User manual

(for EC2811)

FCC ID: 2A6NFEC2811

IC: 28568-EC2811

This module should be installed in the host device according to the interface specification.

1) Japan Regulatory Information

This module is approved with the specific antenna on this module. Please ensure that your product can also bear a label with the following information. If the product is so small that it is not practicable to place the label, you can also place it in the instruction manual and package. The mark diameter shall be easily legible without using a device such as light microscopes.

It is recommended to include the following sentence in the user manual of your product:
This product installs a radio system which has been approved as a radio station in a low power data communication system based on the Radio Law.
EC2811 : 005-103185

2) Canada Regulatory Information

a) This device complies with Innovation, Science and Economic Development Canada's applicable license-exempt RSSs. Operation is subject to the following two conditions:
(1) this device may not cause interference, and
(2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:
1) l'appareil ne doit pas produire de brouillage;
2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

b) This product is certified as type of the portable device with Innovation, Science and Economic Development Canada Rules. To maintain compliance with RF Exposure requirement, please use within specification of this product.

Ce produit est certifié comme type de l'appareil portable avec Innovation, Sciences et Développement économique Canada Règles. Pour maintenir l'acquiescement avec exigence Exposition de RF, veuillez utiliser dans spécification de ce produit.

c) Please notify certified ID by either one of the following methods on your product.
Specifiez ID certifiée dans votre produit par une de méthode suivante.
-Contains Transmitter module IC : 28568-EC2811
-Contains IC : 28568-EC2811

d) Please indicate your product name at any location on the exterior of the host product or product packaging or product literature, which shall be available with the host product or online.

e) Please include the following statements in rectangle on the user manual of the host device of this module;

This device complies with Innovation, Science and Economic Development Canada license-exempt RSS standards. Operation is subject to the following two conditions: (1) This device may not cause interference. (2) This device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR Innovation, Sciences et Développement économique Canada applicables auxappareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : 1) l'appareil ne doit pas produire de brouillage; 2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

3) FCC Regulatory Information

a) 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.

b) Please notify certified ID by either one of the following methods on your product.
-Contains Transmitter Module FCC ID: 2A6NFEC2811
-Contains FCC ID: 2A6NFEC2811

c) CAUTION: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

d) This product is certified as type of the portable device with FCC Rules. To maintain compliance with RF Exposure requirement, please use within specification of this product.

e) The antenna used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

f) This module can change the output power depending on the circumstances by the application software which is developed by module installer. Any end user cannot change the output power.

g) This device complies with part 15 of the FCC Rules.
-Part 15 Subpart C

h) The modular transmitter is only FCC authorized for the specific rule parts (Part 15 Subpart C) listed on the grant, and the host product manufacturer is responsible for compliance to any other FCC rules that apply to the host not covered by the modular transmitter grant of certification. The final host product still requires Part 15 Subpart B compliance testing with the modular transmitter installed.

i) Co-location of this module with other transmitters that operate simultaneously are required to be evaluated using the FCC multi transmitter procedures. When installing this module to your final devices, please make sure to carry out all the necessary evaluations according to the applicable guidelines like follows:
-for RF exposure: KDB 447498, KDB 996369 and any other relevant guidelines
-for EMC: KDB 996369 D04 and any other relevant guidelines

j) When you install this module to your final devices, please ensure that your final composite product complies with the applicable FCC rules in reference to a guidance in KDB 996369.

k) Antenna List
This module is approved along with the following antenna.
You cannot use any antennas other than the listed one because it deviates from the accredited conditions.

No.1	Manufacturer	TAIYO YUDEN
	Part No.	AH212M245001-T
	Antenna Type	Monopole
	Maximum Antenna Gain	+0.9dBi
No.2	Manufacturer	KAGA FEI
	Part No.	N/A (Printed on PCB) Dimensions 9.0mm x 2.7mm
	Antenna Type	Monopole
	Maximum Antenna Gain	-2.6dBi

l) Please include the following statements in rectangle on the user manual of the host device of this module;

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.

FCC CAUTION: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

The antenna used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

This product is certified as type of the portable device with FCC Rules. To maintain compliance with RF Exposure requirement, please use within specification of this product.

4) CE Regulatory Information

a) When your end product installs this module, it is required to proceed additional certification processes before placing on the market in EU member states to make your products fully comply with relative EU standards.

b) KAGA FEI can provide you the test reports of conducted measurement portion for the radio module. You can utilize the test reports for the certification processes of your end product as it requires radio testing.

Control No. (1/2)	Control name Pin Layout

Pin Descriptions

Pin	Pin name	Pin function	Description
1	DCC	Power	DC/DC converter output pin (built-in LC for DC/DC).
2	DEC4	Power	1V3 regulator supply decoupling. Input from DC/DC converter. Output from 1.3 V LDO.
3	GND	Ground	Ground pin. (0 V)
4	VCC_NRF	Power	Power supply pin.
5	GND	Ground	Ground pin. (0 V)
6	P0.04 AIN2	Digital I/O Analog input	General purpose I/O pin. SAADC/COMP input.
7	P0.05 AIN3	Digital I/O Analog input	General purpose I/O pin. SAADC/COMP input.
8	P0.06	Digital I/O	General purpose I/O pin.
9	P0.07	Digital I/O	General purpose I/O pin.
10	P0.08	Digital I/O	General purpose I/O pin.
11	P0.09	Digital I/O	General purpose I/O pin.
12	P0.10	Digital I/O	General purpose I/O pin.
13	GND	Ground	Ground pin. (0 V)
14	SWDIO	Digital I/O	Serial Wire Debug I/O for debug and programming
15	SWDCLK	Digital input	Serial Wire Debug clock input for debug and programming
16	P0.13	Digital I/O	General purpose I/O pin.
17	P0.14	Digital I/O	General purpose I/O pin.
18	P0.17	Digital I/O	General purpose I/O pin
19	P0.18	Digital I/O	General purpose I/O pin
20	P0.21 RESET	Digital I/O	General purpose I/O pin Configurable as system RESET pin. (Factory default : General purpose I/O pin)
21	GND	Ground	Ground pin. (0 V)
22	OUT_MOD	RF In/Out	RF I/O pin. It should be connected to Pin 23 OUT_ANT for normal operation.
23	OUT_ANT	Antenna In/Out	Internal antenna. It should be connected to Pin 22 OUT_MOD for normal operation.
24	P0.22	Digital I/O	General purpose I/O pin.
25	P0.23	Digital I/O	General purpose I/O pin.
26	P0.24	Digital I/O	General purpose I/O pin.
27	P0.25	Digital I/O	General purpose I/O pin.
28	P0.26	Digital I/O	General purpose I/O pin.
29	P0.27	Digital I/O	General purpose I/O pin.
30	P0.28 AIN4	Digital I/O Analog input	General purpose I/O pin. SAADC/COMP input.
31	P0.29 AIN5	Digital I/O Analog input	General purpose I/O pin. SAADC/COMP input.
32	P0.30 AIN6	Digital I/O Analog input	General purpose I/O pin. SAADC/COMP input.
33	P0.31 AIN7	Digital I/O Analog input	General purpose I/O pin. SAADC/COMP input.
34	P0.02 AIN0	Digital I/O Analog input	General purpose I/O pin. SAADC/COMP input.
35	P0.03 AIN1	Digital I/O Analog input	General purpose I/O pin. SAADC/COMP input.

Control No. (2/2)	Control name Pin Layout

Pin	Pin name	Pin function	Description
36	P0.11	Digital I/O	General purpose I/O pin.
37	P0.12	Digital I/O	General purpose I/O pin.
38	P0.15	Digital I/O	General purpose I/O pin.
39	P0.16	Digital I/O	General purpose I/O pin.
40	P0.19	Digital I/O	General purpose I/O pin.
41	P0.20	Digital I/O	General purpose I/O pin.
42 to 47	GND	Ground	Ground pin. (0 V)