



深圳市尚瑞思电子有限公司
Shen Zhen Sunrise Electronics CO.,Ltd
TEL:+86-755-23093179-802 FAX: +86-755-23093179-816
www.sunrisedigit.com/en sales@sunrisedigit.com

SR-110V

Walkie Talkie Transceiver /Data transfer Module

VHF(136M-174M)

DATA SHEET
(V303)



DATE: 2021-3-1

Room A305, Bay area artificial intelligence Industrial Park,
Baoan District, Shenzhen City, Guangdong Province, China



1. Product Outline

The SR110V (VHF) is a low cost but high performance integrated walkie talkie module. Users only need to connect external audio amplifiers, microphone or speaker with this module ,then it can work as a small walkie talkie with 1W output . In open area, it can come to performance of 2-3Km communication.

Besides the excellent voice intercom, The more important feature is this module has the data/SMS transfer ability; up to 60 byte can be sent at one time; it is compliance with the standard UART transfer protocol;

2. Product performance

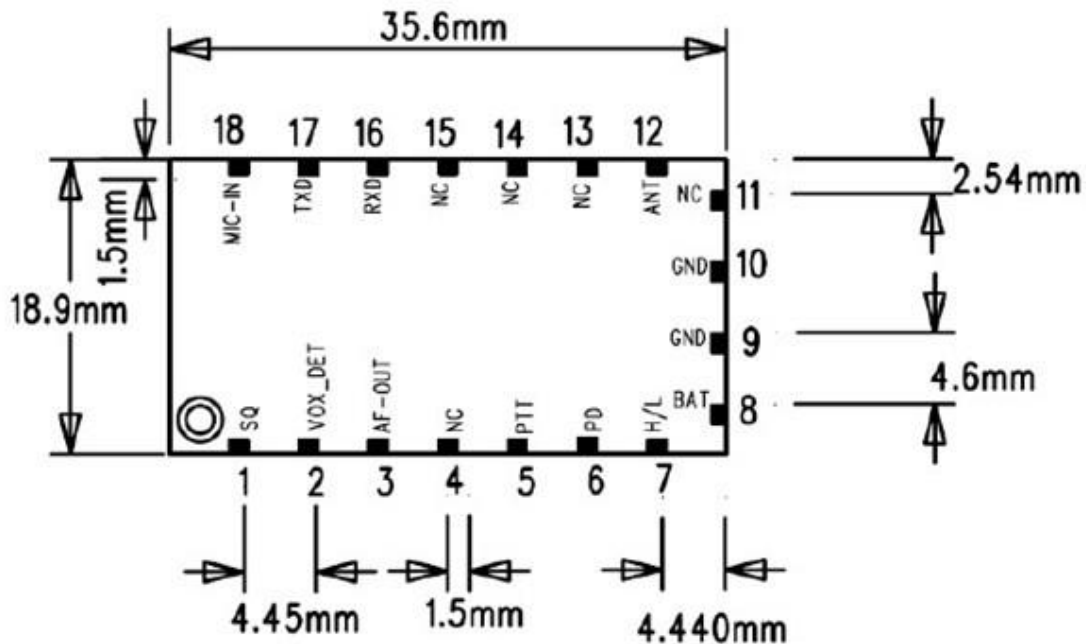
- FM demodulation technique Based on digital signal processing technology;
- Frequency Range: VHF 136M-174MHZ
- Frequency step: 5K/6.25K/12.5K/25K;
- RF Output Power: 1W
- voice encryption (scrambling): 8 type.
- Voice Compression- Expansion ;
- SMS Receive /Transformer, The wireless Baut : 1200;
- CTCSS (38 group) + CDCSS (83 group) ;
- **DTMF encode and decode.** (Customer order, it is invalid in normal released module)
- **RSSI check. (new added)**
- Automatic elimination tail ;
- Volume adjustable (1-8) ;
- Vox level adjustable (0-8) ;
- SQ level adjustable (0-8) ;
- MIC sensitivity level adjustable (1-8)
- The ultra low power dissipation in Sleep Mode (0.1uA) ;
- Power supply : DC 3.3~5.0V , recommend to be 3.6V-4.2V
- Ultra small size: 18 * 35 * 3.2MM;
- Communication distance: more than 3 -4KM in open area .



Applications:

- portable intercom and paging systems;
- wireless data transmission;
- mobile phones and other embedded in radio functions product。
- Portable walkie-talkie,
- Outdoor sports equipment,
- Building security,
- Audio monitor system

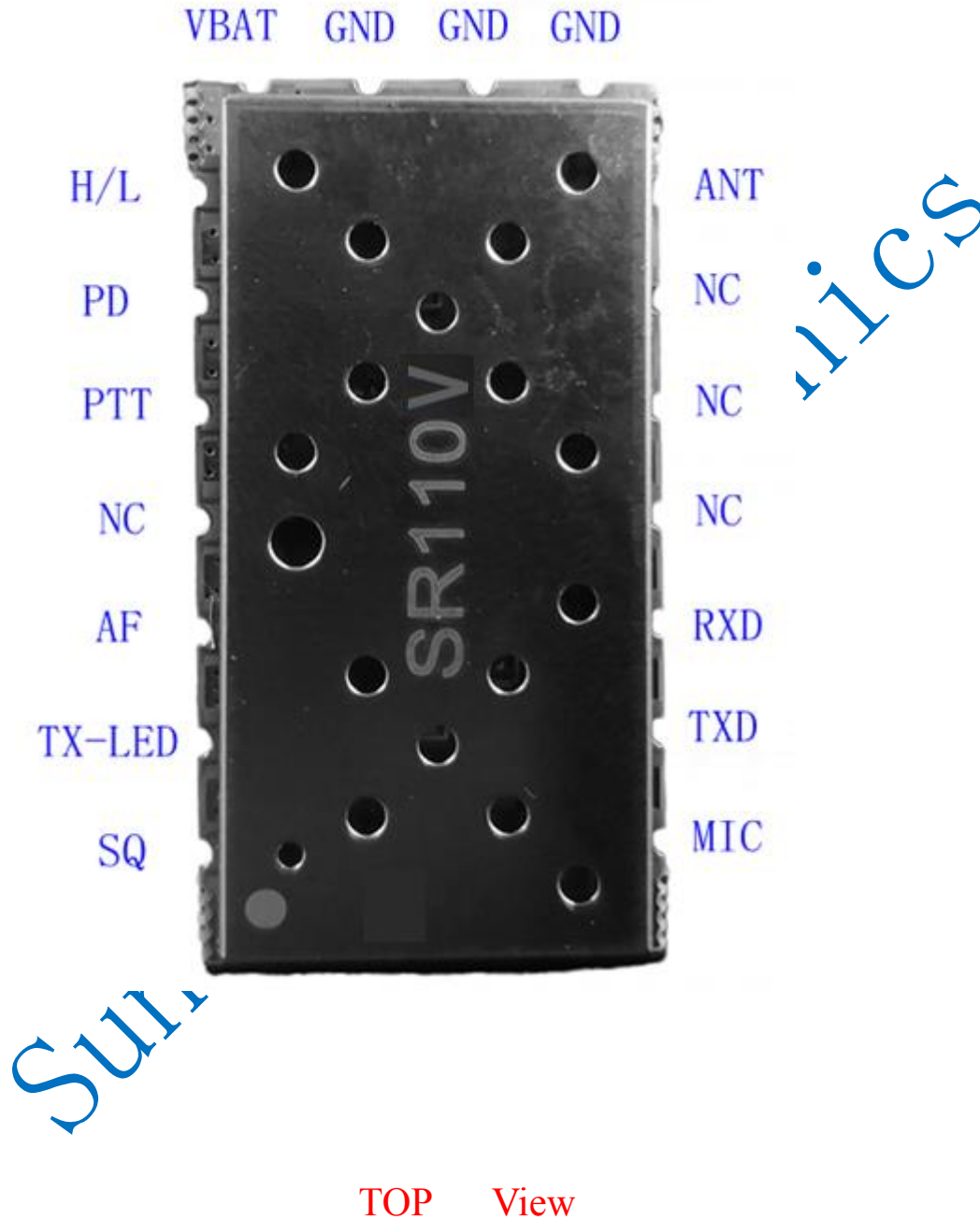
3. Module mechanical size



Bottom View



4. Module pin assignment

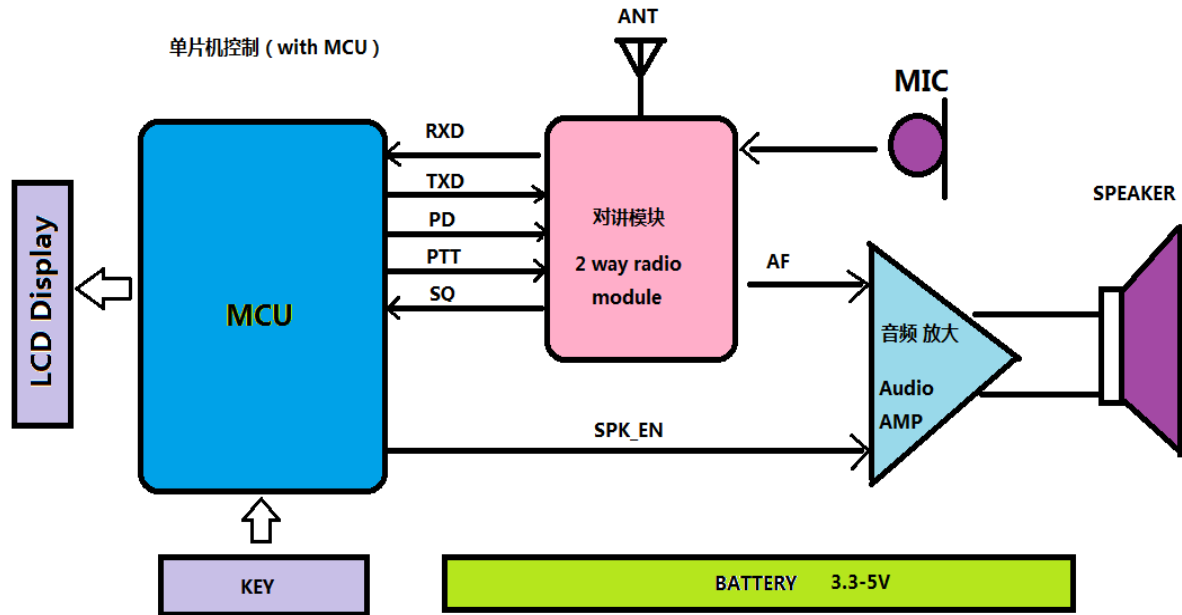




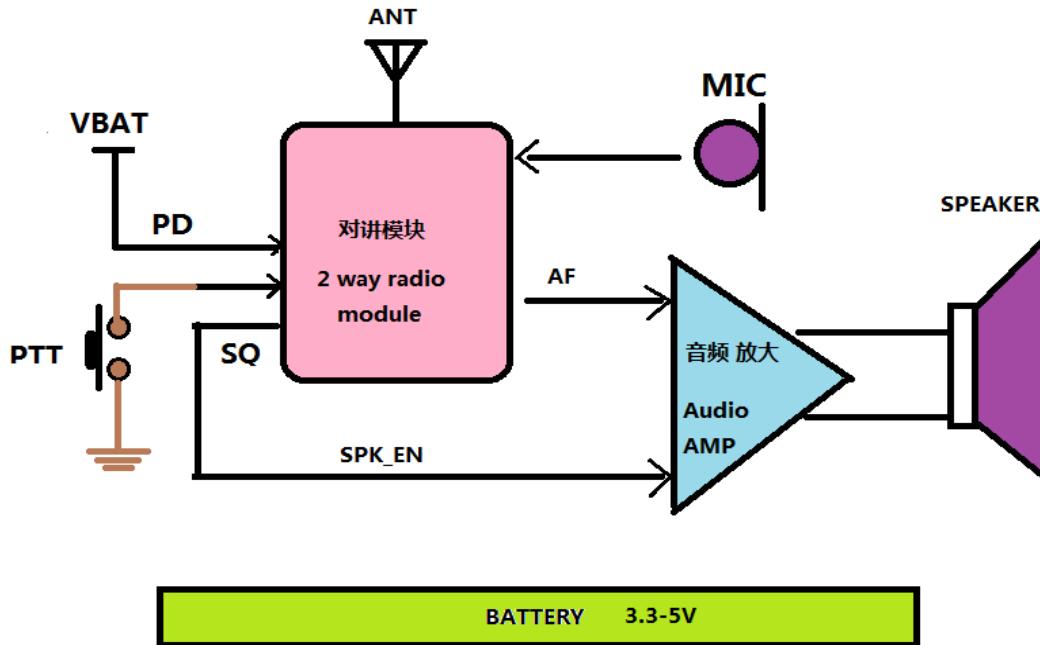
J1 pin name	Pin number	Function description
SQ	1	Squelch control 0: active
VOX_DET	2	1) with VOX mode, it is the VOX state indication; 0: Talk finished; 1: Talking; 2) without VOX, it is the transmitter state indication; 0: receive state 1: transmitter state
AF_OUT	3	Audio output
NC	4	NC
PTT	5	PTT control 1: Receive; 0: Transmit
PD	6	Sleep control 0: into sleep state 1: Running
H/L	7	RF transmit power selection; 0: 0.5W; NC: 1W; Note: if you want a 1w power ,just leave this pin NC, it can't be pull high.
BAT	8	Power supply: DC 3.3V - 5V
GND	9	GND
GND	10	GND
NC	11	NC
ANT	12	Rf Antenna input;
NC	13	NC
NC	14	NC
NC	15	NC
RXD	16	UART - Rxd
TXD	17	UART - Txd
MIC_IN	18	Microphone input;



5. Typical application Block diagram



独立工作 (without MCU)





6. Electrical Characteristics

6.1 DC Electrical Characteristics (Recommended)

Symbol	Description	Min	Typical	Max	unit
V _{BAT}	Power supply	3.3	4.0	4.5	V
T _{amb}	Ambient temperature	-20	27	60	°C
	Internal Initialize Time when power on	400	500		ms
	CMOS low level	0		0.6	V
	CMOS high level	2.4		3	V

Notes: VCC = 3V(for control port voltage)

6.2 DC Electrical Characteristics (Maximum)

Symbol	description	Min	Typical	Max	unit
V _{BAT}	Power supply	3.3	4.2	5.0	V
T _{amb}	Ambient temperature	-30		85	°C
I _{IN}	I/O input current	-5		5	mA
V _{IN}	I/O input voltage)	-0.3		3.3	V

6.3 Power Characteristics

(Test conditons: V_{BAT} = 4.0V, T_A = 25 to 85 °C)

Work mode	description	Test condition	Typical	unit
Continuous Receive	The receiver is in normal work mode	Input 150.050MHZ, RF level -47dBm, AF=1KHz,MOD=1.5KHz	65	mA
Continuous Transmit	The transmitter is in normal work mode	Input 1KHz Modulated signal	650(High) 350(Low)	MA

Receive Squelch power Save mode	The receiver is in power save state with standby condition.		12	mA
Deep sleep (PDN Is low)	Both the receiver and transmitter are all power off.	Within 500ms finish the power on process, switch to continuous receive/transmit mode.	0.1	uA



6.4 Overall electrical performance specifications

Frequency Range (MHz)	VHF:136-174
Channel spacing (KHz)	25 / 12.5KHZ
Antenna Impedance (Ω)	50
Operating temperature ($^{\circ}\text{C}$)	-20~+60
Frequency Stability (ppm)	± 2.5

6.5 Receive Performance

(unless special comment, Test condition VBAT = 4.0 V, TA = -25 $^{\circ}\text{C}$)

Symbol	description	Test condition	Min	Typical	Max	unit
		VHF	136		174	
Sensitivity	Reference sensitivity	12dB S/N for Audio output	-120	-122		dBm
	Squelch Sensitivity	Adjustable by software		-120		
	Received SNR	1.5KHZ Deviation	52	55		
	Adjacent Channel Selectivity	12.5KHz Deviation	58	60		dB
	Intermodulation Immunity	12.5KHz Channel spacing	55	60		
	Spurious response rejection	12.5KHz Channel spacing	55	55		dB
AF OUT	Audio Output (RMS)	Fo=1KHz Adjustable by software		150	150	MV
	Audio output distortion	Fo=1KHz		1	3	%
	Audio response	300HZ		+2		
		500HZ		+4		
		1000HZ		0		
		2500HZ		-7		
		3000HZ		-13		



6.6 Transmit Performance

(unless special comment, Test condition VBAT = 4.0 V, TA = -25°C)

Symbol	Description	Test condition	Min	Typical	Max	unit
			136		174	MHZ
Pout	Rf Transmit power		800	1000	1200	MW
	Transmit current		350	650	750	mA
	Maximum modulation frequency deviation limit	Narrow bandwidth Broadband			2.5 5.0	KHZ KHZ
	Modulation sensitivity	8 Level adjustable by software	5	7	12	MV
	Audio modulation distortion			1	3	%
	Modulation characteristics	300HZ 500HZ 1000HZ 2500HZ 3000HZ	-10 -6 0 5 6			DB DB DB DB
SNR	S/N		40	42	45	dB
	Carrier suppression			-60		dBc
	IM3 Suppression			-60		dBc
	Adjacent Channel Power	12.5KHz offset		-65		dBc
	Stray radiation			-36		dBc



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7. Comment:

- 1、 The default parameter for this module after power on are as bellow:

GBW=12.5KHZHZ,

UHF:

TFV=150.05000MHZ,

RFV=150.05000MHZ,

CTCSS=67HZ, (For both Transfer and receive)

SQ=2,

Scramble: OFF

VOX: off

- 2、 The PTT pin can't be pulled to Lo when in data transfer mode.
- 3、 PD must be set to High level for module running.
- 4、 UART command should be send after 0.5S when module power on.

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Walkie Talkie Transceiver & Data Transfer module

UHF(136M-174M)

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UART communication protocol

VER301

Room A305, Bay area artificial intelligence Industrial Park,
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1 Outline

SR-110U module has a standard AT command interface, it is easily to communicate with and control the module;

1.1 AT command type

1) Command without parameter:

AT+<command>, eg.: AT+DMOCONNECT

2) Command with parameter:

AT+<command>=<par1>,<par2>,<par3>...

3) Response command format are as below :

<CR><LF><command string><CR><LF>

<CR> Enter, 0x0D

<LF> Newline, 0x0A。

1.2 AT Command format

All the AT command started with "AT", And ended with<CR>。

The UART port default setting are as below:

- ◆ 8 bit data,
- ◆ 1 bit stop,
- ◆ without parity,
- ◆ CTS/RTS,
- ◆ 9600 baut

AT command response format:

<CR><LF><command string><CR><LF>



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2 the communication command format

2.1 The command frame format define

The communication format are as AT instruction。

All data are as **ASCII** code, unless special defined.

The control command format:

AT+DMOXXX

The module response command format:

+DMOXXX

2.1.1 The module can support both **Original** instruction and **Reduced** instruction.
User can select it to use.

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2.1.2 Reduced Instruction Set:

AT+DMOGRP	Setting for : frequency, CTCSS, band width, disable TX if busy, transmit power
AT+DMOSAV	Auto power save setting
AT+DMOVOL	Audio output level setting
AT+DMOVOX	VOX setting
AT+DMOFUN	Setting for: SQL, MIC sensitivity, TOT, companding, scramble
AT+DMOMES	DATA/SMS sending
AT+DMODTF	DTMF encode /decode (Customer order, it is invalided in normal released module)
AT+DMOCONT	Shake hand command, uart connection test

2.1.3 Original Instruction Set

AT+DMOSETGROUP	Setting for : frequency, CTCSS, band width, SQL, disable TX if busy, transmit power, companding
AT+DMOAUTOPOWCONTR	Auto power save setting
AT+DMOSETVOLUME	Audio output level setting
AT+DMOSETVOX	VOX setting
AT+DMOSETMIC	MIC sensitivity, scramble, TOT setting
AT+DMOMES	DATA/SMS sending
AT+DMOCONNECT	Shake hand command, uart connection test

2.1.4 Common instruction set

AT+DMOREST	Restore to factory setting.
AT+DMOEND	Tail Tone Elimination set (customer order)
AT+DMORSSI	RSSI inquiry
AT+DMOXERQ	Version inquiry



2.2 The original Instruction Set list

2.2.1 AT+DMOSETGROUP (Group setting command)

Description	Bandwidth, frequency, CTCSS, SQ setting command;									
Command	AT+DMOSETGROUP=GBW,RFV,TFV,RXCXCSS,SQ,TXCXCSS,FLAG									
Example	Host	AT+DMOSETGROUP=0,150.0250,150.0250,1,2,1,0								
	Module Response command	+DMOSETGROUP:0 Success +DMOSETGROUP:1 Failure								
comment	GBW: Bandwidth. 0: Narrow (for normal use) 1: Wide (for professional use)									
	TFV: Transmit frequency: VHF: 136.0000M-174.0000M HZ (must be 4 digit after dot) (It should be the integer multiple of 6.25K or 5K)									
	RFV: Receive frequency: VHF: 136.0000M-174.0000M HZ (must be 4 digit after dot) (It should be the integer multiple of 6.25K or 5K)									
	RXCXCSS: CTCSS/CDCSS , (00-121) for receive TXCXCSS: CTCSS/CDCSS , (00-121) for transmit 00: no coding 01-38: CTCSS (analog) 39-121: CDCSS (digital)									
	SQ: Squelch level setting Level: 0-8 (0: into monitor mode)									
	Flag : (FLAG = bit2 * 4 + bit1*2 +bit0) <table style="width:100%; border:none;"> <tr> <td>Bit0 (Busy Lock switch)</td> <td>0, OFF</td> <td>1, ON</td> </tr> <tr> <td>Bit1 (Companding switch)</td> <td>0, OFF</td> <td>1, ON</td> </tr> <tr> <td>Bit2 (Transmit power setting)</td> <td>0, High</td> <td>1, LO</td> </tr> </table>		Bit0 (Busy Lock switch)	0, OFF	1, ON	Bit1 (Companding switch)	0, OFF	1, ON	Bit2 (Transmit power setting)	0, High
Bit0 (Busy Lock switch)	0, OFF	1, ON								
Bit1 (Companding switch)	0, OFF	1, ON								
Bit2 (Transmit power setting)	0, High	1, LO								



2.2.2 AT+DMOAUTOPOWCONTR (Auto power save command)

Description	Module auto power save setting	
Command	AT+DMOAUTOPOWCONTR=X	
Example	Host command	AT+DMOAUTOPOWCONTR=0
	Module Response command	+DMOAUTOPOWCONTR:0 Success +DMOAUTOPOWCONTR:1 Failure
comment	X: 0 Enable power save (default) 1 Disable power save	

Tips:

1. When for message sending/Data transfer application, Please disable power save for fast transmit and receive.
2. When for VOX application, Please disable power save.

2.2.3 AT+DMOSETVOLUME (Volume setting command)

Description	Volume setting	
Command	AT+DMOSETVOLUME=X	
Example	Host command	AT+DMOSETVOLUME=1
	Module response command	+DMOSETVOLUME: 0 Success +DMOSETVOLUME: 1 Failure
Comment	X: 1-9 (default: 8)	



2.2.4 AT+DMOSETVOX (Acoustic control command)

Description	Acoustic control setting	
Command	AT+DMOSETVOX=X	
Example	Host command	AT+DMOSETVOX=6
	Module response command	+ DMOSETVOX: 0 Success + DMOSETVOX: 1 Failure
Comment	X: Acoustic control level (0-8) (0: Means VOX OFF, default value) ; LEVEL1=12MV LEVLE5=7MV LEVEL8=5MV	

Tips:

- 1) The number more big, the sensitivity more high;
- 2) When VOX ON, the Auto power off should be disabled,
that is (AT+DMOAUTOPOWCONTR=1)

2.2.5 AT+DMOSETMIC (Microphone sensitivity & Voice scram setting command)

Description	Microphone sensitivity & Voice scram setting command	
Command	AT+DMOSETMIC=MICLVL, SCRAMLVL,TOT	
Example	Host command	AT+DMOSETMIC=1,0,0
	Module response command	+ DMOSETMIC: 0 Success + DMOSETMIC: 1 Failure
Comment	MICLVL: Mic sensitivity level (1-8), default value is 6 ; The lever is more big ,and the sensitivity is more high;	
	SCRAMLVL: Voice scram (0-7.) 0 : Disable voice scram (default : 0) 1-7: It means 8 different encryption mode;	
	TOT: time of transmit (0~9) 0: OFF, 1~9: 1-9 minutes; default: 3 mintues;	



2.2.6 AT+DMOMES (Short message sending / Data transfer command)

Description	Host send message or data to module for transmit	
Command	AT+DMOMES=[Message Lenth]XXX	
Example	Host command	AT+DMOMES= 7 ABCDEFGG (41 54 2B 44 4D 4F 4D 45 53 3D 07 41 42 43 44 45 46 47 0D 0A)
	Module response command	+ DMOMES:0 Success + DMOMES:1 Failure
Comment	[Message Lenth]: the message length (Max 70 Bytes), it is HEX code, only one Byte.	
	XXX: is the message contents.	

Tips:

1. For fast transmit and receive SMS, Please disable Auto power off;

That is : (AT+DMOAUTOPOWCONTR=1);

2. [Message Lenth] is HEX code.

If send the command from PC, Please be noted that , once type the command by “TEXT”, the [Message Lenth] would be treated as one or two bytes, it caused the wrong message be sent. So, it is necessary to modify the message length into one byte by hand under the “HEX” mode before send the message.

For example: AT+DMOMES=**7**ABCDEFGG

The length number **7** would be treated as **37**;

Should modify the length to be 0x7 by hand;

AT+DMOMES=**12**ABCDEFABCDEF

The length number **12** would be treated as **31 32**

Should modify the length to be 0xC by hand;



2.2.7 +DMOMES (The module received the message and automatically send to HOST)

Description	The module received the message and automatically send to HOST	
Command	+DMOMES=[Message Lenth]XXX	
Example	Module send the message to Host	+DMOMES =7ABCDEFG (2B 44 4D 4F 4D 45 53 3D 07 41 42 43 44 45 46 47 0D 0A)
	Host response to Module	AT+DMOMES: 0 Success AT+DMOMES: 1 Failure
Comment	[Message Lenth]: is the message length(Max 70 bytes), HEX code.	
	XXX: is the message contents.	

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2.3 The Reduced Instruction Set

2.3.1 AT+DMOGRP (Group setting command)

Description	Bandwidth, frequency, CTCSS, SQ setting command;	
Command	AT+DMOGRP=RFV,TFV,RXCT,TXCT,Flag,Flag1	
Example	Host Command	AT+DMOGRP=150.02500,150.02500,RR, TT,0,0 (enter)
	Module Response command	+DMOGRP:0 Success + DMOGRP:1 Failure
comment	TFV: Transmit frequency: VHF: 136.00000M-174.00000M HZ (must be 5 digits after dot) (It should be the integer multiple of 6.25K or 5K)	
	RFV: Receive frequency: VHF: 136.00000M-174.00000M HZ (must be 5 digits after dot) (It should be the integer multiple of 6.25K or 5K)	
	RXCT : CTCSS/CDCSS , for receive coding (HEX code) TXCT : CTCSS/CDCSS , for transmit coding (HEX code) 2bytes,(HEX code); RXCT lower 4 bit is for decimal part , if no setting then filled with "FF FF" Eg: CTCSS: 67.0 HZ D0D1 = 0X70 0X06 CDCSS: D023N D0D1 = 2380 D023N D0D1 = 4482 D023N D0D1 = 23C0 D023N D0D1 = 51C2	



	FLAG : (ASCII format) Bit0 : busy locking / 0:OFF 1:ON Bit1: band setting / 0:Narrow 1: Wide (FLAG =bit1*2 +bit0) FLAG 1: (ASCII format) Bit0 : transmit power setting/ 0: High 1: Low (FLAG1 = bit0)
--	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

1. Command explanation:

Important notice: for “AT+DMOGRP=RFV,TFV,RXCT,TXCT,Flag,Flag1”, All the command is TEXT format, while the RXCT,TXCT is HEX format.

Eg. Frequency : 150.02500 CTCSS : 67.0 (HEX coding:70 06)

A) If input the command by HEX

```

41 54 2B 44 4D 4F 47 52 50 3D 31 35 30 2E 30 32 35 30 30 2C 31 35 30 2E 30 32
A T + D M O G R P = 1 5 0 , 0 2 5 0 0 , 1 5 0 . 0 2
35 30 30 2C 70 06 2C 70 06 2C 30 2C 30 0D 0A
5 0 0 , R R , T T , 0 , 0 (Enter)
  
```

Find the R R T T position ,instead with 70 06

B) If input the command by TEXT,

1) Input the command by TEXT

AT+DMOGRP=150.02500,150.02500,RR,TT,0,0(Enter)

2) Change all the TEXT to HEX format:

```

41 54 2B 44 4D 4F 47 52 50 3D 31 35 30 2E 30 32 35 30 30 2C 31 35 30
2E 30 32 35 30 30 2C 52 52 2C 54 54 2C 30 2C 30 0D 0A
R R T T
  
```

3) Find the R R, T,T position, then instead the HEX with correct CTC/CDC coding., then send the command.

```

41 54 2B 44 4D 4F 47 52 50 3D 31 35 30 2E 30 32 35 30 30 2C 31 35 30 2E
30 32 35 30 30 2C 70 06 2C 70 06 2C 30 2C 30 0D 0A
R R T T
  
```



2. Comment for CTCSS /CDCSS setting:

A) for analog CTCSS setting

67.0 67.0 →06 70→ D0 D1= 70 06
250.3 250.3 →25 03→ D0 D1= 03 25

B) for digital CDCSS setting

For Positive CDCSS code: MSB of D1 is **8**;

Eg: D023N 023→**8**023→ D0 D1=23 **8**0
D244N 244→**8**244→ D0 D1=44 **8**2

For Negative CDCSS code: MSB of D1 is **C**;

Eg: D023I 023→**C**023→ D0 D1=23 **C**0
D251I 251→**C**251→ D0 D1=51 **C**2

3) FLAG /FLAG1 Setting

BIT1 BIT0 is BCD code;

$$\text{FLAG} = \text{BIT1} * 2 + \text{BIT0}$$

$$\text{FLAG1} = \text{BIT1} * 2 + \text{BIT0}$$

Eg:

1) FLAG:

Bit1 = 1; bit0 = 0

The BCD of FLAG is $2 + 0 = 2$; FLAG = 2;

2) FLAG:

Bit1 = 1; bit0 = 1

The BCD of FLAG is $2 + 1 = 3$; FLAG = 3;

2) FLAG:

Bit1 = 0; bit0 = 1

The BCD of FLAG is $0 + 1 = 1$; FLAG = 1;



2.3.2 AT+DMOSAV (Auto power save command)

Description	Module auto power save setting	
Command	AT+DMOSAV=X	
Example	Host command	AT+DMOSAV=0(Enter)
	Module Response command	+DMOSAV:0 Success +DMOSAV:1 Failure
comment	X: 0 Enable power save (default) 1 Disable power save	

Comment:

- When for message sending/Data transfer application, Please disable power save for fast transmit and receive.
- When for VOX application, Please disable power save.

2.3.3 AT+DMOVOL (Volume setting command)

Description	Volume setting	
Command	AT+DMOVOL=X	
Example	Host command	AT+DMOVOL=1(enter)
	Module response command	+DMOVOL: 0 Success +DMOVOL: 1 Failure
Comment	X: 1-8 (default: 8)	



2.3.4 AT+DMOVOX (Acoustic control command)

Description	Acoustic control setting	
Command	AT+DMOVOX=X	
Example	Host command	AT+DMOVOX=0(enter)
	Module response command	+DMOVOX: 0 Success +DMOVOX: 1 Failure
Comment	X: Acoustic control level (0-8) (0: Means VOX OFF, default value) ; LEVEL1=12MV LEVLE5=7MV LEVEL8=5MV	

Tips:

- 1) The number more big, the sensitivity more high;
- 2) When VOX ON, the Auto power off should be disabled, that is : AT+DMOAUTOPOWCONTR=1;

2.3.5 AT+DMOFUN (extension function setting)

Description	Microphone sensitivity & Voice scam setting command	
Command	AT+DMOFUN=SQL, MICLVL, TOT, SCRAMLVL ,COMP	
Example	Host command	AT+DMOFUN=3,1,0,0,0(enter)
	Module response command	+DMOFUN: 0 Success +DMOFUN: 1 Failure
Comment	MICLVL: Mic sensitivity level (1-8), default value is 6 ; The lever is more big ,and the sensitivity is more high; SQ: Squelch level: (0-8, 0: Monitor mode) MICLVL: Mic sensitivity level: (0-8) TOT: Transmit timer limit (0-9 minute , 0: means OFF) SCRAMLVL: voice scam (0-7, 0: means OFF) COMP: companding setting: 0: OFF. 1: ON	



2.3.9 AT+DMODTF Encode DTMF for sending

(Customer order, it is invalid in normal released module)

description	Sending DTMF number 0-9 or letter ABCD*#	
instruction	AT+DMODTF=XY	
example	AT+DMODTF=09	
response	+DMODTF: 0 Succeed	+ DMODTF: 1 failure
comment	<p>XY sending number</p> <p>00 sending DTMF code: 0 01 sending DTMF code: 1 02 sending DTMF code: 2 03 sending DTMF code: 3 04 sending DTMF code: 4 05 sending DTMF code: 5 06 sending DTMF code: 6 07 sending DTMF code: 7 08 sending DTMF code: 8 09 sending DTMF code: 9</p> <p>XY sending letter:</p> <p>10 sending DTMF code: A 11 sending DTMF code: B 12 sending DTMF code: C 13 sending DTMF code: D 14 sending DTMF code: * 15 sending DTMF code: #</p>	



2.3.10 +DMODTF Decode DTMF for receive

(Customer order, it is invalid in normal released module)

description	Module decode the DTMF code and send it to HOST
instruction	+DMODTF: XY
example	+DMODTF: 09
response	
comment	<p>XY Decode for number</p> <p>00 received DTMF code: 0</p> <p>10 received DTMF code: 1</p> <p>11 received DTMF code: 2</p> <p>12 received DTMF code: 3</p> <p>13 received DTMF code: 4</p> <p>14 received DTMF code: 5</p> <p>15 received DTMF code: 6</p> <p>16 received DTMF code: 7</p> <p>17 received DTMF code: 8</p> <p>18 received DTMF code: 9</p> <p>XY Decode for letter:</p> <p>10 received DTMF code: A</p> <p>11 received DTMF code: B</p> <p>12 received DTMF code: C</p> <p>13 received DTMF code: D</p> <p>14 received DTMF code: *</p> <p>15 received DTMF code: #</p>



2.4 The common command list

2.4.1 AT+DMOVRQ (Inquiry module version command)

Description	Inquiry the module software version	
command	AT+DMOVRQ	
Example	Host command	AT+DMOVRQ(Enter)
	Module Response command	+DMOVRQ: 105V-VXXX
comment	The response of module is the module software version.	

2.4.2 AT+DMOEND Tail tone elimination setting

(Customer order, no this setting in normal production)

description	Tail tone elimination setting
instruction	AT+DMOEND=X
example	AT+DMOEND=0 (Enter)
response	+DMOEND: 0
comment	X Enable or disable the tail tone . 0: Enable; (default) 1: Disable ;

Please pay attention to this command: Unless you have clear requirement, Do not disable the tail tone, otherwise it will cause the reception side a bit noise when transmit side finished transmitting.

2.4.3 AT+DMOREST restore factory setting

description	Restore factory setting
instruction	AT+DMOREST
example	AT+DMOREST (Enter)
response	+DMOREST: 0
comment	



2.4.4 AT+DMORSI Received signal strength query

description	Received signal strength query																													
instruction	AT+DMORSI																													
example	AT+DMORSI (回车换行)																													
response	+ DMORSI:XXX	XXX is signal strength level, it is just for reference.																												
comment	<p>XXX: 000-127</p> <p>RX sensitivity : RSSI (Reference value)</p> <table><tr><td>OFF</td><td><30</td></tr><tr><td>-120</td><td>036</td></tr><tr><td>-110</td><td>046</td></tr><tr><td>-100</td><td>055</td></tr><tr><td>-90</td><td>065</td></tr><tr><td>-80</td><td>075</td></tr><tr><td>-70</td><td>085</td></tr><tr><td>-60</td><td>094</td></tr><tr><td>-50</td><td>103</td></tr><tr><td>-40</td><td>115</td></tr><tr><td>-30</td><td>127</td></tr><tr><td>-20</td><td>127</td></tr><tr><td>-10</td><td>127</td></tr><tr><td>0</td><td>127</td></tr></table>		OFF	<30	-120	036	-110	046	-100	055	-90	065	-80	075	-70	085	-60	094	-50	103	-40	115	-30	127	-20	127	-10	127	0	127
OFF	<30																													
-120	036																													
-110	046																													
-100	055																													
-90	065																													
-80	075																													
-70	085																													
-60	094																													
-50	103																													
-40	115																													
-30	127																													
-20	127																													
-10	127																													
0	127																													

Sunrise Electronics



1. CTCSS 列表

CH	FREQ.	CH	FREQ.	CH	FREQ.
1	67.0	13	103.5	26	162.2
		14	107.2	27	167.9
2	71.9	15	110.9	28	173.8
3	74.4	16	114.8	29	179.9
4	77.0	17	118.8	30	186.2
5	79.7	18	123.0	31	192.8
6	82.5	19	127.3	32	203.5
7	85.4	20	131.8	33	210.7
8	88.5	21	136.5	34	218.1
9	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	100.0	25	156.7	38	250.3

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2. DCS 列表

CH	CODE	CH	CODE	CH	CODE	CH	CODE	CH	CODE
39	N023	58	N132	77	N265	96	N464	115	N712
40	N025	59	N134	78	N271	97	N465	116	N723
41	N026	60	N143	79	N306	98	N466	117	N731
42	N031	61	N152	80	N311	99	N503	118	N732
43	N032	62	N155	81	N315	100	N506	119	N734
44	N043	63	N156	82	N331	101	N516	120	N743
45	N047	64	N162	83	N343	102	N532	121	N754
46	N051	65	N165	84	N346	103	N546		
47	N054	66	N172	85	N351	104	N565		
48	N065	67	N174	86	N364	105	N606		
49	N071	68	N205	87	N365	106	N612		
50	N072	69	N223	88	N371	107	N624		
51	N073	70	N226	89	N411	108	N627		
52	N074	71	N243	90	N412	109	N631		
53	N114	72	N244	91	N413	110	N632		
54	N115	73	N245	92	N423	111	N654		
55	N116	74	N251	93	N431	112	N662		
56	N125	75	N261	94	N432	113	N664		
57	N131	76	N263	95	N445	114	N703		

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