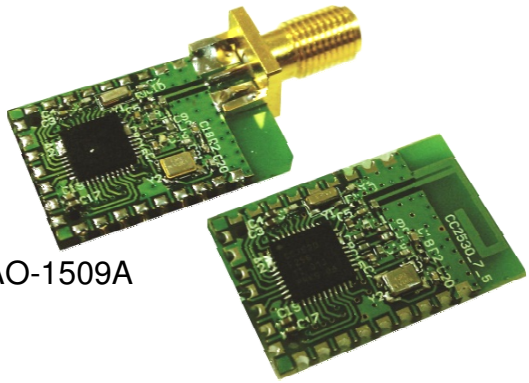
AO-1509/1509A　ZigBee for Arduino 操作說明



AO-1509A

AO-1509

Features

- Reliable wireless transceiver module.
- Compatible with Peer to Peer, Star, Tree, or Mesh network configurations.
- AO-1509 with on board PCB ANT with 150M range(LOS).
- AO-1509A with external ANT.

Applications

- Wireless sensor network (WSN).
- Arduino / MCU Wireless network.
- RF remote control.
- 2.4 GHz IEEE 802.15.4 network.
- Home and building automation.
- Industrial control and surveillance.

Introduction

AO-1509 ZigBee for Arduino Transceiver Module, which uses the latest TI CC2530 ZigBee chip, is designed for Arduino and other MCU's wireless data transmission applications.

The AO-1509's firmware has been modified in order to minimize MCU's requirement both hardware and firmware. User's MCU use the simple ASCII string thought the UART port to config the AO-1509 working mode in a ZigBee network , NODE ID and PAN ID.

Application note

1. 命令全部都是大寫的 ASCII 碼

2. 預設 9600bps, 8,n,1

3. 透明傳輸, 封包每次最大 60 bye.

4. 設定命令一共四組, 每組 4 個 byte, 整串一共 16 byte, 代表意義如下:

   ///x NNNN PPPP ChPo
   ///x → ///: Start command,

   x = R → 定義成 ROUTER,

   x = C → 定義成 Coordinator

   NNNN: Node ID,

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Router 範圍 0001~FFF0 (16 進制編碼)

Coordinator: 固定爲 0000 (16 進制編碼)

PPPP: PAN ID, 範圍 0000 ~ FFF0 (16 進制編碼)

ChPo: 頻道 與 功率 設定

Ch 範圍 11~26 (10 進制編碼)

Po 範圍 0~16 (10 進制編碼)

設定值	輸出功率	設定值	輸出功率	設定值	輸出功率	設定值	輸出功率
00	4.5dBm	04	-1.5 dBm	08	-8 dBm	12	-16 dBm
01	2.5 dBm	05	-3 dBm	09	-10 dBm	13	-18 dBm
02	1 dBm	06	-4 dBm	10	-12 dBm	14	-20 dBm
03	-0.5 dBm	07	-6 dBm	11	-14 dBm	15	-22 dBm

設定範例:

///R000100202600 → Router, NID=0001, PID=0020, 26 號頻道, 輸出功率 4.5dBm.

///C000000202600 → Coordinator, NID=0000, PID=0020, 26 號頻道, 輸出功率 4.5dBm.

5. 查詢命令 ///?

HOST 發送 ///? 詢問 AO-1509 狀態

AO-1509 回應 ///xNNNNPPPPChPo, 解讀方式同上.

6. 輸入資料, 未指定接收的 NID, 即預設爲廣播

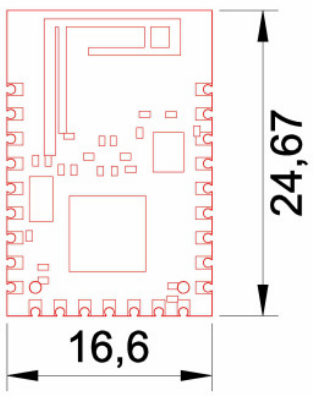
7. 指定接收的 NID

格式 :NNNNddddddd(最多 60 byte)

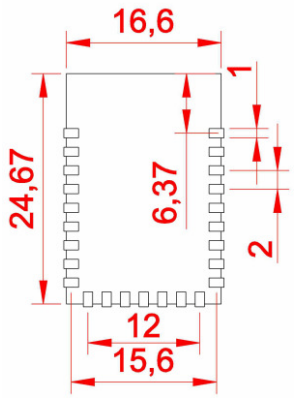
範例 :0243hallo_world!

指定 NODE ID=0x0243 的 Route 接收資料串 hallo_world!

Dimension: (unit=mm)



Soldering Pad: (unit=mm)



Pin Assignment

1	GND	6	P17	11	GND	16	P02	21	P04
2	GND	7	P16	12	P13	17	P10	22	P01
3	REST	8	P15	13	P12	18	P07	23	P00
4	P22	9	P14	14	P11	19	P06	24	VDD
5	P21	10	VDD	15	P03	20	P05	25	GND

Application Circuit

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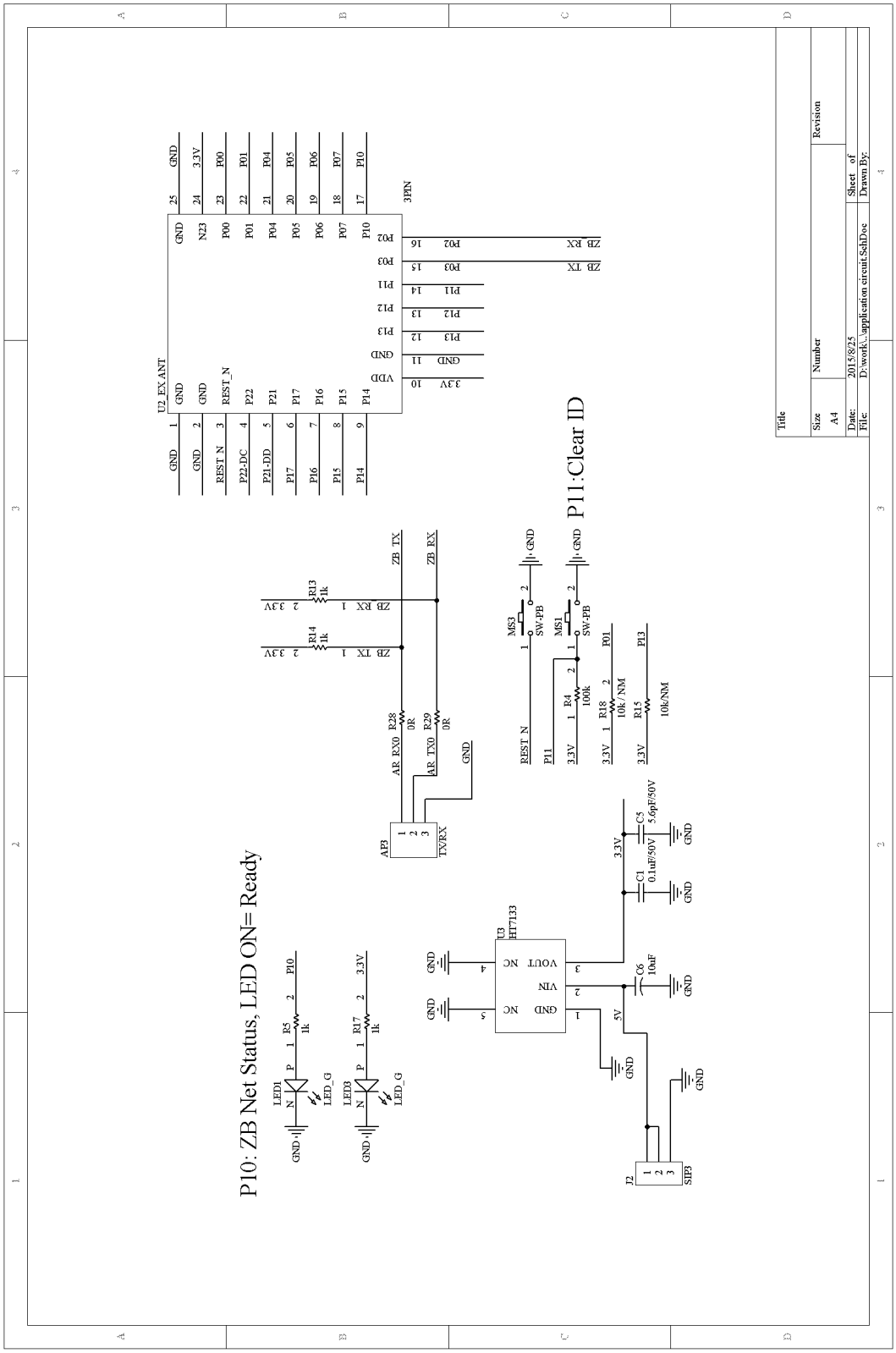

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