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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **DATA BYTES** | | | | | |  |  |  |
| **Byte** | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| **Value** | 7F | FF | 06 |  | 00 |  |  |  |  | EF |
| **Description** | Start byte | Version | Lenght | Command | Feedback | Parameter  High byte | Parameter  Low byte | Checksum  High byte | Checksum  Low byte | End byte |

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| --- | --- |
| Byte 0 | Start byte. MUST be 7F |
| Byte 1 | Version. Tipically FF |
| Byte 2 | Packet lenght. Only the data bytes. Tipically 06 |
| Byte 3 | Command code |
| Byte 4 | Feedback. Could be 00 (no feedback) or 01 (feedback). |
| Byte 5-6 | Parameter. For example, the song number |
| Bytes 7-8 | 16 bit-checksum calculated only with data bytes. Sum all bytes and negate it |
| Byte 9 | End byte. MUST be EF |

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| Command Code | Description | Parameter (16 bit) |
| 0x01 | Next track |  |
| 0x02 | Previous track |  |
| 0x03 | Play a track. The parameter provided identify the track index inside the whole storage. | 1-2999 |
| 0x04 | Volume up |  |
| 0x05 | Volume down |  |
| 0x06 | Set volume. The parameter provided set the volume to that value | 0-30 |
| 0x07 | Equalizer preset | 0 – Normal  1 – Pop  2 – Rock  3 – Jazz  4 – Classic  5 – Bass |
| 0x08 | Play a track in loop mode. The parameter provided identify the track index inside the whole storage. | 1-2999 |
| 0x09 | Playback source storage. Default is SD | 1 – USB Disk  2 – SD Card  3 – AUX  4 – FLASH  5 – PC  6 – Sleep |
| 0x0A | Start sleep mode |  |
| 0x0B | Reserved |  |
| 0x0C | Reset module |  |
| 0x0D | Resume a previous paused track |  |
| 0x0F | Play a track in a folder | High byte (decimal)  0 – 99: folder index  low byte (decimal)  0 – 255: track index |
| 0x10 | Set gain + mute | High byte  0 – mute  1 – enable audio  Low byte  0-31 |
| 0x11 | Set playback loop.  With this command, all the track will be played in loop | 0 – Stop loop playback  1 – Loop playback |
| 0x12 | Play a track inside a folder named “**MP3**”. The parameter provided identify the track index inside the folder. | 0-9999 |
| 0x13 | Play a track in advertise mode: if a track is playing while this command is executed:   * the playing track is paused * the advertise track is played * when the advertise track comes to end, the paused track is resumed   The parameter provided identify the track index inside the folder “**ADVERT**”  If there is no track playing, this command fire and error | 0-9999 |
| 0x14 | Play a track in a selected folder | Higher 4 bits  1 – 15: folder index  Lower 12 bits  1 – 4095: track index |
| 0x15 | Stop an advertise track and return playing the background track |  |
| 0x16 | Stop playing track (advertise and / or background track) |  |
| 0x17 | Loop play a folder. The parameter identify the folder index | 1-99 |
| 0x18 | Shuffle playback. Play random tracks. | 2 (???) |
| 0x19 | Set loop mode for the current track  The track MUST be in a play state. | 0 – Loop  1 – NO loop |
| 0x1A | Turn on/off the DAC. If a track is in a play state, after the DAC is turned off, the track is still in play state | 0 – DAC on  1 – DAC off (high impedance) |

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| Query Code | Description | Parameter (16 bit) |
| 0x3A | This packet is sent when a storage device is connected.  It can contain more than one device. | 0001 – USB disk connected  0002 – SD Card connected  0004 – PC connected |
| 0x3B | This packet is sent when a storage device is disconnected.  It can contain more than one device. | 0001 – USB Disk disconnected  0002 – SD Card disconnected  0004 – PC disconnected |
| 0x3C | During playback, this packet is sent when a USB Disk track ends. | The track number |
| 0x3D | During playback, this packet is sent when a SD card track ends. | The track number |
| 0x3E | During playback, this packet is sent when a FLASH track ends. | The track number |
| 0x3F | Enumerate all the storage devices connected.  It can contain more than one device.  This packet is sent when power on . | 0001 – USB Disk  0002 – SD card  0004 – PC  0008 – FLASH |
| 0x40 | This packet is sent when a error occurred. | 0001 – Busy (FS initialization)  0002 – Sleep mode error  0003 – Serial port error  0004 – Checksum error  0005 – File index out of range  0006 – File not found  0008 – Advertising not allowed |
| 0x41 | Command accepted (when feedback is enabled) |  |
| 0x42 | Query current status | 0000 – Stop  0001 – Playing  0002 – Paused  0008 – Sleep |
| 0x43 | Query current volume |  |
| 0x44 | Query current equalizer preset |  |
| 0x45 | Query current play mode |  |
| 0x46 | Query current software version |  |
| 0x47 | Query the total number of files in the USB Disk |  |
| 0x48 | Query the total number of files in the SD card |  |
| 0x49 | Query the total number of files in the FLASH memory |  |
| 0x4A | Reserved |  |
| 0x4B | Query the current track in the USB Disk |  |
| 0x4C | Query the current track in the SD card |  |
| 0x4D | Query the current track in the FLASH memory |  |