Bluetooth module BK3266 manual

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1. BK3266

Figure 1.1 BK3266 Promotional image

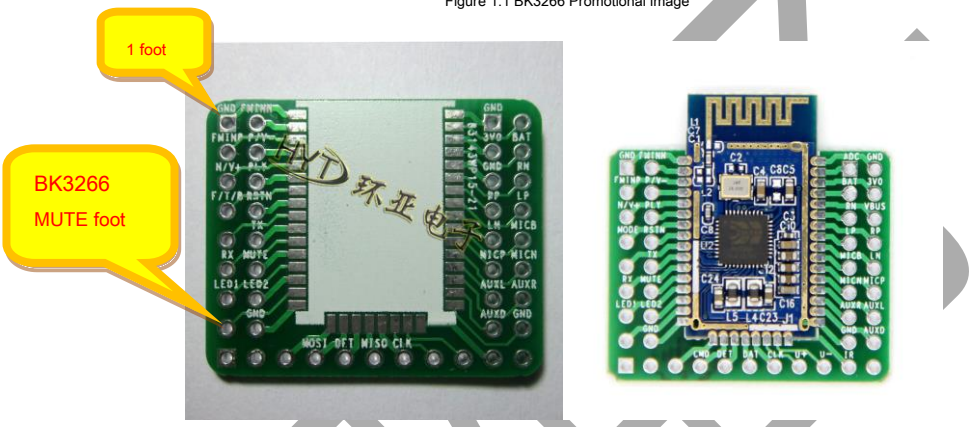

Figure 1.2 BK3266 Adapter board (2.4x3.1cm)

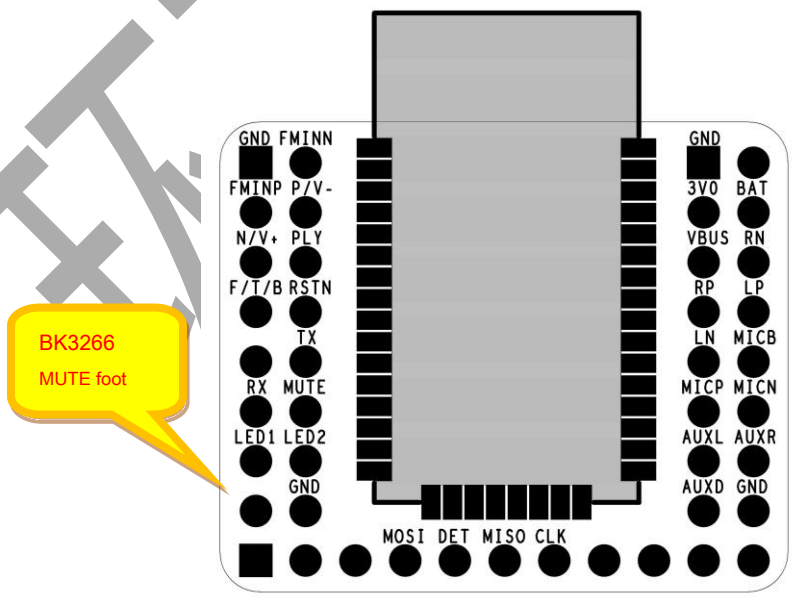

Figure 1.3 BK3266 Pin definition

1.1 Module introduction

This module master uses Beken (Broadcom) BK3266 The chip provides high-quality sound quality and compatibility for the module, The overall performance is better. The Bluetooth module adopts a driver-free mode, and customers only need to connect the module to the application product, and they can quickly Realize the wireless transmission of music, enjoy the fun of wireless music, Support buttons and AT Serial command control. Support wisdom Neutral voice prompt; integrated SD/TF Play, support MP3/WMA/WAV Music format; support U Disc play, support Hold internal LINE-IN , Support driver RGB The lights dance with the music, support " MODE "Key switch machine. Can be stored 6 When the module is powered on, it will automatically connect back to the last paired device. in case 6 When two paired devices are turned on at the same time, then automatically connect Last paired device .

stand by AT Modify Bluetooth name , 16 Within characters, see AT Instructions. stand by AT Modify Bluetooth pairing password (function optional) , 16 Within characters, see AT Instructions.

1.2 Application field

This module is mainly used for short-distance music transmission, which can be conveniently used with laptops, mobile phones, PDA Other digital products The Bluetooth device of the product is connected to realize the wireless transmission of music.

1) Stereo Bluetooth speakers;

2) Stereo Bluetooth headset;

3) Bluetooth call;

4) Bluetooth control and multimedia equipment.

1.3 **Basic characteristics**

1) Bluetooth v5.0 + EDR ;
2) A2DP v1.2 ;
3) AVRCP v1.5 ;
4) HFP v1.7 ;
5) AVDTP v1.2 ;
6) AVCTP v1.4 ;

1.4 **Performance parameter**

model	BK3266
Bluetooth specifications	Bluetooth V5.0
Supply voltage	DC3.3-4.2V
Support Bluetooth protocol	HFPV1.7 , A2DPV1.2 , AVRCPV1.5 , AVCTPV1.2 , AVDTPV1.2
Working current	≤ 20mA
stand-by current	<500uA
temperature range	-40ºC ~ +80ºC
Wireless transmission range	> 10 Meter
Transmission power	Class2 , 4dbm
Sensitivity	-81dBm<0.1%BER
Frequency Range	2.402GHz~2.480GHz
External Interface	Serial port (TTL Level), and PC Connection requires level conversion, such as CH340G , USB turn TTL
Audio performance	SBC decoding
Audio signal to noise ratio	≥ 75dB
Module size	25x13.5x2mm
Adapter board size	24x29mm

1.5 **Module size**

Pad size: 1.6x0.8mm

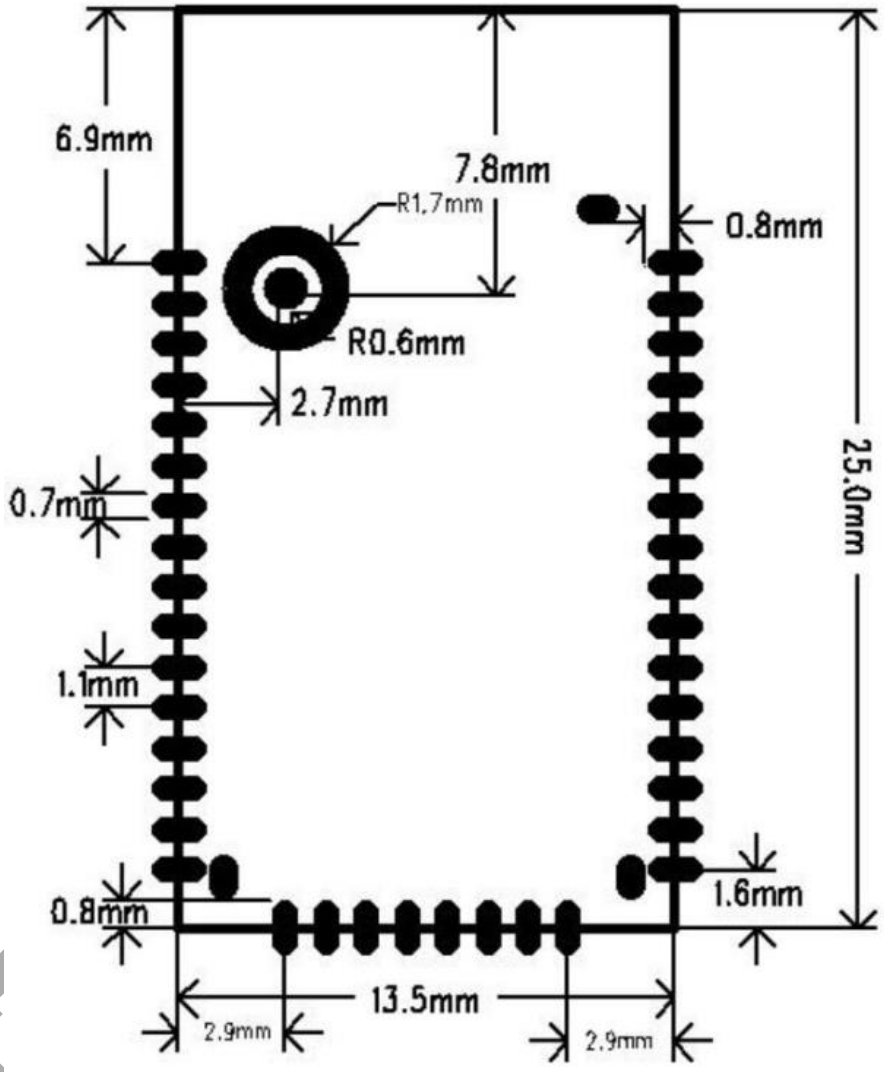

Figure 1.4 BK3266 Dimensions

1.6 **IO definition**

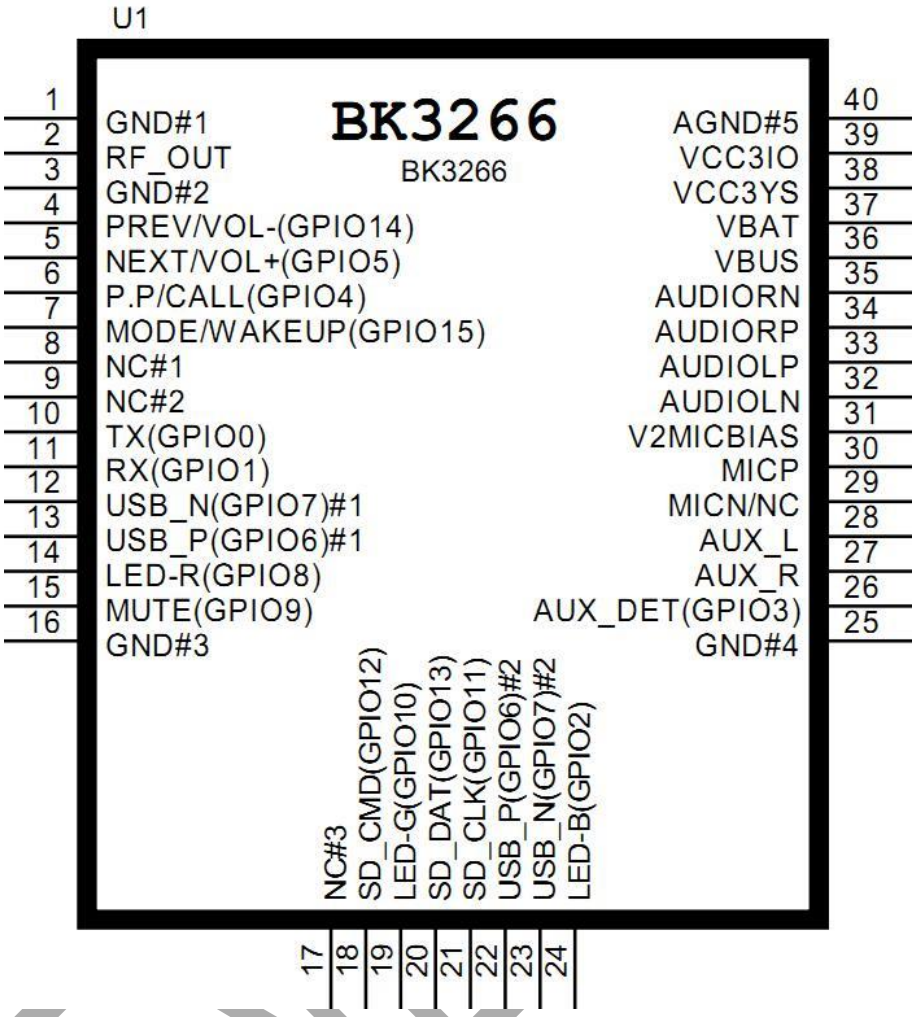

Figure 1.5 BK3266 Pin definition

IO Numbering	IO name	IO description
1	GND	Power ground
2	RF	Unused
3	GND	Power ground
4	PREV/VOL-(GPIO14)	Click the previous song/long press the volume down
5	NEXT/VOL+(GPIO5)	Click next song/long press volume up
6	PP/CALL(GPIO4)	Play/Pause/Hang up/Call back/Re-pair
7	CHG_MODE(GPIO15)	BT/TF/U plate/ AUX Mode switch Press 6S Turn off, short press to turn on Power on
8	NC	Empty feet
9	NC	Empty feet
10	TX(GPIO0)	Serial port TX (TTL Level 3.3V)
11	RX(GPIO1)	Serial port RX (TTL Level 3.3V)
12	USB_DN(GPIO7)	USB positive
13	USB_DP(GPIO6)	USB negative
14	LED (GPIO8)	Status Indicator
15	MUTE(GPIO9)	Control power amplifier enable pin High sound output 3.3V , No sound output is low 0V
16	GND	Power ground
17	NC	Empty feet
18	SPI_CMD(GPIO12)	SD/TF of SPI interface
19	GPIO10	Bluetooth connection successfully outputs low level Bluetooth disconnection output high level
20	SPI_SDO(GPIO13)	SD/TF of SPI interface
twenty one	SPI_CLK(GPIO11)	SD/TF of SPI Clock line simultaneously TF Insertion detection
twenty two	USB_DP(GPIO6)	USB positive
twenty three	USB_DN(GPIO7)	USB negative
twenty four	IR(GPIO2)	Infrared remote control driver IO
25	GND	Power ground
26	AUX_DET(GPIO3)	AUX Insertion detection (Default high level, low level effective)
27	AUX_R	AUX Right channel input
28	AUX_L	AUX Left channel input
29	NC	Empty feet
30	MICIP	MIC Input positive
31	VMIC	MIC Bias voltage
32	AUDIOLN	Audio left channel differential output negative terminal
33	AUDIOLP	Audio left channel differential output positive terminal
34	AUDIORP	Audio right channel differential output positive terminal
35	AUDIORN	Audio right channel differential output negative terminal
36	VBUS	Unused
37	VBAT	power input(3.3V~4.2V)
38	VCC3YS	3V Output, SD/TF power supply
39	VDD3IO	3V Output, power supply interface (" MODE "No voltage output after shutdown)
40	AGND	When single-ended audio output, Must be separately connected to the ground at the end of the power amplifier to remove noise. When differential audio output, it can be left floating

1.7 **Precautions**

1. In the process of module application, please pay attention to avoid the influence of interference sources such as power amplifier and booster line on the module, and avoid the
   The electric circuit forms a series circuit with the high-power circuit unit to improve the whole machine SNR .
2. Regarding the use environment of wireless Bluetooth, wireless signals including Bluetooth applications are greatly affected by the surrounding environment, such as trees.
   Obstacles such as wood and metal will absorb the wireless signal to a certain extent, so in practical applications, the distance of data transmission
   Li is affected to a certain extent.
3. Because the Bluetooth module must be matched with the existing system and placed in the housing. Because the metal shell is
   There is a shielding effect. Therefore, it is not recommended to install in a metal enclosure.
4. PCB Layout: The antenna part of the Bluetooth module is PCB Antenna, because metal will weaken the function of the antenna, in
   When laying out the module, it is strictly forbidden to lay the ground and wire under the module antenna, if it can be hollowed out.

1.8 AT instruction

1.8.1 Serial port configuration

1. Baud rate 9600 ;
2. 8 Bit data bit
3. No parity bit;
4. One stop bit.

1.8.2 Instruction format

Control instruction format: COM+<CMD>[<param>]\r\n

Data feedback format: < IND>[<param>]\n

Description: The control command is the control command given to the Bluetooth by the control host, with " COM+ "Start immediately followed by < CMD> control If the instruction has parameters, it will continue to transmit immediately after the instruction< param> Parameters, and end with "\ r\n "End.

Data feedback is the Bluetooth feedback of various status and data information to the host, IND> Is a feedback command, if you need to take parameters Number, then follow < IND> Continue transmission afterwards< param> parameter.

note:

- \r\n : The character type is **Line feed (keyboard "Enter" key)** , The hexadecimal is **0x0D , 0x0A** .

1.8.3 Serial port demo

As shown 1.6 Shown:

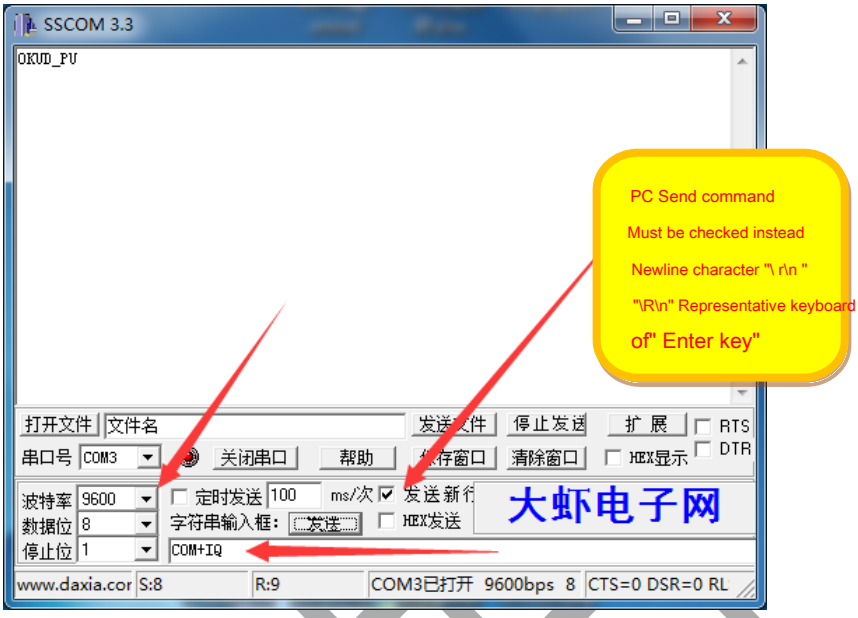

Figure 1.6 Serial port open

1.8.4 **Control instruction list**

Serial command	Parameter Description	Command function description	For example
+ SNAME+	For example: COM+SNAME+BTBLUE\r\n "\ r\n Represents carriage return and line feed, debugging assistance Input in hand (Enter key)" BTBLUE Is the modified name	Modify Bluetooth name	COM+SNAME+XXXX\r\n XXXX :most 16 Characters correct: OK\n error: ERR\n Take effect after power off and restart
+ SPIN+	For example: COM+SPIN+12345678\r\n "\ r\n Represents carriage return and line feed, debugging assistance Input in hand (Enter key)" 12345678 Is the modified password	Modify Bluetooth pairing password code (Function optional)	COM+SPIN+XXXX\r\n XXXX :maximum 16 Characters correct: OK\n error: ERR\n Effective immediately
TONExx	xx : " ON "Turn on the sound xx : " OFF "Turn off the beep Support power-down save Turn on by default	Prompt sound setting	COM+TONEON\r\n Turn on sound COM+TONEOFF\r\n Turn off the beep Effective immediately
MTONE		Query alert tone settings	COM+MTONE\r\n Turn on: TOMEON\n shut down: TOMEOFF\n
GOBACKxx	xx : " ON "Open back to connect xx : " OFF "Close back to connect Support power-down save Power-on connection is enabled by default	Power-on connection setting	COM+GOBACKON\r\n Turn on power-on connection COM+GOBACKOFF\r\n Turn off power-on connection Effective immediately
MGOBACK		Query back connection settings	COM+MGOBACK\r\n Turn on: GOBACKON\n shut down: GOBACKOFF\n
CALLxx	xx : " ON "Turn on call xx : " OFF "Turn off call Support power-down save The call function is enabled by default	Call function settings	COM+CALLON\r\n Turn on the call function COM+GOBACKOFF\r\n Turn off the call function Power off restart to take effect
MCALL		Query call settings	COM+MCALL\r\n Turn on: CALLON\n shut down: CALLOFF\n
MP3AUTOPLYxx	U plate/ TF In mode: xx : " ON "Turn on autoplay xx : " OFF "Turn off autoplay Support power-down save Auto play is enabled by default	Autoplay settings	COM+MP3AUTOPLYON\r\n Turn on autoplay COM+MP3AUTOPLYOFF\r\n Turn off autoplay Effective immediately
MP3AUTOPLY		Query auto play Set up	COM+MP3AUTOPLY\r\n Turn on: MP3AUTOPLYON\n shut down: MP3AUTOPLYOFF\n
MEQ		Inquire EQ	NORMAL\n BOOST\n TREBLE\n POP\n ROCK\n

			CLASSIC\n JAZZ\n DANCE\n R&P\n
SETEQxx	xx : NORMAL BOOST\ TREBLE POP ROCK CLASSIC JAZZ DANCE R&P Support power-down save default" NORMAL "	EQ Set up	COM+SETEQNORMAL\r\ n correct: OK\n error: ERR\n Effective immediately
OT	For example: 0015 : Total 15 First song 0001 : Currently playing 1 First song 0328 :play time 3 Minute 28 second	Turn on printing song letter correctly: interest	COM+GN\r\n MUSIC:001500010328\n error: ERR\n
CT	Print song information is off by default	Turn off printing song letters interest	COM+CT\r\n correct: OK\n error: ERR\n
GN	xxxxxxxx : Song name, max 8 Characters, more than 8 Characters, Use "~ 1 "instead	Get the current song broadcast Put name	COM+GN\r\n correct: xxxxxxxx\n error: ERR\n
PR		Enter pairing	BT+PR\r\n
AC		Connect the last paired device Prepare	BT+AC\r\n
DC		Disconnect	BT+DC\r\n
CA		Answer the call	BT+CA\r\n
CJ		Reject call	BT+CJ\r\n
CE		Hang up the phone	BT+CE\r\n
CR		Last number redial	BT+CR\r\n
PP		Music play/pause	COM+PP\r\n
PA		play music	COM+PA\r\n
PU		Music pause	COM+PU\r\n
PN		next track	COM+PN\r\n
PV		previous piece	COM+PV\r\n
VP		Volume up	COM+VP\r\n
VD		Volume down	COM+VD\r\n
SETTSxx	xx :(00-16) Serial port settings Support power-down save	Set the prompt sound volume	COM+SETTSxx\r\n to be correct: OK\n error: ERR\n
MTS	x :(0-16)	Query the current prompt tone volume	COM+MTS\r\n correct: TSx\n error: ERR\n
Vxx	xx :(00-16) Button, serial port settings Support power-down save	Set volume	COM+Vxx\r\n correct: COM_Vxx\n error: ERR\n
GV	xx :(00-16)	Query current volume	COM+GV\r\n correct: COM_Vxx\n

			error: ERR\n
PWDS		Soft shutdown	COM+PWDS\r\n
PWOS		Soft boot	COM+PWOS\r\n
REBOOT	This restart is equivalent to restart after power failure	Reboot	COM+REBOOT\r\n
MC		Switch to the next job mode	COM+MC\r\n
MBT		Bluetooth mode	COM+MBT\r\n
MSD		TF Mode (if any effect)	COM+MSD\r\n
MAX		AUX Mode (if effective)	COM+MAX\r\n
MUD		U Disk mode (if effective)	COM+MUD\r\n
IQ		Query current mode and status	COM+IQ\r\n
SMA	Default playback mode SMA	Loop all (TF/U Disk mode under)	COM+SMA\r\n correct: COM_SMA\n error: ERR\n
SMO		Single loop playback (TF/U Disk mode under)	COM+SMO\r\n correct: COM_SMO\n error: ERR\n
SMNO		Single song does not loop (TF/U Disk mode under)	COM+SMNO\r\n correct: COM_SMNO\n error: ERR\n
SMR		Shuffle Playback (TF/U Disk mode under)	COM+SMR\r\n correct: COM_SMR\n error: ERR\n
GSM		Query current MP3 Play mode (TF/U Disk mode under)	COM+GSM\r\n All cycles: COM_SMA\n Single cycle: COM_SMO\n Singles do not loop: COM_SMNO\n Shuffle Playback: COM_SMR\n
SMPxxxx	xxxx :(0001-9999) (" 0001 "On behalf of the 1 first)	Play selection (TF/U Disk mode under)	COM+SMP0040\r\n
MRMP3	x :(1-9999)	Query currently playing MP3 Song number (TF Mode)	COM+MRMP3\r\n correct: music_mun=x\n error: ERR\n
MMMP3	x :(1-9999)	Query current mode MP3 Number of songs (TF/U Disk mode under)	COM+MMMP3\r\n correct: MMMPx\n error: ERR\n
MRUSB	x :(1-9999)	Query currently playing U Disc song number (U Disk mode) error: ERR\n	COM+MRUSB\r\n correct: music_mun=x\n

1.8.5 **Query/feedback instruction**

Serial command	description	For example	Bluetooth return information
GAD	Query Bluetooth address	BT+GAD\r\n	AD_191919191919\n
GNM	Query Bluetooth name	BT+GNM\r\n	NA_BK3266\n
GPI	Query Bluetooth password	BT+GPI\r\n	PN_1234\n
The following is the status sent by Bluetooth actively			
Serial command	description	description	Bluetooth return information
EER	error		EER\n
OK	Control command recognition completed		OK\n
COM_SMA	Loop all (TF/U Disk mode)		COM_SMA\n
COM_SMO	Single loop play (TF/U Disk mode)		COM_SMO\n
COM_SMNO	Single song does not loop (TF/U Disk mode)		COM_SMNO\n
COM_SMR	Shuffle Playback(TF/U Disk mode)		COM_SMR\n
COM_Vxx	Current volume xx level		COM_Vxx\n xx Representative volume level
MP3	Switch every time MP3 Song, automatically return the song number		music_mun=1\n
USB	Switch every time U Disc song, automatically return the song number		music_mun=1\n
IRx	(TF/U Disk mode) Each time you press the number button of the infrared remote control, it will automatically return to the button value		IRx\n x Represents the number keys
MUSICPLYFINISH	(TF/U In disc mode) automatically after playing a song Spit out		MUSICPLYFINISH\n
SY_PO		Bluetooth boot	SY_PO\n
SY_PF		Bluetooth off	SY_PF\n
BT_AC		Currently in Bluetooth mode, blue Tooth is connecting back	BT_AC\n
BT_WP		Currently in Bluetooth mode, blue Teeth are in pairing state	BT_WP\n
BT_WC		Currently in Bluetooth mode, blue Tooth is waiting for connection	BT_WC\n
BT_CN		Currently in Bluetooth mode, blue Tooth is connected	BT_CN\n
BT_PA		Currently in Bluetooth mode, blue Tooth is playing	BT_PA\n
BT_IC		Currently in Bluetooth mode, blue Ya got a call	BT_IC\n
BT_OC		Currently in Bluetooth mode, blue Ya has a phone call	BT_OC\n
BT_EC		Currently in Bluetooth mode, blue Ya is on the phone	BT_EC\n
SD_PA		Currently is SD Card mode, SD The card is playing	SD_PA\n
SD_PU		Currently is SD Card mode, SD Card is suspended	SD_PU\n
UD_PA		Currently is U Disk mode, U Disk is playing	UD_PA\n
UD_PU		Currently is U Disk mode, U Disk is suspended	UD_PU\n
AX_PA		Currently is AUX mode,	AX_PA\n

		AUX Now playing Currently is AUX mode, AUX Suspended	
AX_PU			AX_PU\n