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全成电子有限公司
TSUEN SHING ELECTRONICS LTD

OM008SR 技术指标

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发　　送：

抄　　送：HK市场部

传　　阅：钟生

型 号 名：汽车感应器

型　　号：OM008

修 订	更　　改　　描　　述	生　效　日　期
@A	最　新　发　行	01年12月28日
-	第一修改	02年6月20日
A	第二修改	02年7月30日

编 制：　辛 永 枝　　审 核：　　批 准：

日 期：02年7月30日　　日 期：　　日 期：

The preliminary specification of driveway transmitter

1. RF output---- 1.0 watt to 1.2 watt.
2. carrier frequency -----

FREQUENCY CHART

CHANNEL	CHANNEL TYPE	FREQ (MHz)	POWER (Watts)
1	MURS	151.820	1.1
2	MURS	151.880	1.1
3	MURS	151.940	1.1
4	MURS	154.570	1.1
5	MURS	154.600	1.1

3. 38 SUB CODE (67-250.3Hz)

CTCSS CODE FREQUENCY CHART

CODE	FREQUENCY	CODE	FREQUENCY	CODE	FREQUENCY
00	0	13	103.5	26	162.2
01	67.0	14	107.2	27	167.9
02	71.9	15	110.9	28	173.8
03	74.4	16	114.8	29	179.9
04	77.0	17	118.8	30	186.2
05	79.7	18	123.0	31	192.8
06	82.5	19	127.3	32	203.5
07	85.4	20	131.8	33	210.7
08	88.5	21	136.5	34	218.1
09	91.5	22	141.3	35	225.7
10	94.8	23	146.2	36	233.6
11	97.4	24	151.4	37	241.8
12	100	25	156.7	38	250.3

4. Modulation-------FM
5. Modulation deviation-----2.5KHz (max)
6. Channels selector--------Dip switch
7. Power supply-----9 volt DC (6 alkaline AA batteries)
8. Drain current------<800mA
9. Transmitter a voice call signal when power is applied, about transmitting 5 seconds.In American English “Alert One, …” “Alert Two,…” “alert three,…” “alert four,…”this should be permissible as an F3E emission under FCC Part 90.207
10. Transmit only
11. Must be able to remotely connect the antenna about 120mmwith a rubber duck style antenna connected via a BNC connector.
12. Transmit 4 voice call signals. The signal should be spoken in American English. Selectable by dip switch. Must also transmit a sub audible tone to control the relay in base station #17. suggest an “F1D or F2D” type emission.
13. Size----L 165mm, W 136mm, D 112mm.

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OM008SR Circuit Description

1. TX

1.1 Sound ：

语音经 RC 组成的 HPF 网络后送入 FM 调制。

Passes HPF network which composed of RC, the sound signal will be sent into FM modulation.

1.2 CTCSS and alert signal：

由 CPU 发出的 CTCSS、报警信号经 U3A；U3B 低通滤波后进入 FM 调制。

After U3B low-passed by U3A and U3B, CTCSS and alert signal which sent by CPU will come into FM modulation.

1.3 VCO:

Q3、Q4、D2 构成压控振荡器，音频信号在此进行调制，频率的改变通过 PLL 控制变容二极管 D2 而变化，Q1 为压控振荡器电源开关。

Q3,Q4 and D2 are made of the VCO, audio signal can be modulated here and passes PLL to control the varator diode D2 to change frequency.Q1 is a power on/off switch for VOC source.

1.4 Hi-frequency amp.：

Q6、Q7 为缓冲级，Q9 为推动管，Q8 为功放管，经 Q8 放大之

信号经过 LC 组成的 LPF 网络从天线发射出去。

Q6 and Q7 are made of buffer level, Q9 is a driving transistor, Q8 is a power amplifier, after amplified by Q8 the signal passes LPF network which composed of LC to emission from antenna.

2. Other

2.1 PLL：

锁相环由 U1（TB31202NF）承担，X2 为本振晶体，VC1 为微调电容，使其振荡频率固定在 21.15MHZ 上，输出恒定电流控制振荡频率，具体执行由 CPU 内部程序决定。

U1 (TB31202NF) works as a PLL circuit, X2 is a local-oscillation crystal, VC1 is a trimmer to fix the oscillation frequency at 21.15MHz, and output constant current controls the oscillation frequency, the concrete action is controlled by CPU.

2.2 Knob switch：

Channel、ID code、Tone 的选择由 SW1、SW2、SW3、SW4、U4 和 CPU 承担。

SW1,SW2,SW3,SW4,U4 and CPU provide the function of channel, ID code and tone selection.

2.3 Power source：

总电源“+9V”由“Sensor board”来提供，然后分为三组，分别

为+9V、5V、TX-V+，其中：

+9V is a general source provided by ‘sensor board’, it can be divided 3 groups, one is +9V, one is 5V and another is Tx-V+, in which:

5V 为 CPU、PLL、VCO 部分等电源。

5V is a source for CPU, PLL and VCO.

+9V 为高频功放电源。

+9V is a hi-frequency amplifier source.

TX-V+为发射部分电源，受 CPU 控制。

Tx-V+ is a source for TX, controlled by CPU.

2.4 CPU：

PIC16C21A 为 8-bit 单片机，是整个电路核心部分，其功能可由各功能开关 SW1、SW2、SW3、SW4 操作。

PIC16C21A is a 8-bit MCU, the core in the whole circuit and its functions can be operated by SW1,SW2,SW3 and SW4.

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日 期: 02 年 6 月 20 日	日 期:	日 期:

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OM008 Operation Description

发射机（DRIVEWAY TRANSMITTER）

①．组成

Compose

本发射机由两部分组成：

This driveway transmitter is composed of two section:

A. Sensor Board

Sensor Board 是红外线接收部分电路板

Sensor Board is the PCB of receiving infrared rays.

B. Transmitter Board

Transmitter Board 是信号发送部分电路板，其总电源来自于 Sensor Board。

Transmitter Board is the PCB of transmitting, the total power is from Sensor Board.

②．电源

Power supply

电源使用 2A 电池 6 只 9VDC 供电。

The power supply uses six “2A” batteries which DC=9V.

③．主要功能

Main function

本发射机是将接收到的红外线信号转变成报警信号并向外发送。本机也有 5 个通道、38 个 ID 码、4 个“TONE”声。

The transmitter can transform the receiving infrared ray into alert signal and send it out.

This section has:

Channel: 5

ID code: 38

Alert signal: 4

④．操作方法

Operating method

A． 使用前先按电池极性装上电池。

Fit on battery according to polarity.

B．通道的选择

Selecting channel

通道的选择很简单，在 TRANSMITTER BOARD 上有一个为 6 档位的编码开关 SW1，打到“1”即为通道 1，打到“3”即为通道 3。

Selecting channel is very easy with a coding switch SW1 of 6 steps on transmitter board. Turn to “1” is channel 1 set, turn to “3” is channel 3 set.

C．ID 码的选择

Selecting ID code

ID 码是由“SW2、SW3”两个编码开关所组成，SW2 是一个为 4 档位的编码开关，是用来选择 ID 码的十位数，打到“1”即为 10，打到“3”即为通道 30；SW3 是一个 10 档位的编码开关，是用来选择 ID 码的个位数，打到“6”即为 06，打到“8”即为通道 08。个位“08”加十位“30”即为“38”码。

For ID codes setting, adjust the SW3 to select ones place and SW2 to select tens digital of ID code. Fox example, SW2 is set to “8”, SW3 is set to “3”, so the ID code is 38.

注：ID 为“00”时不发送报警信号，只发送 TONE 声。

NOTE: When ID code is set to “00”, the equipment doesn’t send out alert signal but Tone.

D． TONE 的选择

Selecting TONE

TONE 的选择由 SW4 来完成，SW4 是一个 4 档的滑动开关，拔到不同的档位就可以选择所需要的 TONE 声。这四种 TONE 声是：1(Alert one)；2(Alert two)；3(Alert three)；4(Alert four)。

Selecting TONE is controlled with SW4 which is a slip switch of 4 steps You could select what you want with SW4 in the four Tones. They are: alert 1, alert 2, alert 3, alert 4.

E． 发送

transmit

Sensor Board 上有一个红外线传感器，當有移動的物體在传感器窗口外移動時，傳感受器便會接收到被反射或摺射返來的紅外線，Sensor Board 便会提供一个为+9V 的电源（时间长约 10 sec.）给 Transmitter Board，发射机便会向发送信号，这些信号可以包括：TONE、ID Code、Alert 信号。本机每感应到一次红外线只发送一次约为 10 秒钟。

There is a infrared senor on Sensor Board, when a removable object is moving out the sensor window, the sensor can receive a infrared which is reflected or refracted, now the Sensor Board can offer a +9V power supply (the time is about 10 sec.) to Transmitter Board for send signal out, the signal which sent by Transmitter Board contains: sound, ID code and Alert. Transmit about 10 seconds once receive infrared.

1. 发射 transmit

A． 发射机电源使用普通 1.5V 电池 6 只供电(注:不配电池).

Power of transmitter use normal 6pcs 1.5V batteries to apply. (Remark: Don’t equipped battery)

B．发射电流：650mA

Transmitting current: 650mA

C．待机电流：0.5Ma

Stand by current: 0.5mA