

# 3G SARA click

MIKROE-2244

Weight: 30 g



3G SARA click is a mikroBUS™ add-on board with the **smallest UMTS/HSPA cellular modem** available today – the [u-blox U201](#), from the award-winning SARA series.

The board has **everything you need to add 3G to your devices** and make them respond and react to phone calls and messages – or send/receive data at speeds up to 7.2 Mb/s – from anywhere in the world.

## Fully functional 3G transceiver

To start using 3G SARA click you will need a SIM card and an SMA antenna (sold separately), plus a mic/earphone headset if you want to send and receive calls. Everything else is already on the board.

Apart from the SIM card slot, SMA antenna connector, audio jack and audio codec IC, 3G SARA click also has a Micro USB port to connect the module to a PC.

u-blox provides a [free PC app](#) for sending and receiving messages and calls from your computer. Developers can also write their own custom applications using the USB-UART communication line.

The mikroBUS™ UART pins are used to connect the module to a target board MCU. Separate pins provide network status reporting and incoming call detection.

## SARA's award winning flexibility

M2M Evolution Magazine named SARA-U2 modules “Product of the Year” [in 2014](#). Several standout features make it desirable for professional developers.

All SARA modules share the same form factor. You can replace one SARA module with another on the same PCB design and preserve almost all the functionality – allowing you to design hardware that is easy to adjust and upgrade.

This makes 3G SARA click a great prototyping tool, whether you are designing consumer electronics or adding M2M communications to industrial devices.

Read more about the module in the vendor's [data sheet](#).

## What makes 3G so convenient?

3G modems allow you to take advantage of the vast cellular network infrastructure that spans the entire globe. It's the most convenient solution for long-range wireless data transmission — especially with the increased bandwidth that 3G provides compared to 2G GSM.

3G is short for third generation. The U201 module is specified as 3.75G, which simply means it is compatible with HSPA+ (in addition to previous generation UMTS, GPRS and EDGE networks)

If you are not familiar with cellular network standards and protocols and are not sure whether you need GSM or 3G, read our learn.mikroe.com [article about 2G/3G/4G](#) to get a better understanding.

Another article, about [AT commands and parsers](#) will also help you understand how to program GSM/3G modems in general.

## Applications

- Mobile internet terminals
- Automatic meter reading
- Remote monitoring and control
- Surveillance and security
- Point of Sales terminals in retail
- Smartphone-enabled automation (garage door opener, A/C activator, electric door lock control and so on)

## Specifications

<b>Type</b>	GSM
<b>Applications</b>	Mobile internet terminals, Automatic meter reading, Remote monitoring and control, Surveillance and security...
<b>On-board modules</b>	u-blox SARA U201 3G module
<b>Key Features</b>	SMA Antenna connector, SIM Card slot, MAX9860 16-Bit Mono Audio Voice Codec
<b>Key Benefits</b>	Micro USB port for connecting to PC
<b>Interface</b>	GPIO,UART
<b>Input Voltage</b>	3.3V,5V
<b>Compatibility</b>	mikroBUS
<b>Click board size</b>	L (57.15 x 25.4 mm)

## Pinout diagram

This table shows how the pinout on **3G SARA click** corresponds to the pinout on the mikroBUS™ socket (the latter shown in the two middle columns).

Notes	Pin					Pin	Notes
Network Status	<b>STAT</b>	1	AN	PWM	16	<b>RI</b>	Incoming ring detection
Power ON/OFF	<b>PWRKEY</b>	2	RST	INT	15	<b>CTS</b>	UART Clear To Send
UART Request to Send	<b>RTS</b>	3	CS	TX	14	<b>TXD</b>	UART Data Transmit
	NC	4	SCK	RX	13	<b>RXD</b>	UART Data Receive
	NC	5	MISO	SCL	12	NC	
	NC	6	MOSI	SDA	11	NC	
Power supply	<b>+3.3V</b>	7	3.3V	5V	10	<b>+5V</b>	Power supply
Ground	<b>GND</b>	8	GND	GND	9	<b>GND</b>	Ground

STAT pin (#1) shows the network status. The pin configured to provide the “Network status indication” function is set as:

- Continuous Low: if no service (no network coverage or not registered)
- Cyclically High for 100 ms, Low for 2 s: if registered home 2G network
- Cyclically High for 50 ms, Low for 50 ms, High for 50 ms, Low for 2 s: if registered home 3G network
- Cyclically High for 100 ms, Low for 100 ms, High for 100 ms, Low for 2 s: if registered visitor 2G network (roaming)
- Cyclically High for 50 ms, Low for 50 ms, High for 50 ms, Low for 100 ms: if registered visitor 3G network (roaming)
- Continuous High: if voice or data 2G/3G call enabled
- 3G SARA click can run on either a 3.3V or a 5V power supply. 3.3V is selected by default. To switch to 5V, use the onboard jumpers (zero ohm resistors).