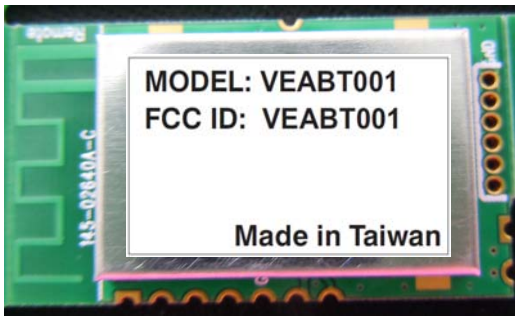
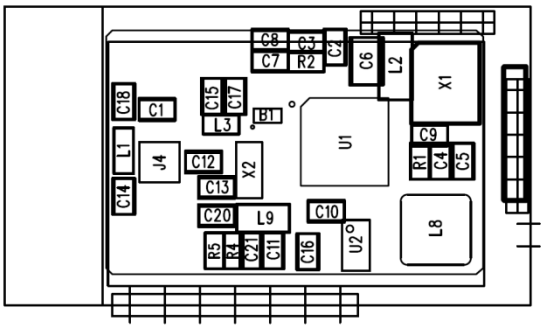
VEABT001 Module User's Manual



1. Features
   - On-chip low power microcontroller
   - 128KB of In-system programmable flash
   - 8KB SRAM
   - On board crystal and PCB Antenna
2. Application
   - Wireless data communication
3. Pin definition



Pin No.	Description	Pin Type	Functions
1	BLE_RX	Digital I/O	UART RX
2	BLE_TX	Digital I/O	UART TX
3	WAKE_UP	Output	Digital I/O
4	STATUS	Input	Digital I/O
5	GND	Digital I/O	GND
6	V+	Digital I/O	VDD
7	BLE_EN	Digital I/O	VDD Enable

4. How to use:
   - Before sending any UART Command, "WAKE_UP 1 → 0" must be done by external MCU.
   - If the CC2640 module is connected to Smart Devices (Android/ iOS), the pin STATUS will be logic "1" to inform external MCU.

- Beacon

1. Send Command 'D'/'P' to send live measured data from external through Beacon.
2. This is default mode, and VEABT002 module send data only. Cannot receive any data.

- BLE

1. Send Command 'M' to switch mode from Beacon to BLE.
2. After the mode switch successfully, the external MCU can receive data from Smart phone.

- Receiver

1. Send Command 'A'/'B' to switch mode from Beacon to Receiver.
2. Only specific Beacon data can be received, and the external MCU receives the data from UART

5. Protocol:
   - UART Baud Rate: 115200, 8, N, 1
   - Commands

   'D': Send Measured Data

   External MCU → VEABT002 Module

Starter	Len	OP	Battery	Data	CK	End
#		D				(0D 0A)h

   External MCU ← VEABT002 Module

Starter	Len	OP	Indi	CK	End
>		D			(0D 0A)h

   'P': Send Product Information

   External MCU → VEABT002 Module

Starter	Len	OP	FP	Prod.	S/N	Cal. Date	CK	End
#		P						(0D 0A)h

   External MCU ← VEABT002 Module

Starter	Len	OP	Indi	CK	End
>		P			(0D 0A)h

'M': Mode Switch

External MCU → VEABT002 Module

Starter	Len	OP	S/N	CK	End
#		M			(0D 0A)h

External MCU ← VEABT002 Module

Starter	Len	OP	Indi	CK	End
>		M			(0D 0A)h

'A': Scan Product Information

External MCU → VEABT001 Module

Starter	Len	OP	CK	End
'#'		'A'		(0D 0A)h

External MCU ← VEABT001 Module

Starter	Len	OP	SN	APO	Batt	RSSI	CK	End
'>'		'A'						(0D 0A)h

'B': Scan Measured Data

External MCU → VEABT001 Module

Starter	Len	OP	SN	CK	End
'#'		'B'			(0D 0A)h

External MCU ← VEABT001 Module

Starter	Len	OP	APO	Batt	Data	RSSI	CK	End
'>'		'B'						(0D 0A)h

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a

residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:
. Reorient or relocate the receiving antenna.
. Increase the separation between the equipment and receiver.
. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
. Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: To assure continued compliance, any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. (Example - use only shielded interface cables when connecting to computer or peripheral devices).

End Product Labeling

This transmitter module is authorized only for use in devices.

The final end product must be labeled in visible area with the following: "Contains FCC ID: VEABT001"
"

End Product Manual Information

The user manual for end users must include the following information in a prominent location "IMPORTANT NOTE: To comply with FCC RF exposure compliance requirements. This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions (1) This device may not cause harmful interference and (2) This device must accept any interference received, including interference that may cause undesired operation.

IMPORTANT NOTE: In the event that these conditions can not be met (for example certain laptop configurations or colocation with another transmitter), then the FCC authorization is no longer considered valid and the FCC ID can not be used on the final product. In these circumstances, the OEM integrator will be responsible for reevaluating the end product (including the transmitter) and obtaining a separate FCC authorization. This device is intended only for OEM integrators under the following conditions:
As long as a condition above is met, further transmitter test will not be required. However, the OEM integrator is still responsible for testing their end product for any additional compliance requirements required with this module installed (for example, digital device emissions, PC peripheral requirements, etc.). in conjunction with any other antenna or transmitter.