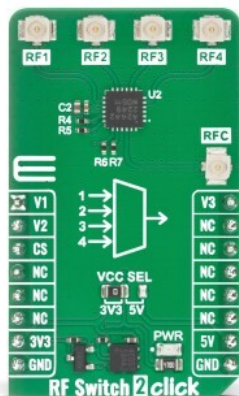


RF Switch 2 Click



PID: MIKROE-6914

RF Switch 2 Click is a compact add-on board designed for high-frequency RF signal routing in demanding wireless and signal management applications. It is based on the [PE42442](#), a 6GHz absorptive SP4T RF switch from [muRata](#). This board features four symmetric RF ports and one common RFC port through u.FI connectors, high isolation up to 6GHz for reduced signal interference, an integrated CMOS decoder for simple three-pin control via the mikroBUS™ socket, and selectable 3.3V or 5V logic compatibility, combining flexible integration with strong RF performance. It is well suited for 3G/4G wireless infrastructure, RF signal distribution, antenna path switching, automated test equipment, and other high-performance RF systems.

For more information about **RF Switch 2 Click** visit the official [product page](#).

How does it work?

RF Switch 2 Click is based on the PE42442, a 6GHz absorptive SP4T RF switch from muRata, developed with HaRP™ technology enhancements to provide excellent RF performance across a wide frequency range. This switch features four symmetric RF output ports, labeled RF1 through RF4, each available through dedicated u.FI connectors compatible with [IPEX-SMA cables](#) also offered by MIKROE, allowing flexible connection to external RF equipment and antenna paths. In addition to these four switched RF paths, the board also includes an RFC u.FI connector, which serves as the common RF terminal through which the input signal is directed to one of the selected RF ports, making it the central point for signal distribution within the switching architecture. This board is ideal for 3G/4G wireless infrastructure, signal distribution networks, test equipment, and other high-frequency RF applications.

Mikroe produces entire development toolchains for all major microcontroller architectures.

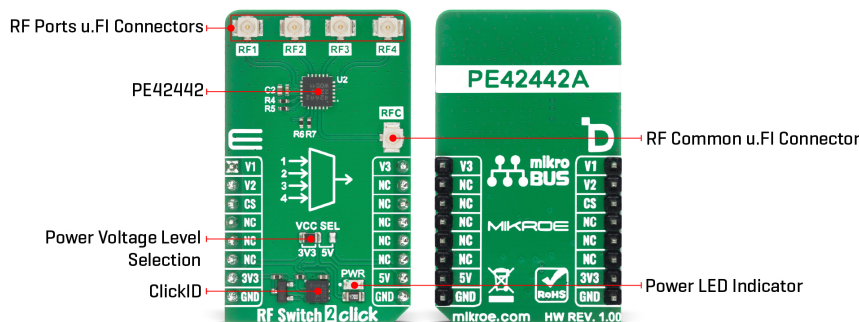
Committed to excellency, we are dedicated to helping engineers bring the project development up to speed and achieve outstanding results.



ISO 27001: 2013 certification of informational security management system.
 ISO 14001: 2015 certification of environmental management system.
 OHSAS 18001: 2008 certification of occupational health and safety management system.



ISO 9001: 2015 certification of quality management system (QMS).



The PE42442 is manufactured using UltraCMOS® process, an advanced variation of silicon-on-insulator technology built on a sapphire substrate, which combines the performance advantages typically associated with GaAs solutions with the cost efficiency and integration benefits of conventional CMOS. It delivers very high isolation between channels up to 6GHz, helping reduce unwanted signal coupling and ensuring clean and reliable path selection in sensitive RF systems. An integrated CMOS decoder simplifies device operation by enabling control through a three-pin CMOS interface via the V1, V2, and V3 pins on the mikroBUS™ socket, reducing control complexity while maintaining fast switching.

This Click board™ can operate with either 3.3V or 5V logic voltage levels selected via the VCC SEL jumper. This way, both 3.3V and 5V capable MCUs can use the communication lines properly. Also, this Click board™ comes equipped with a library containing easy-to-use functions and an example code that can be used as a reference for further development.

Specifications

Type	Port expander
Applications	Ideal for 3G/4G wireless infrastructure, RF signal distribution, antenna path switching, automated test equipment, and other high-performance RF systems
On-board modules	PE42442 - 6GHz SP4T RF switch from muRata
Key Features	6GHz absorptive SP4T RF switch, four symmetric RF ports, RFC common RF terminal, u.FI connectors compatible with IPEX-SMA cables, high isolation up to 6GHz, integrated CMOS decoder, three-pin CMOS control interface, HaRP™ technology enhancements, high linearity, excellent harmonic performance, fast switching, and more
Interface	GPIO
Feature	ClickID
Compatibility	mikroBUS™
Click board size	M (42.9 x 25.4 mm)

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Input Voltage	3.3V or 5V
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Pinout diagram

This table shows how the pinout on RF Switch 2 Click corresponds to the pinout on the mikroBUS™ socket (the latter shown in the two middle columns).

Notes	Pin					Pin	Notes
Control Logic Input 1	V1	1	AN	PWM	16	V3	Control Logic Input 3
Control Logic Input 2	V2	2	RST	INT	15	NC	
ID COMM	CS	3	CS	RX	14	NC	
	NC	4	SCK	TX	13	NC	
	NC	5	MISO	SCL	12	NC	
	NC	6	MOSI	SDA	11	NC	
Power Supply	3.3V	7	3.3V	5V	10	5V	Power Supply
Ground	GND	8	GND	GND	9	GND	Ground

Onboard settings and indicators

Label	Name	Default	Description
LD1	PWR	-	Power LED Indicator
JP1	VCC SEL	Left	Power Voltage Level Selection 3V3/5V: Left position 3V3, Right position 5V

RF Switch 2 Click electrical specifications

Description	Min	Typ	Max	Unit
Supply Voltage	3.3	-	5	V
RF Frequency Range	30	-	6000	MHz

Software Support

[RF Switch 2 Click](#) demo application is developed using the [NECTO Studio](#), ensuring compatibility with [mikroSDK](#)'s open-source libraries and tools. Designed for plug-and-play implementation and testing, the demo is fully compatible with all development, starter, and mikromedia boards featuring a [mikroBUS™](#) socket.

Example Description

This example demonstrates the use of the RF Switch 2 Click board to control RF signal routing by switching between available RF paths. The application cycles through all available switching modes, enabling each RF channel one at a time and also demonstrating the all-off state.

Key Functions

- `rfs witch2_cfg_setup` This function initializes Click configuration structure to initial values.
- `rfs witch2_init` This function initializes all necessary pins and peripherals used for this Click board.

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- `rfswitch2_set_mode` This function sets the RF switch mode by setting V1, V2, and V3 pins logic state.

Application Init

Initializes the logger and RF Switch 2 Click driver, sets up mikroBUS mapping, and prepares digital output pins for controlling the RF switch.

Application Task

Cycles through all switch modes, selecting each RF output sequentially (RF1–RF4) followed by the ALL OFF mode, with delay between changes.

Application Output

This Click board can be interfaced and monitored in two ways:

- Application Output - Use the "Application Output" window in Debug mode for real-time data monitoring. Set it up properly by following [this tutorial](#).
- UART Terminal - Monitor data via the UART Terminal using a [USB to UART converter](#). For detailed instructions, check out [this tutorial](#).

Additional Notes and Information

The complete application code and a ready-to-use project are available through the NECTO Studio Package Manager for direct installation in the [NECTO Studio](#). The application code can also be found on the MIKROE [GitHub](#) account.

Resources

[mikroBUS™](#)

[mikroSDK](#)

[Click board™ Catalog](#)

[Click boards™](#)

[ClickID](#)

Downloads

[RF Switch 2 click 2D and 3D files v100](#)

[RF Switch 2 click schematic v100](#)

[PE42442 datasheet](#)

[RF Switch 2 click example package](#)

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