HW-OMNI-311

HW-OMNI-324

OmniStream USB to IP Adapters

API Command Reference

October 2026

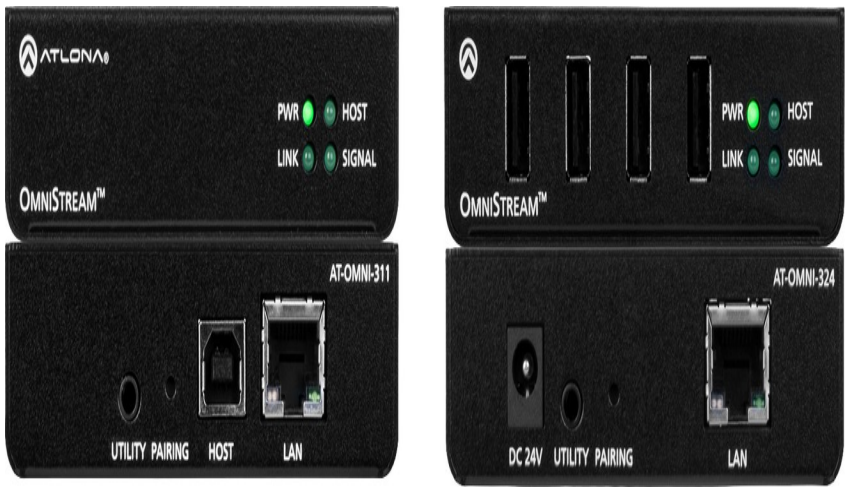


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Version Information

This document lists the commands for controlling the HW-OMNI-311, HW-OMNI-324 over UDP. Its version history follows the original command reference.

Version	Date	Notes
1	April 2018	Initial release.
HR 1.0	October 2026	Converted to the Hall Research document format. No command changes.

Sales & Customer Support

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Product Page (HW-OMNI-324)	https://www.hallresearch.com/product/HW-OMNI-324

IMPORTANT: Visit hallresearch.com/product/HW-OMNI-311 or hallresearch.com/product/HW-OMNI-324 for the latest firmware updates and documentation.

Introduction

General

This document provides a listing of API commands for the OmniStream 311 (HW-OMNI-311) and OmniStream 324 (HW-OMNI-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 the 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 0x2F03F4A2 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:

```
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 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 00 31 2E 39 2E 34
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.

Command Quick Reference

Select a command name to go to its full description.

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 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 device to DHCP mode
IPStatic	Sets the specified unit to the desired static IP address, subnet mask, and default gateway

Utility

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

Commands

Queries

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
```

This command does not require any parameters.

Example

```
0x2F03F4A2000000030000
```

Returns

```
0x2F03F4A2000000030001[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
```

This command does not require any parameters.

Example

```
0x2F03F4A2000000030300
```

Returns

```
0x2F03F4A2000000030301[data]
```

Section	Description	Size
data	Device Type • 0x00 = HW-OMNI-311 • 0x01 = HW-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 HW-OMNI-311 supports pairing with up to seven HW-OMNI-324 devices. Because each paired MAC address is six bytes long, this section may be as long as 42 bytes.
- The HW-OMNI-324 supports pairing with one HW-OMNI-311 device. This section can be either zero or six bytes long.

Pairing

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]
```

Section	Description	Size
[MAC_address]	MAC address of the target unit	6 bytes

Example

```
0x2F03F4A2000000030312B898B01302E0
```

Returns

```
0x2F03F4A200000003[data]
```

Section	Description	Size
data	Response • 0x0003 = ACK (command successful) • 0x0308 = NACK (command unsuccessful)	2 bytes

Pair

Pairs the device with the specified MAC address.

Syntax

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

Section	Description	Size
[MAC_address]	MAC address of the target unit	6 bytes

Example

```
0x2F03F4A2000000030302B898B01302E0
```

Returns

```
0x2F03F4A200000003[data]
```

Section	Description	Size
data	Response • 0x0003 = ACK (command successful) • 0x0308 = NACK (command unsuccessful)	2 bytes

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

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

Unpair

Unpairs the device with the specified MAC address.

Syntax

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

Section	Description	Size
[MAC_address]	MAC address of the target unit	6 bytes

Example

```
0x2F03F4A2000000030303B898B01302E0
```

Returns

```
0x2F03F4A200000003[data]
```

Section	Description	Size
data	Response • 0x0003 = ACK (command successful) • 0x0308 = NACK (command unsuccessful)	2 bytes

Unpair All

Unpairs all devices.

Syntax

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

This command does not require any parameters.

Example

```
0x2F03F4A2000000030311
```

Returns

```
0x2F03F4A2000000030003
```

Network

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]
```

Section	Description	Size
[MAC_address]	MAC address of the target unit	6 bytes

Example

```
0x2F03F4A2000000030306B898B01302E0
```

Returns

```
0x2F03F4A200000003[data]
```

Section	Description	Size
data	Response • 0x0003 = ACK (command successful) • 0x0308 = NACK (command unsuccessful)	2 bytes

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 the static IP address.

Syntax

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

Section	Description	Size
[MAC_address]	MAC address of the target unit	6 bytes
[data]	Static IP Address	4 bytes
	Subnet Mask	4 bytes
	Default Gateway	4 bytes

Example

0x2F03F4A2000000030307B898B01302E0C0A80144FFFFFF00C0A80101

Returns

0x2F03F4A200000003[data]

Section	Description	Size
data	Response • 0x0003 = ACK (command successful) • 0x0308 = NACK (command unsuccessful)	2 bytes

Utility

Blink On

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

Syntax

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

This command does not require any parameters.

Example

```
0x2F03F4A200000003030A
```

Returns

```
0x2F03F4A2000000030003
```

Blink Off

Disables blinking of the front-panel LED indicators.

Syntax

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

This command does not require any parameters.

Example

```
0x2F03F4A200000003030B
```

Returns

```
0x2F03F4A2000000030003
```

Reboot

Reboots the unit.

Syntax

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

This command does not require any parameters.

Example

```
0x2F03F4A200000003030C
```

Returns

```
0x2F03F4A2000000030003
```