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美格信U 985指令集

MegaSig U 985 CMD

指令集-中文 1
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从此文件发布日期起，在此发表的是当前或者拟定的信息。由于我们会不断对产品进行改进和增加特征此出版物中的信息如有变动恕不另行通知。

From the date of this document's release, the information published here is current or proposed. As we will continuously improve and add features to our products, the information in this publication is subject to change without further notice.

串口通讯参数

串口通讯参数	
波特率	230400（USB Serial Port）
数据位	8
校验位	None
停止位	1.0
流量控制	Hardware
终止符	\n

串口指令

（注：下表中‘\s’代表空格，Hex 为 20，‘\r\n’代表回车换行，Hex 为 0D0A）

名称	发送	反馈	备注
通过蓝牙地址码连接被测物	>SD:Connect=1_28371317B0E4\r\n	Connected Device Address: 28371317B0	Connected Device Address: 28371317B0
断开连接	>SD:Disconnect	Disconnected, reason 22	断开连接 22 为正常断开连接
搜索 BLE 地址	>SD:Scan_Start	Advertising Report:Device Address:50d9d716e3d1, Addr Type: 0x2, Addr ID Peer: x0, Device Rssi: -75	搜索返回设备地址码和地址类型和地址 ID
停止搜索	>SD:Scan_Stop	GAP Scan Stop OK	
获取连接地址	>SD:Get_Addr	Address: 28371317B0	获取连接 BLE 地址
更新 MTU 大小	>SD:Update_MTU=247	GATTC MTU Request OK	
更新 PHY 层设置	>SD:Update_PHY=0_0	GATTC PHY Update OK	0 = Auto 1 = 1Mbps 2 = 2Mbps 4 = Coded PHY FF = NOT SET
启动通知	>SD:Enable_Notify=0x1b	Received write response.	0x1b 为通知句柄，通常为特征句柄+1
连接设备后发现设备的主要服务	>SD:Service_Discovery	Service Info: Service UUID = 0x1800, Service UUID Type = 0x01, Service Start Handle = 0x0001, Service End Handle = 0x0009	返回服务的 16 位 UUID， UUID 类型，服务的句柄范围

名称	发送	反馈	备注
发现主服务后发现特征	>SD:Char_Discovery=0x001 7_0x001e	Characteristic Info: Char Handle = 0x001C, Char UUID = 0x0000, Char Props = 0x14	=开始句柄_结束句柄指令中 0x0017_0x001e 代表发现 0x0017 句柄到 0x001e 句柄范围内的特征
获取 GATT 客户端特征属性信息	>SD:Gattc_Attr_Info_Get=0x00b9_0x00b9	Attr Info: Attr0 Format = 2, Handle = 0x001C, UUID = A3D92DA2-9503-45B7-7BF2-05CEA2CF6285	查看 128bit 特征 UUID
获取 GATT 客户端服务属性信息	>SD:Gattc_Service_Info_Get=0x00B7	Service Info: Service Handle = 0xA100, UUID = 524F4F54-9000-0080-0010-000000010001	查看 128bit 服务 UUID
读取连接到的设备的特征值设置	>SD:Gattc_Read=0x19	Read Handle = 0x0019, Read Data Length = 8, Read Data = 輴*?	=特征句柄 0x19 为需要读取特征的句柄返回 data
设置连接到的设备的特征值设置	>SD:Gattc_Write=0x1b_1_3_123	Write response = 0x \n	=特征句柄_写入选项_数据长度_数据,写入选项一般为 1.我们会根据数据长度判断是 16 进制还是字符型数据
广播信息初始化	>SD:Advertising_Init=16_3_25_18000_123	Advertising OK	=AdvType_AdvDataLen_I nterval_duration(ms)_AdvData
启动广播	>SD:Advertising_Start	Advertising Start OK	在广播的过程中如果被连接上后会自动停止广播
停止广播	>SD:Advertising_Stop	GAP Advertising Stop OK	
增加 dongle 本身的服务	>SD:Gatts_Service_Add=0x2017	Service Add OK Service Handle: 0x000b	=服务 UUID 返回增加的服务的句柄和连接到的设备的句柄是隔离的

名称	发送	反馈	备注
增加 dongle 本身的特征	>SD:Gatts_Char_Add=0x000 b_0x2018_10_1_1_0_0_1_1_0_	Charecteristic Add OK Charecteristic Handle: 0x000d, CCCD Handle: 0x0000, SCCD Handle: 0x0000, User Desc Handle: 0x000f	=ServiceHanlde_CharUUID_CharProperty_ReadPerm_WritePerm_RdAuth_WrAuth_ExReliableWr_ExWrAux_ChanNameSize_C harName CharProperty:特征属性是由二进制组成的例如本文中的 10 就是 00001010 对应的就是读写属性 第一位: 补 0 无意义 第二位: 允许使用 Signed Write Command 写入值。 第三位: 指示属性 第四位: 通知属性 第五位: 写属性(请求) 第六位: 写属性(指令) 第七位: 读属性 第八位: 广播属性
自身特征值设置	>SD:Gatts_Value_Set=0x000d	GATTS Value Set OK	0x000d 为特征句柄
获取自身特征值	>SD:Gatts_Value_Get	Handle:0x1b, Value Length: 3,Value Offset: 0, Value:123 \r\n	
重启设备	>SD:Reset		
设置 dongle 发射功率	>SD:Set_Tx_Power=0	GATTC Set TX Power OK, Tx Power = 0	TX power: +8, +4, 0, -4, -8, -12, -16, -20, -40. 以上为发射功率的取值范围

GATTC 写入透传指令	>SD:Gattc_Pass_Through =0x3b	OPEN Pass-Through or CLOSE Pass-Through	0x3b 为特征句柄 handle，设置 0x0 则代表关闭透传。设置透传之后，我需要往某个特征里面写数据，则直接通过串口可以写数据，串口发什么数据，这边就往这个特征写什么数据。 Dongle 重启之后就可关闭
获取 dongle 与设备之间的 RSSI 值	>SD:Get_Rssi	Rssi Start Read Rssi = -33	

Serial Communication Parameters

Serial communication parameters	
Baud Rate	230400
Data Bits	8
Parity	None
Stop Bits	1
Flow Control	Hardware
Termination Char	\n

Serial Port Commands

(Note: In the table below, '\s' represents a space, with Hex value 20, and '\r\n' represents a carriage return and line feed, with Hex value 0D0A)

Item	Send	Receive	Note
Connect to the device under test via Bluetooth address code	>SD:Connect=1_28371317B0E4\r\n	Connected Device Address: 28371317B0	Connected Device Address: 28371317B0
Disconnect	>SD:Disconnect	Disconnected, reason 22	Disconnecting 22 is a normal disconnection
Scan for BLE address	>SD:Scan_Start	Advertising Report:Device Address:50d9d716e3d1, Addr Type: 0x2, Addr ID Peer: x0, Device Rssi: -75	scan returns the device address code, address type, and address ID
Scan stop	>SD:Scan_Stop	GAP Scan Stop OK	
Get connection address	>SD:Get_Addr	Address: 28371317B0	Get connection BLE address
Update MTU size	>SD:Update_MTU=247	GATTC MTU Request OK	
Update PHY layer settings	>SD:Update_PHY=0_0	GATTC PHY Update OK	0 = Auto 1 = 1Mbps 2 = 2Mbps 4 = Coded PHY FF = NOT SET
Enable notify	>SD:Enable_Notify=0x1b	Received write response.	0x1b is the notification handle, typically the feature handle plus one
After connecting the device, the main services of the device are discovered	>SD:Service_Discovery	Service Info: Service UUID = 0x1800, Service UUID Type = 0x01, Service Start Handle = 0x0001, Service End Handle = 0x0009	Return the 16-bit UUID of the service, the type of UUID, and the handle range of the service

Item	Send	Receive	Note
After discovering the main service, the feature is found	>SD:Char_Discovery=0x001 7_0x001e	Characteristic Info: Char Handle = 0x001C, Char UUID = 0x0000, Char Props = 0x14	In the Start Handle_End Handle instruction, 0x0017_0x001e represents the discovery of features within the range from handle 0x0017 to handle 0x001e
Get GATT client characteristic attribute information	>SD:Gattc_Attr_Info_Get=0x00b9_0x00b9	Attr Info: Attr0 Format = 2, Handle = 0x001C, UUID = A3D92DA2-9503-45B7-7BF2-05CEA2CF6285	View 128-bit feature UUID
Get GATT client service attribute information	>SD:Gattc_Service_Info_Get=0x00B7	Service Info: Service Handle = 0xA100, UUID = 524F4F54-9000-0080-0010-000000010001	View 128bit service UUID
Read the feature value settings of the connected device	>SD:Gattc_Read=0x19	Read Handle = 0x0019, Read Data Length = 8, Read Data = 輴*?	=Feature handle 0x19 returns data for the handle that needs to read features
Set the feature values of the device to which the connection is made	>SD:Gattc_Write=0x1b_1_3_123	Write response = 0x \n	=Feature handle_Write option_Data length_Data. The write option is generally set to 1. We will determine whether the data is in hexadecimal or character format based on its length
Advertising information initialization	>SD:Advertising_Init=16_3_25_18000_123	Advertising OK	=AdvType_AdvDataLen_I nterval_duration(ms)_AdvData
Start advertising	>SD:Advertising_Start	Advertising Start OK	If a connection is established during the advertising, the advertising will automatically stop
Stop broadcasting	>SD:Advertising_Stop	GAP Advertising Stop OK	
Enhance the service of the dongle itself	>SD:Gatts_Service_Add=0x2017	Service Add OK Service Handle: 0x000b	The service UUID returned indicates that the handle of the added service is isolated from the handle of the connected device

Item	Send	Receive	Note
Enhance the inherent features of the dongle	>SD:Gatts_Char_Add=0x000b_0x2018_10_1_1_0_0_1_1_0_	Charecteristic Add OK Charecteristic Handle: 0x000d, CCCD Handle: 0x0000, SCCD Handle: 0x0000, User Desc Handle: 0x000f	=ServiceHanlde_CharUUID_CharProperty_ReadPerm_WritePerm_RdAuth_WrAuth_ExReliableWr_ExWrAux_ChanNameSize_C harName CharProperty: Characteristic property is composed of binary digits. For example, in this context, 10 is represented as 00001010, which corresponds to the read-write attribute The first one: adding 0 is meaningless Second: Allow the use of Signed Write Command to write values. Third: Indication attribute Fourth: Notification attributes The fifth: Write attributes (request) Sixth: Write attributes (instructions) Seventh: Read attributes 8th: Broadcast attribute
Set own feature values	>SD:Gatts_Value_Set=0x000d	GATTS Value Set OK	0x000d is the feature handle
Get one's own characteristic values	>SD:Gatts_Value_Get	Handle:0x1b, Value Length: 3,Value Offset: 0, Value:123 \r\n	
Restart the device	>SD:Reset		
Set dongle transmission power	>SD:Set_Tx_Power=0	GATTC Set TX Power OK, Tx Power = 0	TX power: +8, +4, 0, -4, -8, -12, -16, -20, -40. The above values represent the range of transmission power

Item	Send	Receive	Note
GATTC writes transparent transmission instructions	>SD:Gattc_Pass_Throug h=0x3b	OPEN Pass-Through or CLOSE Pass-Through	0x3b is the feature handle. Setting it to 0x0 means to disable transparent transmission. After enabling transparent transmission, if I need to write data to a certain feature, I can directly write data through the serial port. Whatever data is sent through the serial port will be written to this feature. The dongle can be turned off after it is restarted.
Get the RSSI value between the dongle and the device	>SD:Get_Rssi	Rssi Start Read Rssi = -33	