		17	18		PE1
PB8/I2C1-SCL		19	20		PB9
BOOT0		21	22		
PB6		23	24		PB7/I2C1-SDA
PB4/SPI13-MISO		25	26		PB5/SPI13-MOSI
PD7/CS		27	28		PB3/SPI13-SCK
PD5		29	30		PD6/RST
PD3		31	32		PD4
PD1/CAN1-TX		33	34		PD2/INT
PC12		35	36		PD0/CAN1-RX
PC10		37	38		PC11/INT
PA14		39	40		PA15
PA10		41	42		PA13
PA8/I2C3-SCL		43	44		PA9
PC8/TIM-3/8		45	46		PC9/I2C3-SDA
PC6/UART6-TX		47	48		PC7/UART6-RX
		49	50		

HD4

	3V 5V	1	2	5V 3V VDD	
		3	4		
		5	6		
PH0		7	8		PH1
PC14		9	10		PC15
PE6		11	12		PC13
PE4/RST		13	14		PE5/CS
PE2		15	16		PE3
PE0		17	18		PE1
PB8/I2C1-SCL		19	20		PB9
BOOT0		21	22		
PB6		23	24		PB7/I2C1-SDA
PB4/SPI13-MISO		25	26		PB5/SPI13-MOSI
PD7/CS		27	28		PB3/SPI13-SCK
PD5		29	30		PD6/RST
PD3		31	32		PD4
PD1/CAN1-TX		33	34		PD2/INT
PC12		35	36		PD0/CAN1-RX
PC10		37	38		PC11/INT
PA14		39	40		PA15
PA10		41	42		PA13
PA8/I2C3-SCL		43	44		PA9
PC8/TIM-3/8		45	46		PC9/I2C3-SDA
PC6/UART6-TX		47	48		PC7/UART6-RX
		49	50		

mikroBUS 3

VCC3.3 — VCC5

PC5/ADC12-IN15	AN	PWM	PB1/TIM-3/8
PE4/RST	RST	INT	PD2/INT
PE5/CS	CS	RX	PC7/UART6-RX
PB3/SPI13-SCK	SCK	TX	PC6/UART6-TX
PB4/SPI13-MISO	MISO	SCL	PA8/I2C3-SCL
PB5/SPI13-MOSI	MOSI	SDA	PC9/I2C3-SDA
	3.3V	5V	
	GND	GND	

mikroBUS 4

VCC3.3 — VCC5

PB0/ADC12-IN8	AN	PWM	PC8/TIM-3/8
PD6/RST	RST	INT	PC11/INT
PD7/CS	CS	RX	PC7/UART6-RX
PB3/SPI13-SCK	SCK	TX	PC6/UART6-TX
PB4/SPI13-MISO	MISO	SCL	PA8/I2C3-SCL
PB5/SPI13-MOSI	MOSI	SDA	PC9/I2C3-SDA
	3.3V	5V	
	GND	GND	

Click boards are plug and play!

Buzzer, Gyroscope, GPS, Compass, Relay, FM, Bluetooth - you name it, we got it! We have an arsenal of over 65 click™ add-on boards, all pin compatible with your Discovery Shield. And the list grows bigger every week.

Each click™ comes with a set of working example codes. Please visit the click™ boards webpage for the complete list of currently available boards:

http://www.mikroe.com/click/

EVE click™

Fiber Opt click™

GPS2 click™
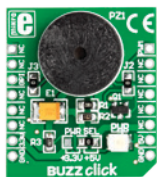
GSM2 click™

BUZZ click™
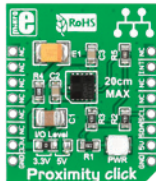
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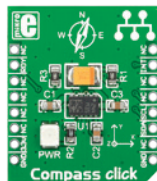
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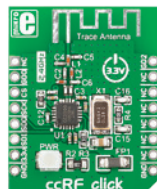
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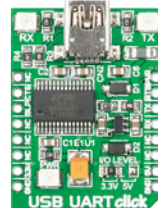
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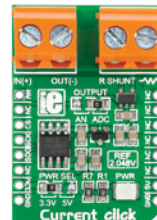
Current click™

Dali click™
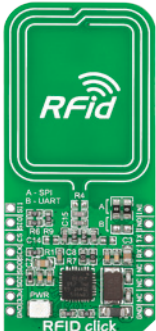
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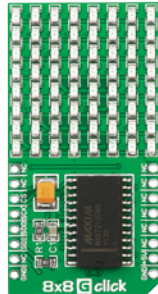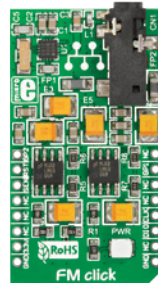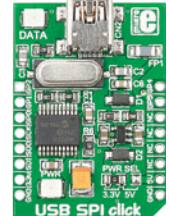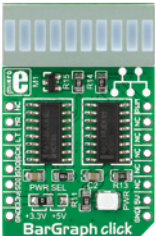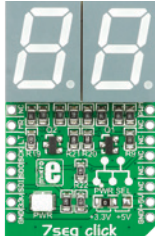
BarGraph click™   7seg click™   THERMO click™   Gyro click™   EEPROM click™   LightHz click™   Pressure click™
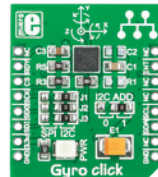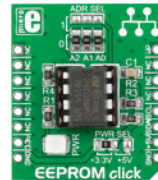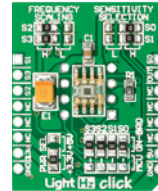
Dimensions

STM32F4
DISCOVERY SHIELD

6169

7.77 / 306
65.94 / 2596
11.18 / 440

63.54 / 2500
27.94 / 1100
22.86 / 900
97 / 3818.93

HW REV. 1.00

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1800 / 45.72
200 / 5.08
397 / 10.08
1387.5 / 35.24

13.45 / 530
8.25 / 325
1.2 / 47.25
4 / 157.5

Legend
━━ mm
━━ mils

Mounting hole size
Ø 3.2 mm
Ø 126 mils

STM32

mikroBUS

SHIELD

If you want to learn more about our products, please visit our web site at www.mikroe.com
If you are experiencing some problems with any of our products or just need additional
information, please place your ticket at www.mikroe.com/support
If you have any questions, comments or business proposals,
do not hesitate to contact us at office@mikroe.com

STM32F4 Discovery Shield Manual
ver. 1.00

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