

Easy-to-use, space-saving form factor based on custom designs

Capacitive Touchscreen Controller BU21101MWX



The BU21101MWX is an ultra-compact capacitive touchscreen controller that requires very few external components. It is designed to support a variety of sensors while providing high performance and significant space savings.

Waterproof



Mist
Drop
Wet finger

SNR Noise Filter



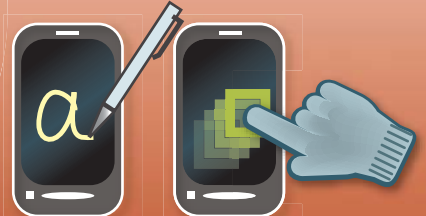
AC, LCD,
and other noise



Energy
efficient

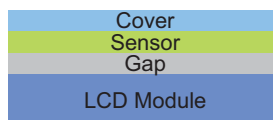
Easy
to use

Compatible with
stylus pens & gloves



Stylus pens: $\phi 2\text{mm}$
Gloves: 1 to 2mm thick

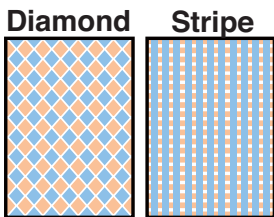
Sensor structure that supports a wide range of materials



Material	Cover
Glass	Max. 2.0 mm
Pet	Max. 1.5 mm

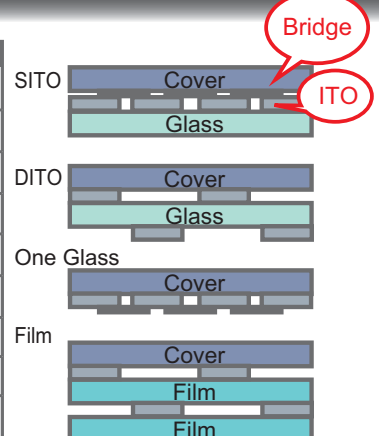
VCOM	Material	Gap
AC	Air	0.2 to 0.6mm depend on panel
DC	Any (Air/OCA/None)	0.0mm

Conditions	
Sensor size	Typ. 5.0mm
Mutual capacitance	0.5 to 10pF (Typ. 2pF)
Panel Loading (Cp * R)	Max. 1μsec
Cp : Parastic capacitance	Cp = 10pF
R : Registance	R = 100Koh



Compatible with most structures

Sensor	Material	OK/NG
Material	Glass	OK
	Film	OK
	Glass & Film	OK
Pattern	Diamond	OK
	Stripe	OK
	Structure	Bridge
	DITO	OK
	SITO	OK
	One Glass	OK



Energy-saving solution

Mask ROM

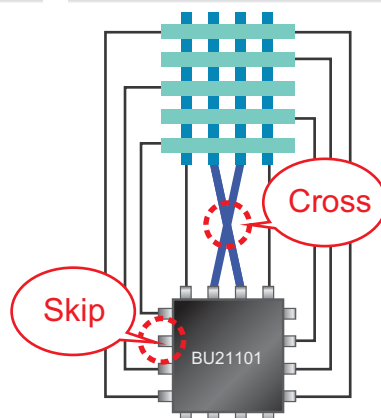
ROM/RAM built in
(The RAM features a patch system that operates when problems arise)



Fewer external parts
Only 2 capacitors required

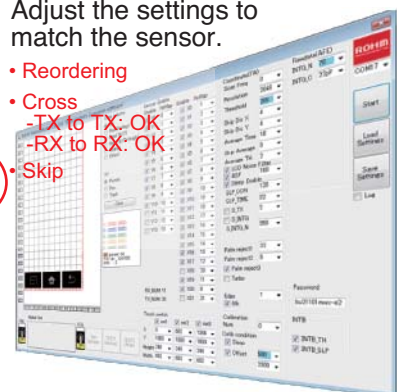
Thin, compact package
40pin
5.0x5.0x0.6mm

Flexible sensor design makes replacement easy

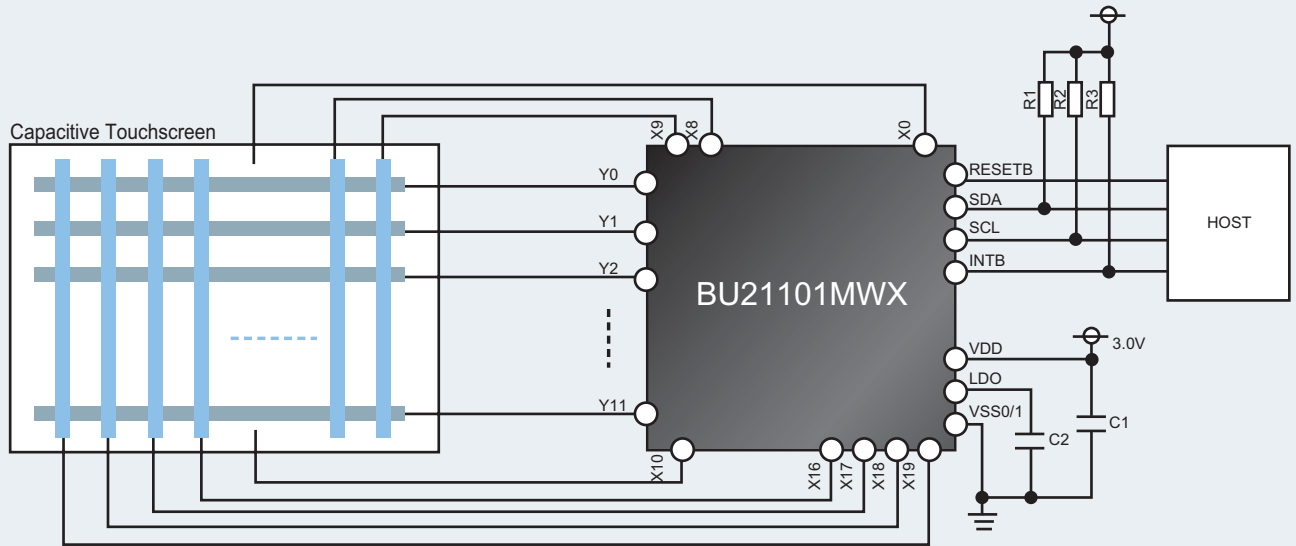


Adjust the settings to match the sensor.

- Reordering
- Cross
-TX to TX: OK
-RX to RX: OK
- Skip



Block Diagram



Specifications

Touchscreen Controllers

Capacitive Type

Capacitive Touchscreen Controller

Part No.	Supply Voltage (V)	MCU	Touch Detection	Host I/F	No. of Channels	Sensing Method	Panel Size (Inches)	Package
BU21101MWX	2.7 to 3.6	32bit	5-point	I ² C	32	Mutual	5	UQFN040X5050M

Number of Sensors (Total 32ch)

- TX (X) : 18-22ch
- RX (Y) : 10-14ch
- Common (TX/RX) : 4 ch

- Max panel size: 5 inches
- 3.0V single power supply
- I²C interface
- Thin, compact package
UQFN40: 5.0x5.0x0.6mm

Resistive Type

Part No.	Supply Voltage (V)	MCU	Resolution	Touch Detection	Standby Current	Operating Current	Host I/F	Operating Temp. (°C)	Package
BU21021GUL	2.7 to 3.6	32bit	4096×4096	1-/2-point	60μA	4.0mA	I ² C/SPI	-20 to +85	VCSP50L2 2.65×2.70, t=0.55
☆ BU21029GUL	1.65 to 3.6	-	4096×4096	1-/2-point	100μA	0.8mA	I ² C	-20 to +85	VCSP50L2 2.0×2.0, t=0.55
☆ BU21029MUV	1.65 to 3.6	-	4096×4096	1-/2-point	100μA	0.8mA	I ² C	-20 to +85	VQFN020V4040
BU21024FV-M	2.7 to 3.6	8bit	1024×1024	1-/2-point	60μA	4.0mA	I ² C/SPI	-40 to +85	SSOP-B28
BU21023GUL	2.7 to 3.6	8bit	1024×1024	1-/2-point	60μA	4.0mA	I ² C/SPI	-20 to +85	VCSP50L2 2.6×2.6, t=0.55
BU21023MUV	2.7 to 3.6	8bit	1024×1024	1-/2-point	60μA	4.0mA	I ² C/SPI	-20 to +85	VQFN028V5050
BU21025GUL	1.65 to 3.6	-	4096×4096	1-point	0.8μA	120μA	I ² C	-30 to +85	VCSP50L2 1.5×2.0, t=0.55

☆ Under Development

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ROHM Co., Ltd.

21 Saiin Mizosaki-cho, Ukyo-ku,
Kyoto 615-8585 Japan

www.rohm.com