myMix Protocol Description

Revision 1.1

Time Synchronization

Time synchronization is done per IEEE1588-2008 using the layer 2 transport.

Discovery

The myMix Discovery Protocol lists streams, and channel names for each unit. The packet format is as follows:

- Discovery packets are of the type specified by 802a-2003 for OUI Extended Ethertype (OUI 0x0050C2 / Protocol 0x4ED1)
- myMix and IEX16L packets can be differentiated based on size (payload > 110 bytes is IEX16L)

STREAM[n]	Streams being sent by the unit (n = 0,1,2 for myMix)

Table 1 – myMix Packet Data Payload

U8[16]	Unit Name
U8	Stream Mode (0 mono, 1 dual mono, 2 stereo, 3 none)
U8[16]	Channel 1 Name
U8[16]	Channel 2 Name
U8[6]	Stream Destination MAC

Table 2 – STREAM

U8	Change mask
U8[16]	Unit Name
U8	Lock Flag (modifiable only from the config port)
U16	Channel change mask
IEX_CHANNEL[16]	Channels being sent by the unit. All 16 always exist (but may have a mode of “none” for unused channels)
U8[8]	Firmware version string
U8[6]	Stream Destination MAC

Table 3 – IEX16L Packet Data Payload

U8	Field change mask
U8	Mode (0 mono, 1 dual mono, 2 stereo, 3 none)

U8	Gain (0 dB, 6 dB, 12 dB)
U8[16]	Channel Name

Table 4 – IEX_CHANNEL

Audio Transport

Audio conforms to IEEE1722 with the following variations:

- Ethertype is 0x88b5 (which was used prior to an ethertype being assigned)
- The stream_data_length field is in samples (not octets as specified)
- Audio data is set as 61883-6 and uses the 24-bit packed/interleaved samples (big endian) but does not contain a CIP header. Each audio stream contains 2 channels all the time.
- Timestamps always refer to the last sample in the packet (not regulated by the syt interval)
- Destination addresses for streams are allocated via MAAP (16 MACs per unit), but the range covers the layer 3 to layer 2 multicast IP mapping (to support IGMP for multicast filtering) instead of the one specified in IEEE1722.

A myMix unit may send up to 3 streams (Local inputs, Stereo Mix and Media Clock Pilot.) An IEX16L unit may send up to 9 streams (Inputs in pairs 1-16 and a Media Clock Pilot.)

Stream IDs are formed from the source MAC of the unit sending the stream, plus 16 bits identifying the stream. Audio streams have an increasing identifier (0,1,2…) that corresponds to the index in the discovery packet from that unit. Pilot streams have an identifier of 0x1000.

Stream destination MACs all start at the allocated range from MAAP. These increment the last nibble in the same way the stream IDs do (0,1,2…). Pilot streams have a destination MAC ending in 0xF.

Media Clock

The media clock master follows the PTP grandmaster. Whenever the BMCA detects a new grandmaster, that unit becomes the media clock master and other units slave to that media clock stream. The media clock master always produces a pilot stream. This looks the same as an audio stream from the units except that the same data is fabricated (consecutive increasing numbers.) Data must be present in the stream to correctly identify the number of samples, but the data values are discarded.

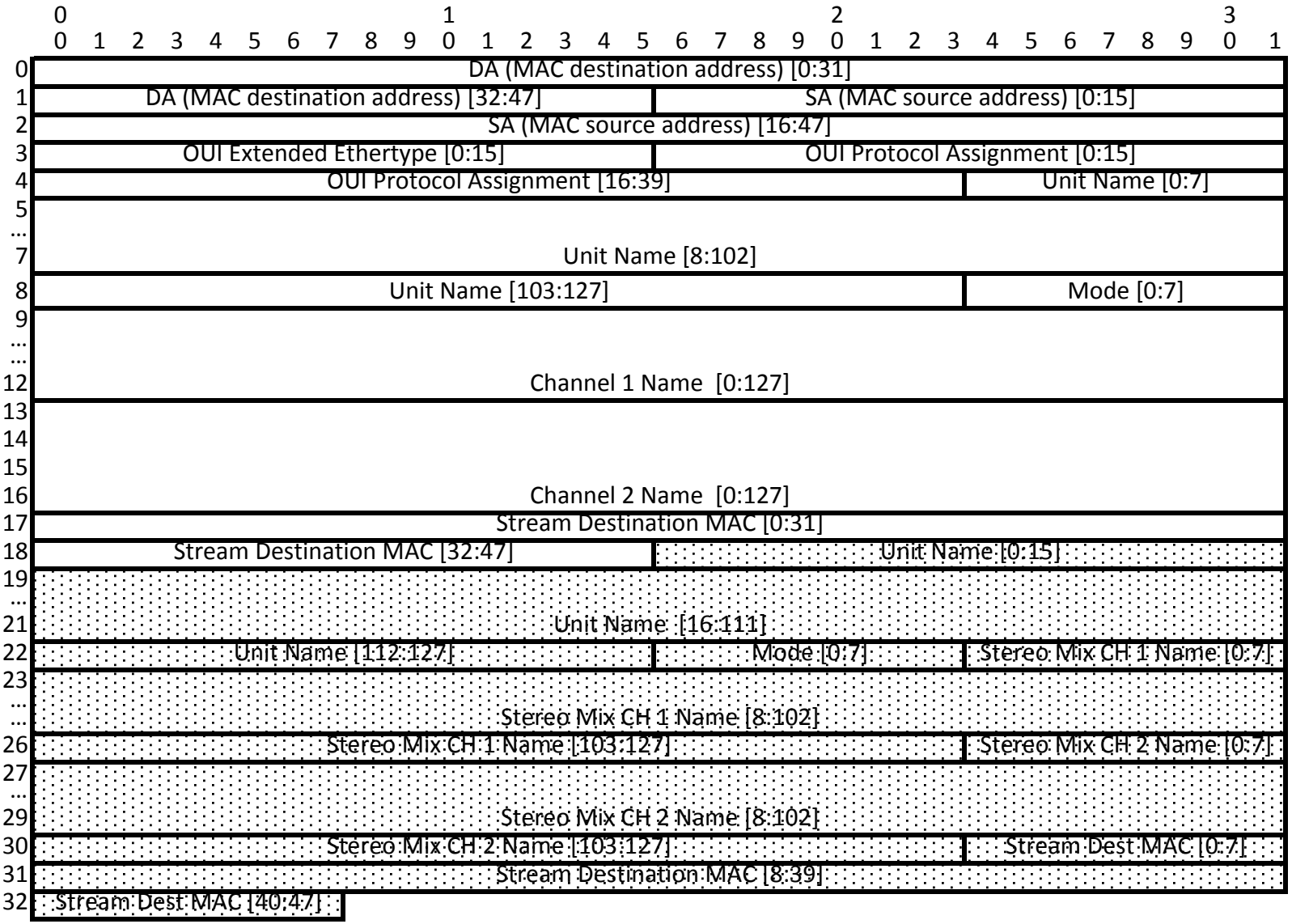

Figure 1 - myMix Discovery Packet

***Note: Shaded fields will not be present in packet unless "Transmit Mix to Network" is enabled.**

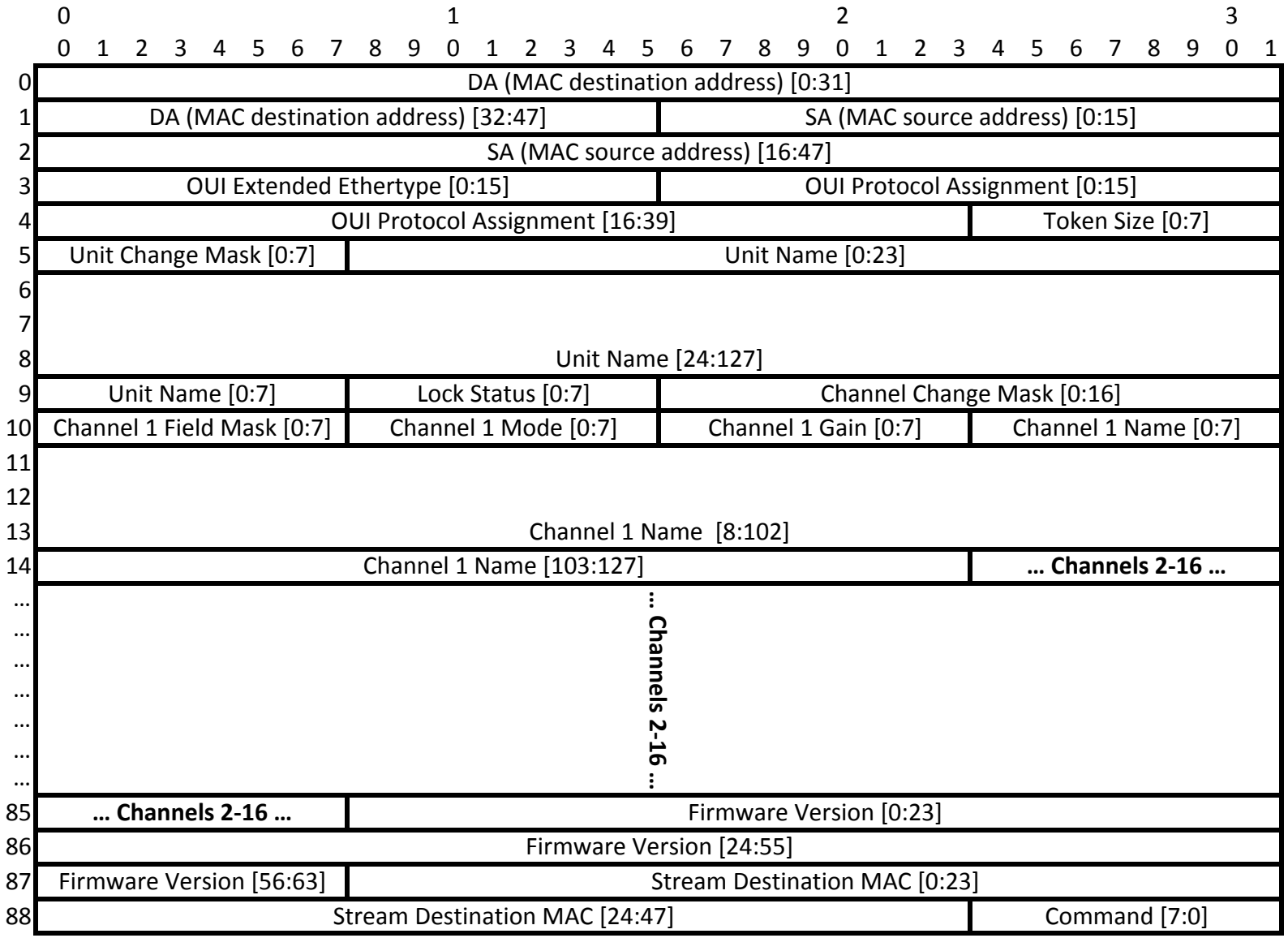

Figure 2 - IEX-16L Discovery Packet