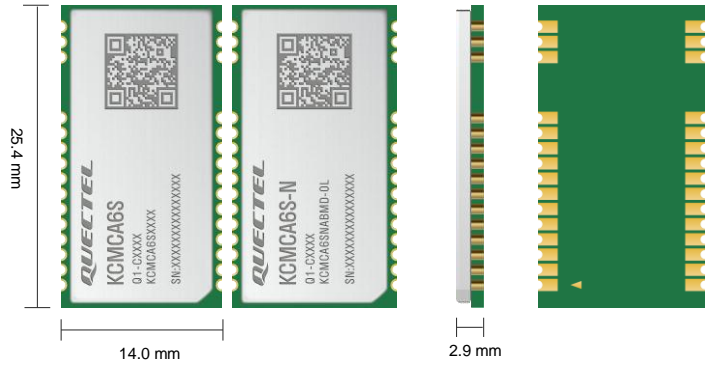




Quectel KCMCA6S & KCMCA6S-N

WM-Bus Module
LCC Package



KCMCA6S & KCMCA6S-N are Sub-GHz WM-Bus modules launched by Quectel, featuring an ARM Cortex-M33 processor with a frequency of up to 78 MHz, and support WM-Bus protocol and comply with the EN 13757 standard, and integrate 32 KB RAM and 256 KB flash.

KCMCA6S & KCMCA6S-N are in a LCC form factor with an ultra-compact dimensions of 25.4 mm × 14.0 mm × 2.9 mm, which optimize the size and cost for end-products and are compatible with diverse designs.

KCMCA6S & KCMCA6S-N support multiple WM-Bus communication modes (T, C, S*, R*, N*, F*) and deliver efficient transmission through a low-power architecture, dynamic multi-mode switching, and flexible frequency configuration, alongside integrated multi-layer security mechanisms. As a widely adopted standard in Europe for smart metering, they are ideal for smart water/electricity/gas/heat meters and AMI (Advanced Metering Infrastructure) systems, while also demonstrating strong potential in IoT connectivity scenarios.



Key Features

- ✓ Frequency bands: 868 MHz, 169 MHz*, 433 MHz*
- ✓ 32 KB SRAM and 256 KB flash
- ✓ 1 USART, 1 SWD and 11 GPIO interfaces by default, with additional support for EUSART, I2C and ADC interfaces through pin multiplexing
- ✓ Stable network connection, strong anti-interference, reliable data transmission
- ✓ Operating temperature range: -40 °C to +85 °C



WM-Bus



LCC Form Factor



Compact Size



Multiple Interfaces



Operating Temperature Range: -40 °C to +85 °C

Quectel KCMCA6S & KCMCA6S-N

WM-Bus		KCMCA6S & KCMCA6S-N			
Bluetooth Protocol	WM-Bus, Proprietary*, Sidewalk*				
Frequency Band	868 MHz, 169 MHz*, 433 MHz*				
Modulation Mode	2/4 FSK, OQPSK, DSSS, (G)MSK, OOK				
Encryption Mode	AES-128/ AES-256*/ ECC*/ SHA-1*/ SHA-2*				
Operating Mode	T, C, S*, R*, N*, F*				
Antenna	× 1 (pin antenna interface)				
Kernel	ARM Cortex-M33 (up to 78 MHz)				
RAM	32 KB				
Flash	256 KB				
Dimensions	25.4 mm × 14.0 mm × 2.9 mm				
Weight	Approx. 1.57 g				
Temperature Range					
Operating Temperature Range	-40 °C to +85 °C				
Storage Temperature Range	-45 °C to +95 °C				
Certifications					
Regulatory	Europe: CE*				
Interfaces					
Interfaces [Ⓞ]	USART/ SWD/ I2C , etc.				
Electrical Features					
Power Supply Voltage	VBAT: 1.71-3.8 V, Typ. 3.3 V				
WM-Bus Transmitting Performance					
Characteristics Value	Mode	Min.	Typ.	Max.	Unit
Center Frequency Offset (Meter to Other Device)	T1, T2	868.9	868.95	869	MHz
Center Frequency Offset (Other Device to Meter)	T2	868.278	868.3	868.322	MHz
FSK Modulation Frequency Offset (Meter to Other Device)	T1, T2	± 40	± 50	± 80	kHz
FSK Modulation Frequency Offset (Other Device to Meter)	T2	± 40	± 50	± 80	kHz
Chip Transmitting Rate (Meter to Other Device)	T1, T2	90	100	110	kcps
Chip Transmitting Rate (Other Device to Meter)	T2	-	32.768	-	kcps
Transmitting Rate (Meter to Other Device)	T1, T2	13	13.5	14	dBm
	T2	13	13.5	14	dBm
WM-Bus Receiving Performance (A frame size of 20 bytes)					
Frequency (MHz)	PER < %	Receiver Sensitivity (dBm)			
868.95	80	-105			
	20	-103			
	0	-94			

Ordering Code	SAW	Flash	Transmit Power	Operating Temperature Range	Frequency Band	Antenna	Development Board (Only for Debugging)
KCMCA6SABMD-0L	Supported	256 KB	≤ 14 dBm	-40 °C to +85 °C	868 MHz	Pin antenna interface	KCMCA6SABTB-0L
KCMCA6SNABMD-0L	-	256 KB	≤ 14 dBm	-40 °C to +85 °C	868 MHz	Pin antenna interface	KCMCA6SNABTB-0L

NOTE:

- 1.Ⓞ: See hardware design manual for details of the module interfaces.
- 2.*: Under development/Ongoing.