BPORT-232
Specification

CONFIDENTEAL INFORMATION

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1. General

1.1   Overview

BPORT-232 is a terminal device for wireless serial communication using Bluetooth technology that is an international standard of short range wireless communications. BPORT-232 can communicate with other Bluetooth devices; user may connect other Bluetooth devices that support the Serial Port Profile.

The working distance of BPORT-232 with default antenna is 100m

BPORT-232 has a compact design, which allows it to be placed conveniently into various devices or equipment. Its detachable antenna has the ability to optimize the quality and distance of wireless communications.

BPORT-232 supports FHSS (Frequency Hopping Spread Spectrum), which is a technique, native to Bluetooth that allows the BPORT-232 minimize radio interference while decreasing the likelihood of over-air hijacking. BPORT-232 also supports authentication and Bluetooth data encryption.

BPORT-232 can be configured and controlled by a set of AT commands. Users can easily configure BPORT-232 on a terminal program, such as HyperTerminal, and configure for wireless communication without modifying user's existing serial communication program. User friendly BPORT-232 Program can also be used for easy setup on Microsoft Windows.

1.2   Application

■RS232 Cable Replacement

■Truck/Bus Monitoring System

■Wireless POS System

■Wireless Machine(Healthcare/Industrial) Monitoring

■Wireless Factory Monitoring

■PLC Programming

■Wireless Printing

■Wireless Logistics

1.3 Features

	BPORT-232	
Serial Interface	Serial speed up to 921.6kbps	
	CTS/RTS flow control	
Bluetooth Spec.	Bluetooth 5	
	2402MHz ~ 2480MHz	
	Class1	Class2
	MAX 18 dBm	MAX 4 dBm
Configuration	BPORT Windows Program, AT Command	
Firmware Update	BPORT Windows Program	
Diagnostic LED	Power	
	Standby / Connect	
	Serial RX / TX	
Operating Temperature	-30℃ to 85℃	
Storage temperature	-40℃ to 85℃	
Power	Supply voltage: 5V DC Power consumption: 300mA@5VD Max	
	Standard AC plug DC adapter	
	USB Power Cable	
	D-SUB pin 9	

2. Getting Started

This chapter describes how to set up theBPORT-232.

Following items are required to get started.
- DCPower Adapter
- USB Power Cable
- PC with RS232 Serial Port
- PC Terminal Emulation Program

2.1 하드웨어연결 Connecting the Hardware

This section describes how to connect the BPORT-232to the serial device.
- Connect a power source to theBPORT-232.
- Connect the BPORT-232.to a serial device

2.1.1 Connection Power to BPORT-232

BPORT-232can be powered from either external DC power adaptor. To power the BPORT-232from the external DC power adaptor or external power source, connect the power jack to the power connector of the BPORT-232 using the DC power
adapter, USB power cable or DC power cable that is included in the package. If power is properly supplied, the [Mode] lamp will display a green color.

2.1.1 Connecting Device to BPORT-232

3. AT명령어

BPORT-232

ATcommandProtocol

Version0.1.0

1. Definitionofbasics

1.1 sificationofSerialCommunicationmode

1.1.1   AT-COMMANDmode

- There is a situation where an order can be given to change the device settings of the BPORT-232 or make the BPORT-232   perform a specific operation in the HOST, which is called the ATCOMMANDmode.

    The BPORT-232   always maintains the AT-COMMAND mode if connection is not made withRemote device.

    Most of this document is to describe commands available in the AT-COMMAND mode.

1.1.2   BYPASSmode

- The BPORT-232   is capable of transmitting to the Remote device DATA generated in the HOST by being connected with Remote device. This state is called the BYPASS mode.

In the BYPASS mode, it is not possible to change the settings of the BPORT-232   device or perform a specific operation.

1.3 ClassificationofProtocolTypeandformat

1.3.1   REQUESTpacket(REQ)

AT+CSCAN

index	1	2	3	4	5	6	7	8	9
format	Commandstr ing								ETX
Command	A	T	+	C	S	C	A	N	<CR>
ASCII	0x41	0x54	0x2B	0x43	0x53	0x43	0x41	0x4E	0x0D

AT+SETNAME=TEST

index	1	2	3	4	5	6	7	8	9
format	Commandstring								
Command	A	T	+	S	E	T	N	A	M
ASCII	0x41	0x54	0x2B	0x53	0x43	0x43	0x4E	0x41	0x4D

Index	10	11	12	13	14	15	16
format	Commandstring						ETX
Command	E	=	T	E	S	T	\<CR\>
ASCII	0x45	0x3D	0x54	0x45	0x53	0x54	0x0D

1.3.2   RESPONSEpacket(RES):

index	1	2	3	4
format	Commandstring			ETX
Command	+	O	K	\<CR\>
ASCII	0x2B	0x4F	0x4B	0x0D

1.3.3   NOTIFY packet (NOTI)

index	1	2	3	4	5	6	7	8	9
format	Commandstring								
Command	+	C	O	N	N	E	C	T	E
ASCII	0x2B	0x43	0x4F	0x4E	0x4E	0x45	0x43	0x54	0x45

index	10	11	12	13	14	15	16	17	18
format	Commandstring								
Command	D	=	B	T	,	5	C	F	E
ASCII	0x44	0x3D	0x42	0x54	0x2C	0x35	0x43	0x46	0x45

index	19	20	21	22	23	24	25	26	27
format	Commandstring								
Command	8	6	A	0	0	0	0	1	\<CR\>
ASCII	0x38	0x36	0x41	0x30	0x30	0x30	0x30	0x31	0x0D

2. REQ Protocols

ProtocolSummary

Type	Command	Include Paramete	Comment
Information	AT	X	Check UART Port
	AT+INIT	O	Setting boot mode
	AT+INFO	X	Setting Device & Request Information
Control	AT+CSCAN	X	BTScan
	AT+CPAIR	X	BTPair
	AT+CSTOP	X	Stop Scan BT
	AT+CCONNECT	X	BTConnect
	AT+CCONMAC	O	Connection of BT addressing device
	AT+BSCAN	X	Start Scan Smart / Beacon
	AT+BPERI	X	Start Scan Smart
	AT+BBEACON	X	Start Scan Beacon
	AT+BSTOP	X	Stop Scan Smart / Beacon
	AT+BCONNECT	X	SmartConnect
	AT+BCONMAC	O	Connection of Smart addressing device
	AT+DISCONNECT	X	BluetoothDISCONNECT
	AT+CBEACON	O	CustomBeaconData Setting
	AT+IBEACON	O	iBeaconData Setting
	AT+DATA	O	Connection status data transfer
	ATZ	X	Power Reset
Setting	AT+SETAUTOCON	O	Setting BT automatic connection function
	AT+SETPAIR	O	Setting BT search standby function
	AT+SETNAME	O	Setting BTdevice name
	AT+SETADVPR	O	Setting Smart/BeaconAdverttime
	AT+SETADVTO	O	Setting SmartAdverttime
	AT+SETADVPWR	O	Setting Smart/BeaconRF power
	AT+SETADVNAME	O	Setting SmartAdvertdevice name
	AT+PDLCLEAR	X	Delete connection information
	ATF	X	Factory reset

FCC Information to User

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 con-nected.
• Consult the dealer or an experienced radio/TV technician for help.

Caution

Modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC Compliance Statement

FCC ID : 2APB6-BPORT-232

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:
FCC RF Radiation Exposure Statement:
This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.