

ZEAL-S03/ZEAL-C03

User's Manual

Introduction

This document has been described how to use the ZEAL. ZEAL is a Bluetooth module. This module is connected to the UART. This module is operated with a simple command.

Operating state

ZEAL has several operating state. State transition will use the command.

- Command state

ZEAL can execute the command. The input data are all recognized as a command.

- Scan state

ZEAL is a state that is waiting for a connection as a Bluetooth slave.

- Online state

ZEAL has been connected with the pair device and Bluetooth. ZEAL can perform data communication with connection device.

- Escape state

ZEAL is in connection, and command input is possible.

- Scan escape state

ZEAL is in scanning, and command input is possible.

Boot mode

ZEAL has four boot modes. These will be switched by the mode pin.

	MODE0	MODE1
Normal boot mode	HIGH	HIGH
Pre-settings value boot mode	LOW	HIGH
Automatic boot mode	HIGH	LOW
Manufacturer test boot mode	LOW	LOW

- Normal mode

This mode is start in command state with the default settings.

*9600bps, 8bit, non parity, 1stopbit

- Pre-setting value boot mode

This mode is start in command state with the pre-settings.

- Automatic boot mode

This mode is start in the master or slave with the pre-setting.

- Manufacturer test boot mode

This mode is used when the manufacturer test.

COMMAND

ZEAL will operate in the original BT COMMAND. Command begins with BT, and followed by a command character, and termination input the CR. (CR=0x0D)

List of commands

Command	Description
A	Scan start
C	Connect
D	Disconnect
I	Inquiry start
LT	Address setting of the link partner
LO	Automatic mode setting
LB	Baud rate setting
M	Show BD address
Y	Initialization
Z	Show firmware version

Escape command

This is a special command to be ready for input command temporarily.
Escape command is a continuous input three times '@' .

Result Code

This is the string to notify the results of executing the command. Termination is CR + LF is output. (LF=0x0A)

List of result codes

Result Code	Description
ACKN	Receipt of the command
CONN	Connected
DISC	Disconnected
TERM	Terminate of the command
E000	Unknown Error
E100	Undefined command Error
E101	Parameter Error
E200	State cannot execute this command
E300	Pair could not be found
E301	Failed to authenticate
E400	Incorrect setting value

How to use

The connection process

[ZEAL will be used in Bluetooth master]

Exp : BD Address of the connected devices is 00097E00FFFF.

1. To set the BD address of the device to connect to ZEAL

BTLT00097E00FFFF[CR] <- Command
ACKN[CRLF] <- Response

2. The beginning of a connection

BTC [CR] <- Command
ACKN[CRLF] <- Response
CONN[CRLF] <- Response

*Can send and receive data

[ZEAL will be used in Bluetooth slave]

1. The beginning of a scan

BTA[CR] <- Command
ACKN[CRLF] <- Response

3. When it is connected from Bluetooth master device.

CONN[CRLF] <- Response

*Can send and receive data

Disconnection process

1. The beginning of a disconnect

@@@BTD[CR] <- Command
ACKN[CRLF] <- Response
DISC[CRLF] <- Response

Federal Communication Commission Interference Statement

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.

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: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter except in accordance with FCC multi-transmitter policies.

Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

This device is intended only for OEM integrators under the following conditions:

- 1) The antenna must be installed such that 20 cm is maintained between the antenna and users, and
- 2) The transmitter module may not be co-located with any other transmitter or antenna except in accordance with FCC multi-transmitter policies.

As long as 2 conditions above are 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

IMPORTANT NOTE: In the event that these conditions can not be met (for example certain laptop configurations or co-location 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 re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.

End Product Labeling

This transmitter module is authorized only for use in device where the antenna may be installed such that 20 cm may be maintained between the antenna and users. The final end product must be labeled in a visible area with the following: "Contains FCC ID: E90-002ZEAL03" . The grantee's FCC ID can be used only when all FCC compliance requirements are met.

Manual Information To the End User

The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user' s manual of the end product which integrates this module.

The end user manual shall include all required regulatory information/warning as show in this manual.

Industry Canada statement:

This device complies with RSS-247 of the Industry Canada 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.

Ce dispositif est conforme à la norme CNR-247 d'Industrie Canada applicable aux appareils radio exempts de licence. Son fonctionnement est sujet aux deux conditions suivantes: (1) le dispositif ne doit pas produire de brouillage préjudiciable, et (2) ce dispositif doit accepter tout brouillage reçu, y compris un brouillage susceptible de provoquer un fonctionnement indésirable.

Radiation Exposure Statement:

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

Déclaration d'exposition aux radiations:

Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20 cm de distance entre la source de rayonnement et votre corps.

This device is intended only for OEM integrators under the following conditions: (For module device use)

- 1) The antenna must be installed such that 20 cm is maintained between the antenna and users, and
- 2) The transmitter module may not be co-located with any other transmitter or antenna.

As long as **2** conditions above are 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.

Cet appareil est conçu uniquement pour les intégrateurs OEM dans les conditions suivantes: (Pour utilisation de dispositif module)

- 1) L'antenne doit être installée de telle sorte qu'une distance de 20 cm est respectée entre l'antenne et les utilisateurs, et
- 2) Le module émetteur peut ne pas être coïmplanté avec un autre émetteur ou antenne.

Tant que les **2** conditions ci-dessus sont remplies, des essais supplémentaires sur l'émetteur ne seront pas nécessaires. Toutefois, l'intégrateur OEM est toujours responsable des essais sur son produit final pour toutes exigences de conformité supplémentaires requis pour ce module installé.

IMPORTANT NOTE:

In the event that these conditions can not be met (for example certain laptop configurations or co-location with another transmitter), then the Canada authorization is no longer considered valid and the IC ID can not be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate Canada authorization.

NOTE IMPORTANTE:

Dans le cas où ces conditions ne peuvent être satisfaites (par exemple pour certaines configurations d'ordinateur portable ou de certaines co-localisation avec un autre émetteur), l'autorisation du Canada n'est plus considéré comme valide et l'ID IC ne peut pas être utilisé sur le produit final. Dans ces circonstances, l'intégrateur OEM sera chargé de réévaluer le produit final (y compris l'émetteur) et l'obtention d'une autorisation distincte au Canada.

End Product Labeling

This transmitter module is authorized only for use in device where the antenna may be installed such that 20 cm may be maintained between the antenna and users. The final end product must be labeled in a visible area with the following: "Contains IC: 10171A-002ZEAL03" .

Plaque signalétique du produit final

Ce module émetteur est autorisé uniquement pour une utilisation dans un dispositif où l'antenne peut être installée de telle sorte qu'une distance de 20cm peut être maintenue entre l'antenne et les utilisateurs. Le produit final doit être étiqueté dans un endroit visible avec l'inscription suivante: "Contient des IC: 10171A-002ZEAL03".

Manual Information To the End User

The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user' s manual of the end product which integrates this module.

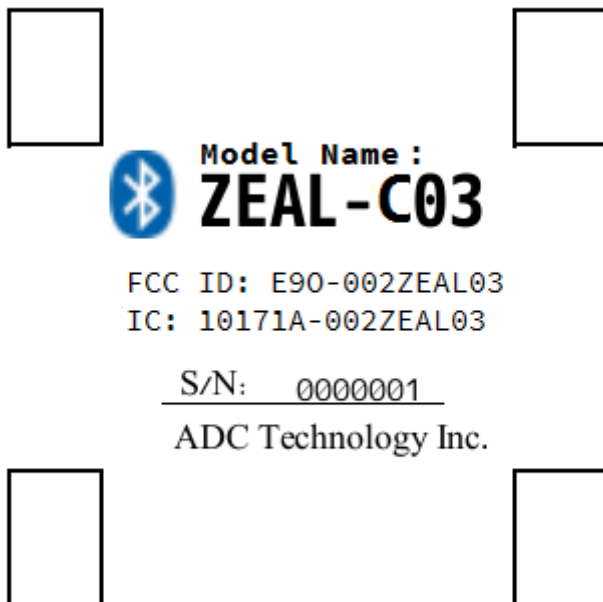
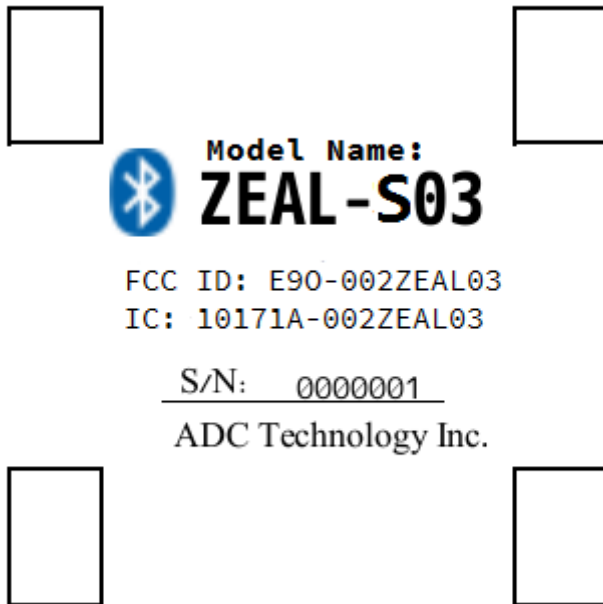
The end user manual shall include all required regulatory information/warning as show in this manual.

Manuel d'information à l'utilisateur final

L'intégrateur OEM doit être conscient de ne pas fournir des informations à l'utilisateur final quant à la façon d'installer ou de supprimer ce module RF dans le manuel de l'utilisateur du produit final qui intègre ce module.

Le manuel de l'utilisateur final doit inclure toutes les informations réglementaires requises et avertissements comme indiqué dans ce manuel.

Label Drawing



Power setting and switching are made in the manufacturing factory at the point of production. Once produced and shipped, neither the integrators/manufacturers of end-products nor the end-users can change the power setting.