

OmniStream 311 and 324 USB Extenders

Application Programming Interface

Version Information

Version	Release Date	Notes
1	04/18	Initial Release

Table of Contents

Introduction	4
Commands	5
Queries	5
Pairing	5
Network	5
Utility	5

Introduction

This document provides a listing of API commands for the OmniStream 311 and OmniStream 324 USB extenders. The packet structure for each command is transmitted and received in hexadecimal format using the UDP network protocol. Both the OmniStream 311 and 324 will listen on UDP port 6137 for all incoming messages. All replies will be returned to UDP port from which the command was received.

To send a broadcast command, the packet must be sent to the network broadcast address. For example, the network 10.0.1.xxx/24 has a broadcast address of 10.0.1.255.



NOTE: Routers will prevent broadcast packets from exiting the source network. Therefore, OmniStream 311 and OmniStream 324 devices must be on the same network for the broadcast packets to be received.

Packet Structure

All commands are preceded by 0x02F03F4A2 plus a four-byte message ID. An example message ID would be 0x00000003. The message ID is used as an identifier and will be inserted into the message response. This allows the control system to keep track of both the owner of the sent message and which response goes with which message.

The following illustrates an example of the Query Response command:

Example:

0x2F03F4A2000000030001

0x2F03F4A2	00000003	0001
		
Required value	Message ID	Command

Value	Description
0x2F03F4A2	Constant. This four-byte value identifies the command as an OmniStream USB command.
ID	Used to keep track of the message owner and the identifier for the responding device. This value must be four bytes in length.
Command	This two-byte value represents the command.

Returns:

```

2F 03 F4 A2 00 00 00 03 00 00 2F 03 F4 A2 00 00 00 03 00 01 00 1B 13 02 81 E0 0A 00 01
77 00 03 41 74 6C 6F 6E 61 20 55 53 42 20 32 2E 30 20 45 78 74 65 6E 64 65 72 00 00 00
00 00 00 00 00 00 55 53 42 20 4F 76 65 72 20 4E 65 74 77 6F 72 6B 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 31 2E 39 2E 34 00 00 00 00 00 00 00 00 00 00 00 00
  
```

Additional Information

- All multibyte fields that do not meet the required length will be zero-padded, following the data.
- Messages are at least 10 bytes in length, but do not exceed 136 bytes.
- Any string fields should be UTF-8 encoded.

Commands

Queries

Command	Description
Query	Returns basic information about the device
Advanced Query	Returns additional information about the device

Pairing

Command	Description
Force Pair	Removes all existing pairings and establishes a new pairing for the unit with the specified MAC address.
Pair	Pairs to the device with the specified MAC address
Unpair	Unpairs the device with the specified MAC address
Unpair All	Unpairs all devices

Network

Command	Description
IPDHCP	Sets the specified unit to DHCP mode
IPStatic	Sets the specified unit to the desired static IP address

Utility

Command	Description
Blink On	Enables blinking of all LED indicators on the unit
Blink Off	Disables blinking of all LED indicators on the unit
Reboot	Reboots the unit

Query

The query command can be used as either a direct command to a single unit or as a broadcast command for all units on the local network.

Syntax

```
0x2F03F4A2[message_ID]0000
```

Example

```
0x2F03F4A20000000030000
```

Returns

```
0x2F03F4A20000000030001[data]
```

Section	Description	Size
data	Device MAC Address	6 bytes
	Device IP Address	4 bytes
	Network Mode 0x00 = DHCP 0x01 = Static	1 byte
	0x03	1 byte
	Atlona USB 2.0 Extender	32 bytes
	USB over Network	32 bytes
	Product Revision	12 bytes

Advanced Query

Returns extended device information.

Syntax

```
0x2F03F4A2[message_ID]0300
```

Example

```
0x2F03F4A20000000030300
```

Returns

```
0x2F03F4A20000000030301[data]
```

Section	Description	Size
data	Device Type 0x00 = AT-OMNI-311 0x01 = AT-OMNI-324	1 byte
	Paired MAC Address(es)	0 - 42 bytes

Paired MAC Address section:

- If there are no paired MAC addresses, then this section will be zero bytes long.
- The AT-OMNI-311 supports pairing with up to seven AT-OMNI-324 devices. Because each paired MAC address is six bytes long, this section may be as long as 42 bytes.
- The AT-OMNI-324 supports pairing with one AT-OMNI-311 device. This section can be either zero or six bytes long.

Force Pair

Removes all existing pairings and establishes a new pairing for the unit with the specified MAC address.

Syntax

```
0x2F03F4A2[message_ID]0312[MAC_address]
```

Example

```
0x2F03F4A20000000030312B898B01302E0
```

Returns

```
0x2F03F4A2000000003[data]
```

Section	Description	Size
data	Response 0x0003 = ACK 0x0308 = NACK	2 bytes

- ACK = Command successful.
- NACK = Command unsuccessful.

Pair

Pairs the device with the specified MAC address.

Syntax

```
0x2F03F4A2[message_ID]0302[MAC_address]
```

Example

```
0x2F03F4A20000000030302B898B01302E0
```

Returns

```
0x2F03F4A2000000003[data]
```

Section	Description	Size
data	Response 0x0003 = ACK 0x0308 = NACK	2 bytes

- ACK = Command successful.
- NACK = Command unsuccessful.

In order for a pairing command to be successful, the following conditions must be met:

- An AT-OMNI-311 must be currently paired with six or fewer AT-OMNI-324 devices.
- An AT-OMNI-324 must not be currently paired to any AT-OMNI-311 device.

Unpair

Unpairs the device with the specified MAC address.

Syntax

```
0x2F03F4A2[message_ID]0303[MAC_address]
```

Example

```
0x2F03F4A20000000030303B898B01302E0
```

Returns

```
0x2F03F4A2000000003[data]
```

Section	Description	Size
data	Response 0x0003 = ACK 0x0308 = NACK	2 bytes

- ACK = Command successful.
- NACK = Command unsuccessful.

Unpair All

Unpairs all devices.

Syntax

```
0x2F03F4A2[message_ID]0311
```

Example

```
0x2F03F4A20000000030311
```

Returns

```
0x2F03F4A20000000030003
```

IPDHCP

Sets the specified device to DHCP mode.



NOTE: By sending this message as a broadcast message, only the device with the specified MAC address will be set to DHCP mode.

Syntax

```
0x2F03F4A2[message_ID]0306[MAC_address]
```

Example

```
0x2F03F4A2000000030306B898B01302E0
```

Returns

```
0x2F03F4A200000003[data]
```

Section	Description	Size
data	Response 0x0003 = ACK 0x0308 = NACK	2 bytes

- ACK = Command successful.
- NACK = Command unsuccessful.

IPStatic

Sets the specified unit to the desired static IP address, subnet mask, and default gateway.



NOTE: By sending this message as a broadcast message, only the device with the specified MAC address will be set to DHCP mode.

Syntax

```
0x2F03F4A2[message_ID]0307[MAC_address][data]
```

Section	Description	Size
data	Static IP Address	4 bytes
	Subnet Mask	4 bytes
	Default Gateway	4 bytes

Example

```
0x2F03F4A2000000030307B898B01302E0C0A80144FFFFFF00C0A80101
```

Returns

```
0x2F03F4A200000003[data]
```

Feedback	Description	Size
data	Response 0x0003 = ACK 0x0308 = NACK	2 bytes

- ACK = Command successful.
- NACK = Command unsuccessful.

Blink On

Enables blinking of all LED indicators on the front panel of the unit.

Syntax

```
0x2F03F4A2[message_ID]030A
```

Example

```
0x2F03F4A2000000003030A
```

Returns

```
0x2F03F4A20000000030003
```

Blink Off

Disables blinking of the front-panel LED indicators.

Syntax

```
0x2F03F4A2[message_ID]030B
```

Example

```
0x2F03F4A2000000003030B
```

Returns

```
0x2F03F4A20000000030003
```

Reboot

Reboots the unit.

Syntax

```
0x2F03F4A2[message_ID]030C
```

Example

```
0x2F03F4A2000000003030C
```

Returns

```
0x2F03F4A20000000030003
```

