OmniStream
311 and 324 USB Extenders

Application Programming Interface
## Version Information

<table>
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<tr>
<th>Version</th>
<th>Release Date</th>
<th>Notes</th>
</tr>
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<tr>
<td>1</td>
<td>04/18</td>
<td>Initial Release</td>
</tr>
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<td>Section</td>
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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

Returns:

2F 03 F4 A2 00 00 00 03 00 00 03 00 00 03 00 01 0B 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 64 65 72 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 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

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Query</td>
<td>Returns basic information about the device</td>
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<td>Returns additional information about the device</td>
</tr>
</tbody>
</table>

## Pairing

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Force Pair</td>
<td>Removes all existing pairings and establishes a new pairing for the unit with the specified MAC address.</td>
</tr>
<tr>
<td>Pair</td>
<td>Pairs to the device with the specified MAC address</td>
</tr>
<tr>
<td>Unpair</td>
<td>Unpairs the device with the specified MAC address</td>
</tr>
<tr>
<td>Unpair All</td>
<td>Unpairs all devices</td>
</tr>
</tbody>
</table>

## Network

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IPDHCP</td>
<td>Sets the specified unit to DHCP mode</td>
</tr>
<tr>
<td>IPStatic</td>
<td>Sets the specified unit to the desired static IP address</td>
</tr>
</tbody>
</table>

## Utility

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blink On</td>
<td>Enables blinking of all LED indicators on the unit</td>
</tr>
<tr>
<td>Blink Off</td>
<td>Disables blinking of all LED indicators on the unit</td>
</tr>
<tr>
<td>Reboot</td>
<td>Reboots the unit</td>
</tr>
</tbody>
</table>
**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**

```
0x2F03F4A2000000030000
```

**Returns**

```
0x2F03F4A2000000030001[data]
```

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>data</td>
<td>Device MAC Address</td>
<td>6 bytes</td>
</tr>
<tr>
<td></td>
<td>Device IP Address</td>
<td>4 bytes</td>
</tr>
<tr>
<td></td>
<td>Network Mode</td>
<td>1 byte</td>
</tr>
<tr>
<td></td>
<td>• 0x00 = DHCP</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 0x01 = Static</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0x03</td>
<td>1 byte</td>
</tr>
<tr>
<td></td>
<td>Atlona USB 2.0 Extender</td>
<td>32 bytes</td>
</tr>
<tr>
<td></td>
<td>USB over Network</td>
<td>32 bytes</td>
</tr>
<tr>
<td></td>
<td>Product Revision</td>
<td>12 bytes</td>
</tr>
</tbody>
</table>
Advanced Query

Returns extended device information.

Syntax

0x2F03F4A2[message_ID]0300

Example

0x2F03F4A200000030300

Returns

0x2F03F4A200000030301[data]

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
<th>Size</th>
</tr>
</thead>
</table>
| 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.
Commands

**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**
```
0x2F03F4A2000000030312001B130281E0
```

**Returns**
```
0x2F03F4A200000003[data]
```

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>data</td>
<td>Response</td>
<td>2 bytes</td>
</tr>
<tr>
<td></td>
<td>• 0x0003 = ACK</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 0x0308 = NACK</td>
<td></td>
</tr>
</tbody>
</table>

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

Pairs the device with the specified MAC address.

**Syntax**

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

**Example**

```
0x2F03F4A2000000030303001B130281E0
```

**Returns**

```
0x2F03F4A200000003[data]
```

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>data</td>
<td>Response</td>
<td>2 bytes</td>
</tr>
<tr>
<td></td>
<td>• 0x0003 = ACK</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 0x0308 = NACK</td>
<td></td>
</tr>
</tbody>
</table>

- **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**

0x2F03F4A20000000030303001B130281E0

**Returns**

0x2F03F4A200000003[data]

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>data</td>
<td>Response</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 0x0003 = ACK</td>
<td>2 bytes</td>
</tr>
<tr>
<td></td>
<td>• 0x0308 = NACK</td>
<td></td>
</tr>
</tbody>
</table>

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

Unpair All

Unpairs all devices.

**Syntax**

0x2F03F4A2[message_ID]0311

**Example**

0x2F03F4A20000000030311

**Returns**

0x2F03F4A200000003
Commands

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

```
0x2F03F4A2000000030306001B130281E0
```

Returns

```
0x2F03F4A200000003[data]
```

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>data</td>
<td>Response</td>
<td>2 bytes</td>
</tr>
<tr>
<td></td>
<td>• 0x0003 = ACK</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 0x0308 = NACK</td>
<td></td>
</tr>
</tbody>
</table>

• ACK = Command successful.

• NACK = Command unsuccessful.
Commands

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]

Example
0x2F03F4A2000000030307001B130281E0C0A80144FFFFFF00C0A80101

Returns
0x2F03F4A200000003[data]

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

• ACK = Command successful.
• NACK = Command unsuccessful.
Commands

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

**Syntax**
0x2F03F4A2[message_ID]030A

**Example**
0x2F03F4A200000003030A

**Returns**
0x2F03F4A2000000030003

**Blink Off**
Disables blinking of the front-panel LED indicators.

**Syntax**
0x2F03F4A2[message_ID]030B

**Example**
0x2F03F4A200000003030B

**Returns**
0x2F03F4A2000000030003

**Reboot**
Reboots the unit.

**Syntax**
0x2F03F4A2[message_ID]030C

**Example**
0x2F03F4A200000003030C

**Returns**
0x2F03F4A2000000030003