

Configure DRA818V/U with USB Board DAC02

DESCRIPTION

This manual demonstrates how to use computer to configure the parameters in order to understand the commands more clearly. From the pin description of DRA818V/DRA818U, we can see that GND, VCC, RXD, TXD and PD are used for normal configuration so we can connect the five pins to USB-to-TTL board and connect them to computer. Here we use USB board DAC02 to start the testing.

PIN	Name	Function	Description
1	GND	Ground	Ground (0V)
2	VCC	Power	Power supply
3			
4	TXD	Input	UART output
5	RXD	Output	UART input
6			
7			

Table 1: DAC02 Pin Functions

PIN	Name	Function	Description
6	PD	Input	Power saving control pin: Low \rightarrow sleep mode;
			High→normal mode
8	VBAT	Power	Power supply
9	GND	Ground	Ground (0V)
16	RXD	Input	UART input, TTL level
17	TXD	Output	UART output, TTL level

Table 2: DRA818V/DRA818U Pin Functions

We can connect the PD and VBAT pins of DRA818V/U module to the VCC pin of DAC02 and make cross connection for RXD and TXD pins of the two boards. We use the popular Advanced Serial Port Monitor from AGG Software as serial tool to configure the module. Each command is ended with $\langle CR \rangle \langle LF \rangle$ so we need to choose the option by clicking the Menu \rightarrow File- \rightarrow Configure. From the dialogue, we click button "COM port" and then "End-of-string character".



Image: Som p Data flow control End-of-string character for receiving Image: Som p Image: Som p #00 + 0.	
arity t control #00 · NUL #04#0D · LF+CR Image: Second control in the second control in	
Image: String character #0A · LF None Image: String character Custom #0D #0A Image: String character for sending Image: String character for sending Image: String character for sending Image: String character for sending Image: String character for sending Image: String character for sending Image: String character for sending Image: String character for sending Image: String character for sending Image: String character for sending Image: String character for sending Image: String character for sending Image: String character for sending Image: String character for sending Image: String character for sending Image: String character for sending Image: String character for sending Image: String character for sending Image: String character for sending Image: String character for sending Image: String character for sending Image: String character for sending Image: String character for sending Image: String character for sending Image: String character for sending Image: String character for sending Image: String character for sending Image: String character for sending Image: String character for sending Image: String character for sending	
Custom #0D#0A End-of-string character Custom #0D#0A End-of-string character for sending #0D - CR #0D - CR #0D - NUL #00 + NUL #04+0D - LF+CR	
End-of-string character End-of-string character for sending #0D + CR #0D + CR #0D + NUL #00 + NUL #0A+0D + LF+CR	
#0D · CR #0D #0A · CR+LF #00 · NUL #04#0D · LF+CR	
© #00 · NUL ◎ #04#0D · LF+CR	
🗇 #0A - LF 💿 None	
© Custom #0D#0A ◎ CRC crc8-sum ▼	
Add before sending a data packet #01	
9-bit data transfer format	
Off	
Mark parity on send	
SCII Files O Space parity on send	

Figure 1: Set the End of String Character for Sending

File View	Edit O	ptions Da	ta source	Mode	Plugins	Help				
COM port	СОМЗ (S 🔻	Baud rate	9600	▼ Data	bits 8	-	B 🗟 .)		
Parity type	None 💌	Stop bits	1 ▼ <u>A</u> u	to delay 📃	500	•				
					✓ Sen	d 🔘	<u>O</u> pen			
4scti Hex										





For the first use of DAC02 we need to install USB driver first and then insert the USB board with module into the computer. The data format of serial tool must be the same as the default data format of DRA818V/U in order to use the commands properly. If everything is ok, we can enable the OPEN button to open the corresponding COM port and start the testing of commands.

The handshake command AT+DMOCONNECT is the easiest to start with. We input the command into the textbox and click "send". The command and response will be showed in the display area. +DMOCONNECT:0 means the communication is successful.



Figure 3: Test the Handshake Command

Group Setting Command is used to set a group of parameters which can make the module work properly. There are two types of CSS codes: CTCSS and CDCSS. If users need to make DRA818U compatible with DRA808M, CTCSS is the only choice. We can verify the two types of codes through the tool.



Adv	vanced	Serial F	Port	Monitor	4.4.1 bui	ld 604						
File	View	Edit	Op	otions	Data sou	irce N	lode	Plugins	He	elp		
COM	l port	COM3 (:	s 🕶	Baud r	ate 960	0 🔻	Data	bits 8	۲	🖻 🔒	<i>i</i> 🖗	
Parity	y type	None	•	Stop bit	s 1 🔻	<u>A</u> uto de	elay 📃	500)			
-								 Se 	nd	() Cl <u>o</u> se	e	
T+DM	IOSET	GROUP=	0,1	52.125	0,152.	1250,0	012,4	1,0003	[16	n=46]		
-DMOS	SETGRO)UP:0	[le	n=14]								
LF>												
ASCII	1											•
noon	HEX	1										Þ
	HEX							2				•
Log t	[HEX to the f	file ▼ a	🧷 Cl	ear 🗐	-	-						•

Figure 4: Group Setting Command with CTCSS



Figure 5: Group Setting Command with CDCSS

The responses for the two commands show the parameters are set correctly. Users also can verify



other commands with the same method.

File V	iew	Edit	0	otions	Dat	ta sou	rce	Mode	Pl	ugins	Н	elp			
COM po	ort C	COM3 (3 •	Baud	rate	960)	▼ Da	ta bi	s 8	÷		3		
Parity ty	pe 1	None	•	Stop b	oits	1 🔻	Auto	delay []	500	A V				
									-	Se	nd	00	l <u>o</u> se		
T+DMOS DMOSET	<mark>ETGF</mark> GROU	R <mark>OUP=</mark> JP:0	0,1 [le	<mark>52.12</mark> n=14]	50,	152.3	1250	, 0012	, 4 , 1	003	[10	en=4)	6]		
T+DMOS DMOSET LF>	ETGF GROU	ROUP= JP:0	0,1 [le	52.12 n=14]	50,	152.3	1250,	, 754N	<u>, 4</u> , 4	451	[10	en=4)	6]		
<mark>T+DMOS</mark> DMOSET LF>	ETVO VOLU	DLUME JME : C	<mark>]=8</mark> [1	<mark>[len=</mark> en=15	17]]										
ASCII H	HEX														
Log to t	he fil	e •	2 C	ear 🔢		-									
		1.000		A 199 20 1992			Sr 1 1977				_	_	_	_	_

Figure 6: Set the Volume Command

Advanced Serial Port Monitor 4.4.1 build 604							
File View Edit Options Data source Mode Plugins Help							
COM port CDM3 (S 🔻 Baud rate 9600 🔹 Data bits 8 💌 🛤 📑 🥔 🗎							
Parity type None 🔻 Stop bits 1 💌 Auto delay 📃 500 🛫							
Send Send							
AT+DMOSETGROUP=0,152.1250,152.1250,0012,4,0003 [len=46] +DMOSETGROUP:0 [len=14] <lf></lf>							
AT+DMOSETGROUP=0,152.1250,152.1250,754N,4,445I [len=46] +DMOSETGROUP:0 [len=14] <lf></lf>							
AT+DMOSETVOLUME=8 [len=17] +DMOSETVOLUME:0 [len=15] <[IF>							
AT+SETFILTER=0,0,0 [len=18] +DMOSETFILTER:0 [len=15] <lf></lf>							
ASCII HEX							
Log to the file • 🖉 Clear 🔲 🚥 💷 💷							
COM is open Mode> Manual Source> String							

Figure 7: Set the SETFILTER Command

In most applications, the modules are controlled by MCU so users can get corresponding HEX data by clicking the HEX button at the left bottom of the tool and the tool interface will be



changed as figure. Application document **ADW1004** demonstrates the basic communication between DRA808M module and microcontroller. DRA808M has the same working mechanism as DRA818V/U except it has less parameters and commands so users can easily transform the codes in the document for DRA818V/U modules. For the same reason the testing method in this document also can be applied to DRA808M with minor changes on the command parameters.

COM port CDM3 (S 🔻 Baud rate 9600 🔹 Data bits 8 💌 📑 🎲 📄																	
'arity type None ▼ Stop bits 1 ▼ Auto delay 👘 500 🖕																	
✓ Send ⊗ Close																	
0x00	41	54	2B	44	4D	4F	53	45	54	47	52	4F	55	50	3D	30	AT+DMOSETGROUP=0
0x10	2C	31	35	32	2E	31	32	35	30	2C	31	35	32	2E	31	32	,152.1250,152.12
0x20	35	30	2C	30	30	31	32	2C	34	2C	30	30	30	33	OD	OA	50,0012,4,0003
0x30	2B	44	4D	4F	53	45	54	47	52	4F	55	50	ЗÀ	30	OD	ΟA	+DMOSETGROUP:0
0x40	41	54	2B	44	4D	4F	53	45	54	47	52	4F	55	50	3D	30	AT+DMOSETGROUP=0
0x50	2C	31	35	32	2E	31	32	35	30	2C	31	35	32	2E	31	32	,152.1250,152.12
0x60	35	30	2C	37	35	34	4E	2C	34	2C	34	34	35	49	OD	OA	50,754N,4,445I
0x70	2B	44	4D	4F	53	45	54	47	52	4F	55	50	ЗÀ	30	OD	ΟÀ	+DMOSETGROUP:0
0x80	41	54	2B	44	4D	4F	53	45	54	56	4F	4C	55	4D	45	3D	AT+DMOSETVOLUME=
0x90	38	OD	OÅ	2B	44	4D	4F	53	45	54	56	4F	4C	55	4D	45	8+DMOSETVOLUME
0xA0	ЗÀ	30	OD	ΟÀ	41	54	2B	53	45	54	46	49	4C	54	45	52	:0AT+SETFILTER
0xB0	3D	30	2C	30	2C	30	OD	OÅ	2B	44	4D	4F	53	45	54	46	=0,0,0+DMOSETF
	49	4C	54	45	52	34	30	OD	0Å								ILTER:0
COL																	
ASCII	EX															10d	0000 1010b 0120 0x

Figure 8: HEX Data of Corresponding Commands



	Dorji Industrial Group Co., Ltd reserves the right to
	make corrections, modifications, improvements and
	other changes to its products and services at any time
Dorji Applied Technologies	and to discontinue any product or service without
A division of Dorji Industrial Group Co., Ltd	notice. Customers are expected to visit websites for
	getting newest product information before placing
Add.: Xinchenhuayuan 2, Dalangnanlu, Longhua,	orders.
Baoan district, Shenzhen, China 518109	
Tel: 0086-755-28156122	These products are not designed for use in life support
Fax.: 0086-755-28156133	appliances, devices or other products where
Email: sales@dorji.com	malfunction of these products might result in personal
Web: http://www.dorji.com	injury. Customers using these products in such
	applications do so at their own risk and agree to fully
	indemnify Dorji Industrial Group for any damages
	resulting from improper use.

_