

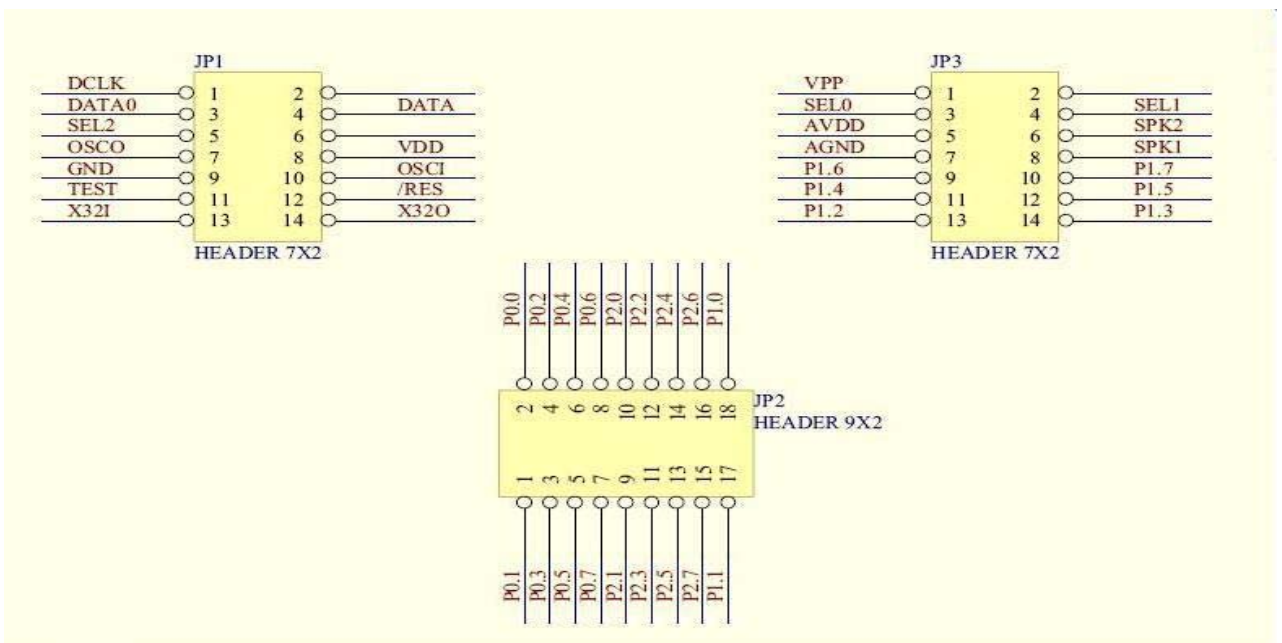


How To Use ZT301 MCU Module

Product Picture:



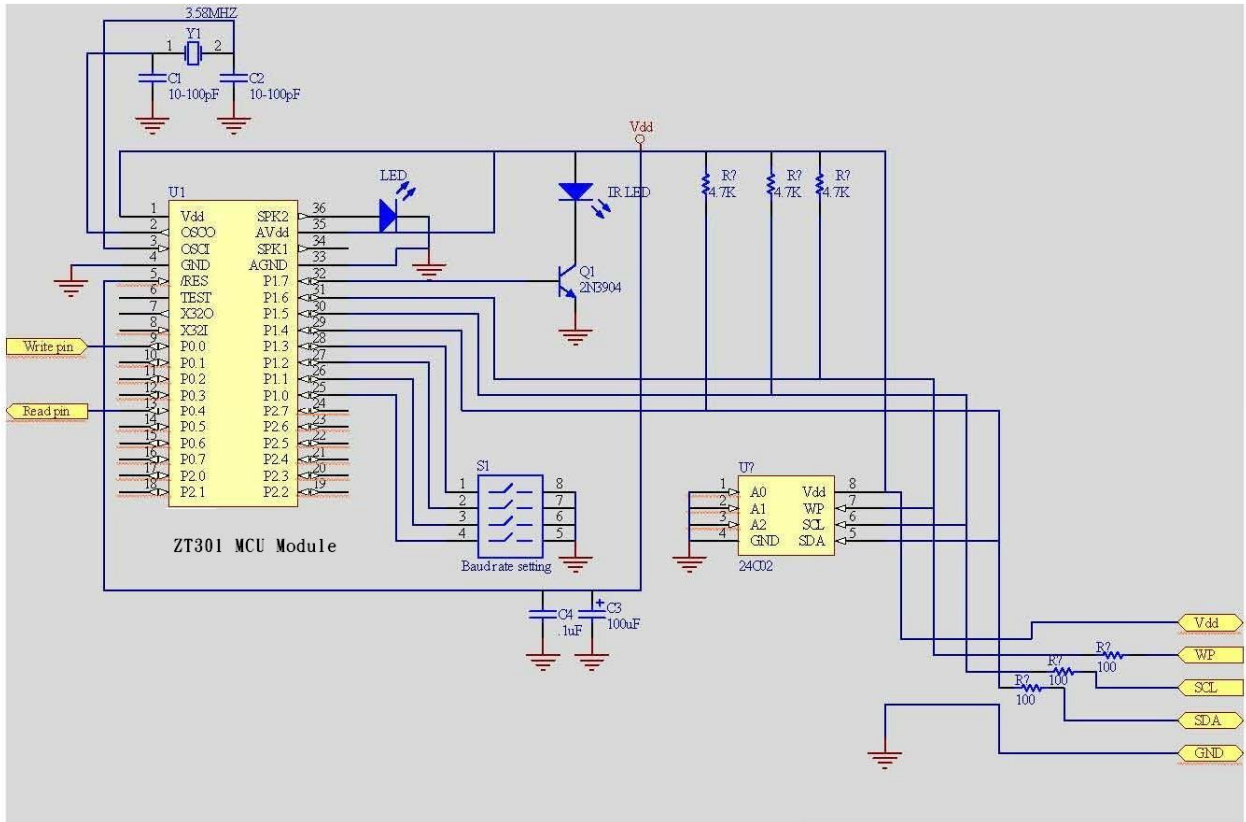
Pin Assignment:



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ZT301 MCU Module Application circuit



Note:

- (1) Write pin & Read pin & GND for other MCU send command. (command please reference other pages description)
- (2) Vdd can be +3V(2pcs battery) or 5V+
- (3) WP & SCL & SDA only for other MCU under I2L protocol to directly write or read data from EEPROM24C02(IC).
- (4) EEPROM24C02 can be stored IR code data by Read/Write pin or directly stored by other MCU.
- (5) Baudrate setting had better all open to be 9600BPS (each bit 100us)
- (6) Q1 3904 or 8055
- (7) ※ZT301 MCU Module SEL0 connect with VDD,SEL1 connect with GND,SEL2 connect with VDD.



Key functions:

Device Key: (※Device Key No sending any IR signal)

Command Code	Device Name	Code Number
1	TV1	254
2	VCR1	254
3	CBL1	198
4	AUX1	249
5	TV2	113
6	VCR2	254
7	CBL2	198
8	AUX2	249

Key functions: (for TV and CBL)

Command Code	TV(CBL)	Function Description
9	POWER	POWER
10	CH+	Channel Up
11	CH-	Channel Down
12	0/10	0 or 10
13	1	1
14	2	2
15	3	3
16	4	4
17	5	5
18	6	6
19	7	7
20	8	8
21	9	9
22	A_V	Audio Video Exchange
23	MUTE	MUTE
24	VOL+	VOL+
25	VOL-	VOL-
26	DISPLAY	DISPLAY
27	SELECT	SELECT
28	ENTER	ENTER
29	+	Increase
30	-	Decrease
31	LCR	Last Channel Recall









32	CATV	CATV
33	MENU	MENU
34	SLEEP	SLEEP
35	TIME	TIME
36	MTS	Multi Language change
37	11/1-	11 or 1-
38	12/2-	12 or 2-
39	AUDIO	Special function
40	PA	Special function
41	PGM	Special function
42	MODE	Special function
43	INPUT	Special function
44	TXT	Special function
45	SAT	Special function
56		SETUP key

Key function for VCR/AUX:

Command Code	VCR(AUX)	Function Description
9	POWER	POWER
10	CH+	Channel Up
11	CH-	Channel Down
12	0/10	0 or 10
13	1	1
14	2	2
15	3	3
16	4	4
17	5	5
18	6	6
19	7	7
20	8	8
21	9	9
22	A_V	
23	MUTE	
24	VOL+	
25	VOL-	
26	DISPLAY	
27	SELECT/MENU	



28	ENTER/SURE	ENTER or SURE
29	+/UP	Increase or UP
30	-/DN	Decrease or DOWN
31	LCR/LEFT	LCR or LEFT
32	CATV/RIGHT	CATV or RIGHT
33	MENU/MODE	MENU or MODE
34		Fast Forward
35	TIME/CLEAR	TIME or CLEAR
36	MTS/AUDIO	MTS or AUDIO
37	11/1-	11 or 1-
38	12/2-	12 or 2-
39		Backward
40		RECORD
41	PGM/TITLE	PGM or TITLE
42		PLAY
43		PAUSE
44		STOP
45	SAT/SUB	SAT or SUBTITLE
56		SETUP



Command Code	SETUP functions	Function
61 nnn(2 bytes)	SETUP TV1 nnn	setting TV1
62 nnn(2 bytes)	SETUP VCR1 nnn	setting VCR1
63 nnn(2 bytes)	SETUP CBL1 nnn	setting CBL1
64 nnn(2 bytes)	SETUP AUX1 nnn	setting AUX1
65 nnn(2 bytes)	SETUP TV2 nnn	setting TV2
66 nnn(2 bytes)	SETUP VCR2 nnn	setting VCR2
67 nnn(2 bytes)	SETUP CBL2 nnn	setting CBL2
68 nnn(2 bytes)	SETUP AUX2 nnn	setting AUX2
71(1 byte)	AUTOSCAN TV1	AUTOSCAN TV1
72(1 byte)	AUTOSCAN VCR1	AUTOSCAN VCR1
73(1 byte)	AUTOSCAN CBL1	AUTOSCAN CBL1
74(1 byte)	AUTOSCAN AUX1	AUTOSCAN AUX1
75(1 byte)	AUTOSCAN TV2	AUTOSCAN TV2
76(1 byte)	AUTOSCAN VCR2	AUTOSCAN VCR2
77(1 byte)	AUTOSCAN CBL2	AUTOSCAN CBL2
78(1 byte)	AUTOSCAN AUX2	AUTOSCAN AUX2
90(1 byte)	STOP AUTOSCAN	After STOP, receive 1 byte code number from ZT301.
56 nn XX....(62 bytes)	Send new IR code data	(1) nn Must be 1 or 2 or 3 or 4(1=TV1 2 =VCR1 3=CBL1 4=AUX1 (2) XX... must have Total 60 bytes IR code data (3) Every byte has 06(ACK) to do handshaking

Note:

- (1) All above Command Code are decimal format
- (2) For example send 71 (decimal 1 byte) from your MCU by Read/Write pin,ZT301 MCU Module will do autoscan TV1 process.
- (3) For example send 66 123 (decimal 2 bytes) from your MCU by Read/Write pin,ZT301 MCU Module will set VCR2 at code number as 123.
- (4) For example send 9 (decimal 1 byte) from your MCU by Read/Write pin,ZT301 MCU Module will send POWER key IR code.
- (5) All action must send first byte(00H) to wake up CPU and receive 06H(ACK) from CPU, then you can begin to send again.

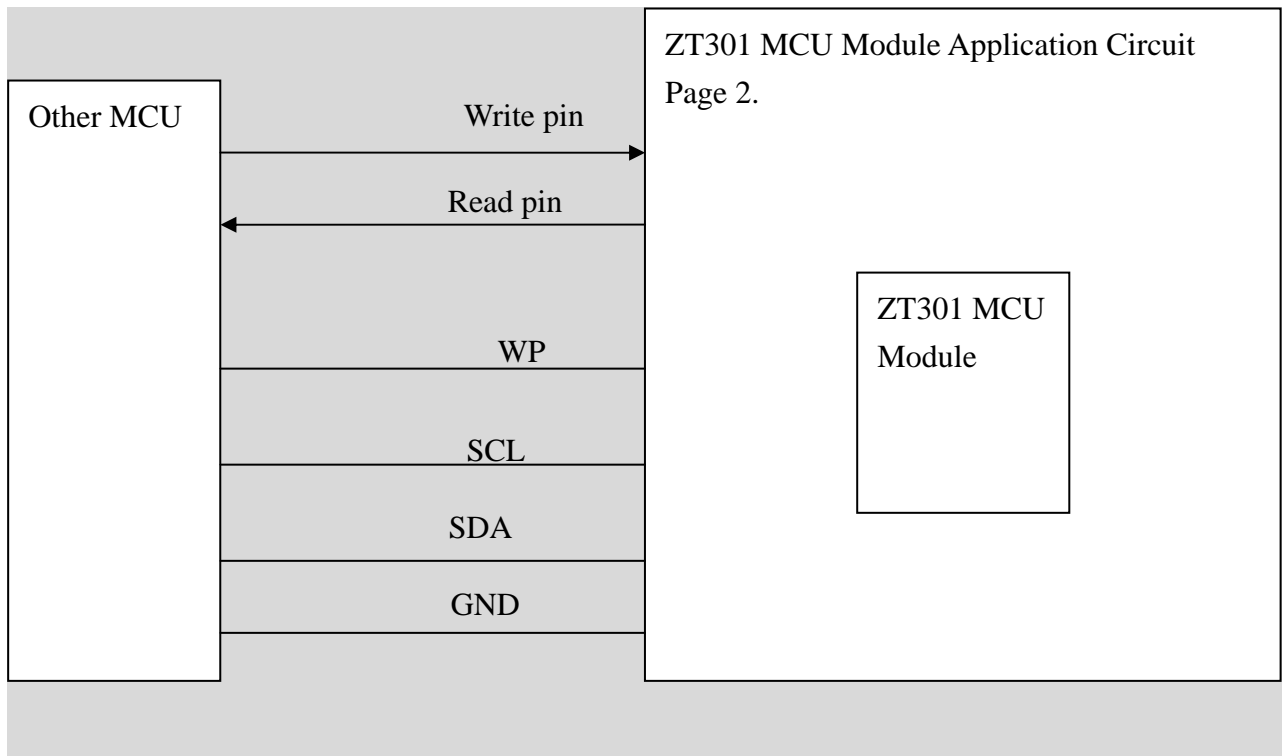
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- (6) When sending IR code data, nn mean device number 1=TV 2=VCR 3=CBL 4=AUX.
- (7) When sending IR code data 60 bytes,each byte CPU will send back 06(ACK) for hand shaking.
- (8) To stop AUTOSCAN, you must send 90(decimal format) to stop, then you will receive 1 byte of code number from ZT301.



Hardware connection between other MCU with ZT301 MCU Module

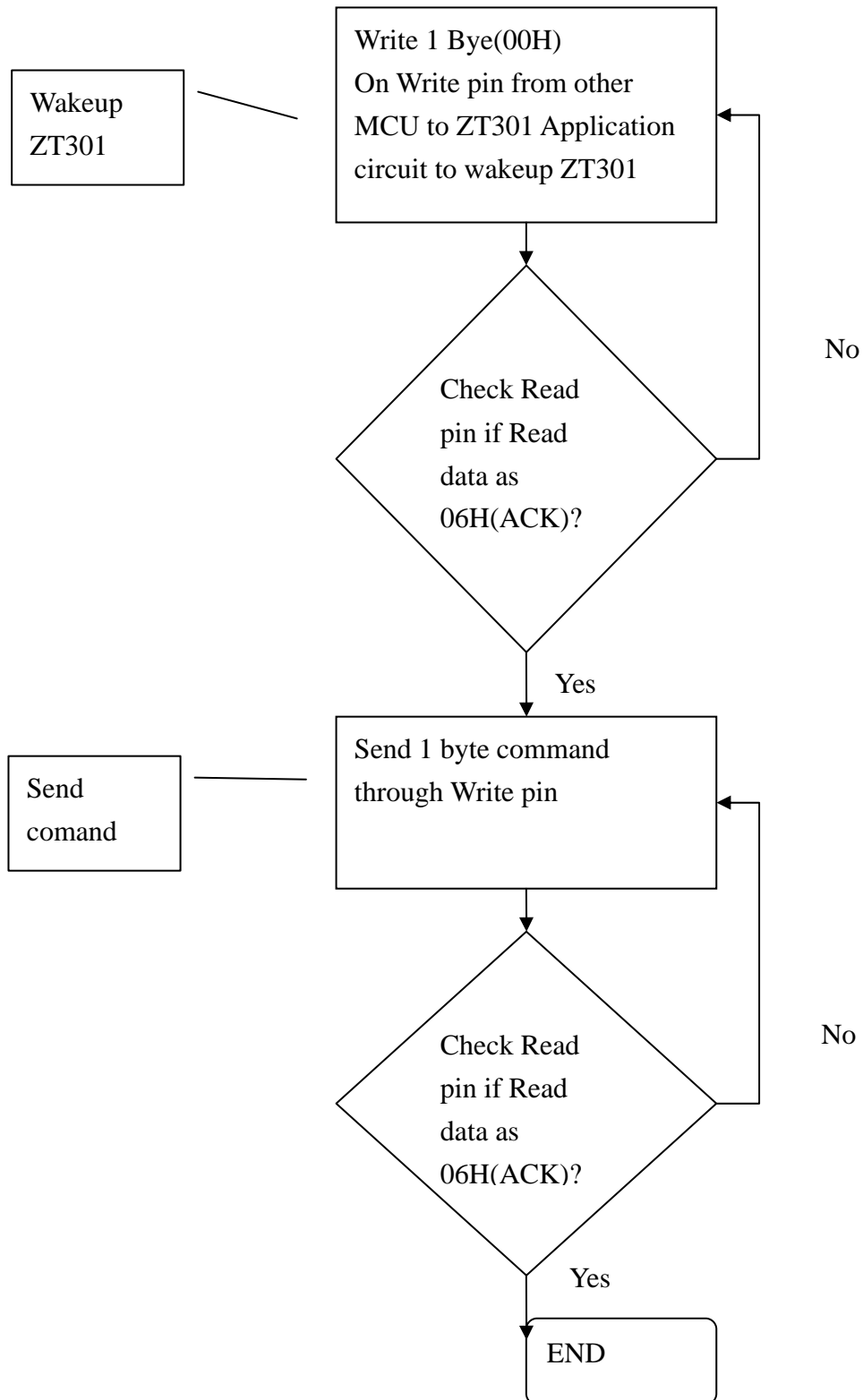


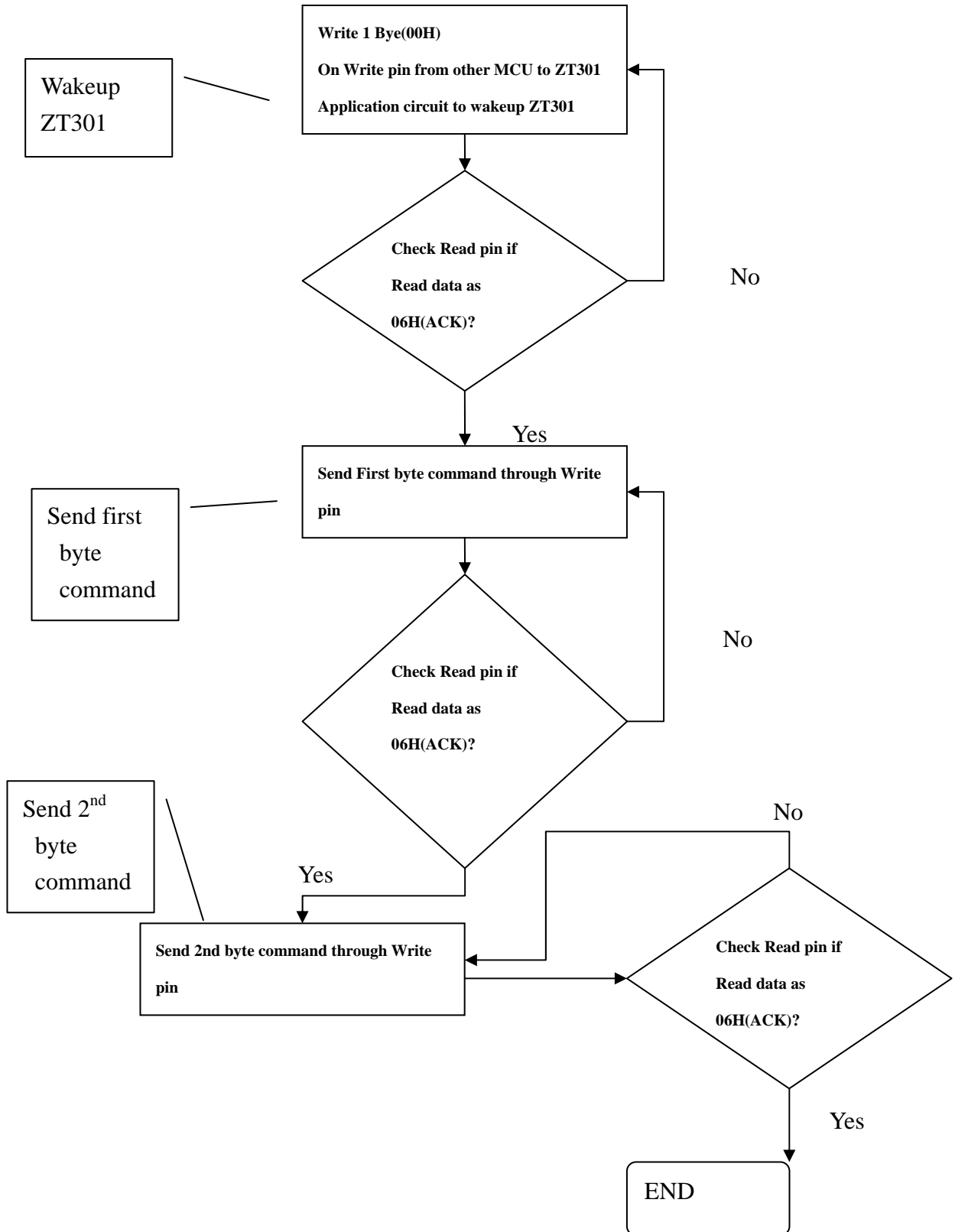
Note:

- (1) Write pin is for other MCU to send command like 71(decimal format) to do AUTOSCAN TV1.
- (2) Read pin is for other MCU to read ACK(06) from ZT301 MCU Module.
- (3) WP SCL SDA are for other MCU to directly store IR code into EEPROM(24C02). "How to store data" please reference datasheet of EEPROM(24C02)



How to send "1 byte" command?





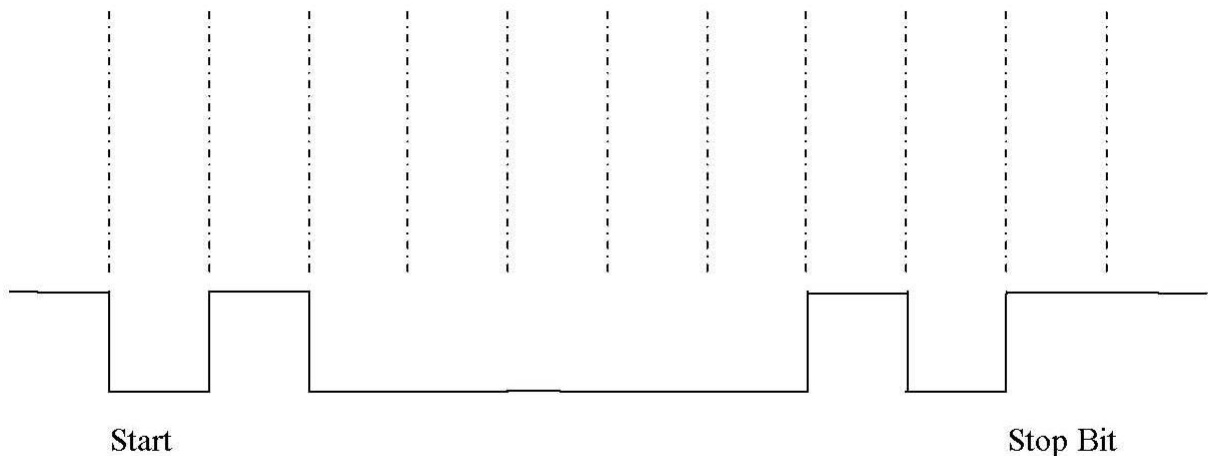
Send 2 bytes command from other MCU to ZT301 MCU



Send 62 bytes command from other MCU to ZT301 MCU

- (1) Same as 2 bytes command structure.
- (2) First byte to wake up ZT301
- (3) 2nd byte send device number (1,2,3,4). It must be 1 or 2 or 3 or 4. (1=TV1 2=CBL1 3=VCR1 4=AUX1)
- (4) Then repeat send 60 bytes IR code data.
- (5) After send 1 byte then wait ZT301 send back 06(ACK).

RS232 data format:



- | |
|---|
| (1) Start Bit always low Stop Bit always high
(2) Above send 8 bits data is Ascii=65(01000001) |
|---|

Note: Under 9600BPS, each bit is 100us.



EERPOM(24C02) internal data format

Address	Data	Address	Data	Address	Data
0	None	1	TV1 address	2	CBL1 address
3	VCR1 address	4	AUX1 address	5	TV2 address
6	CBL2 address	7	VCR2 address	8	AUX2 address
9	None	10	TV1 Code Type	11	TV1 Code carrier freq
12	TV1 Code Hi_Head	13	TV1 Code Low_Head	14	TV1 Code ID1
15	TV1 Code ID2	16	TV1 Code ID3	17	TV1 Code ID4
18	TV1 Code Max_Count	19-69	TV1 Code Others	70	CBL1 Code Type
71	CBL1 Code carrier freq	72	CBL1 Code Hi_Head	73	CBL1 Code Low_Head
74	CBL1 Code ID1	75	CBL1 Code ID2	76	CBL1 Code ID3
77	CBL1 Code ID4	78	CBL1 Code Max_Count	79-129	CBL1 Code Others
130	VCR1 Code Type	131	VCR1 Code carrier freq	132	VCR1 Code Hi_Head
133	VCR1 Code Low_Head	134	VCR1 Code ID1	135	VCR1 Code ID2
136	VCR1 Code ID3	137	VCR1 Code ID4	138	VCR1 Code Max_Count
139-189	VCR1 Code Others	190	AUX1 Code Type	191	AUX1 Code carrier freq
192	AUX1 Code Hi_Head	193	AUX1 Code Low_Head	194	AUX1 Code ID1
195	AUX1 Code ID2	196	AUX1 Code ID3	197	AUX1 Code ID4
198	AUX1 Code Max_Count	199-249	AUX1 Code Others		