

OM-1 Interface module

OM-1



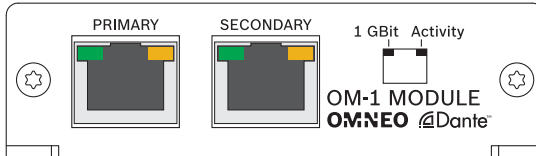
BOSCH

Installation note

english
deutsch
русский

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1 Short information



The OM-1 is a compact interface module which is prepared for a connection to an OMNEO network. It can send and receive Dante audio to and from other PAVIRO, PROMATRIX, N8000, or P64 controllers with an OM-1 Interface Module.

The transmission of up to 32 digital audio input signals and 32 digital audio output channels with low latency is possible with the OM-1. For PAVIRO and PROMATRIX there is a limitation of 16 channels.

Further OM-1 features are:

- Gigabit Ethernet Interface - 1000 MBit/s full-duplex Ethernet Interface, IEEE 802.3u compatible
- Secondary Gigabit Ethernet Interface - Second Ethernet Interface for the connection of a redundant network to establish fault-tolerant systems
- Status LEDs - Link, Activity and Gigabit active status indication for each Ethernet interface

Dante is a registered trademark of Audinate, Inc.

Parts included

Quantity	Component
1	Interface module
1	Interconnection cord internal (190 mm)
1	Interconnection cord internal (65 mm)

Quantity	Component
4	Torx screw M3X6
1	Installation note

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2 Installation

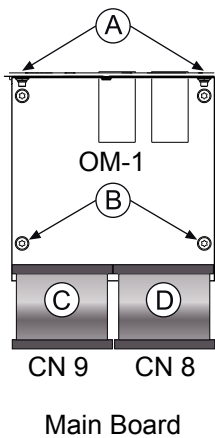
PAVRIO PVA-4CR12 and PROMATRIX PMX-4CR12

1. Turn off the power of the unit, and pull the 24 V plug.
2. Remove the cover plate (10 screws on top).
3. Remove the blind on the rear panel (2 screws).
4. Install the OM-1 module (see picture); first, secure it with 2 screws on the rear panel ④, then with 2 screws on the bolts ⑤, tighten the screws.
5. Make the following cable connections: Left connector on OM-1 module with CN9 on main board (65 mm flat wire cable) ⑥. Right connector on OM-1 module with CN8 on main board (190 mm flat wire cable) ⑦.
6. Re-install the cover plate.
7. Connect the unit to the 24 V supply, and turn the power on.
8. Configure the OM-1 module parameter in IRIS-Net according to application needs.



Notice!

A shielded cable must be used for an Ethernet connection.



Installation in N8000 or P 64

1. Turn off the power of the unit and pull the mains plug.
2. Remove the cover plate (6 screws on the sides, 3 screws on top, 4 screws on the rear).
3. Remove the blind on the rear panel (2 screws).
4. Install the OM-1 module (see picture); first, secure it with 2 screws on the rear panel ④, then with 2 screws on the bolt ⑤, tighten the screws.
5. Make the following cable connections: Left connector on OM-1 module with CN28 on main board 80500 (65 mm flat wire cable) ③. Right connector on OM-1 module with CN5 on DSP-Board 80496 (190 mm flat wire cable) ⑥.
6. Re-install the cover plate.
7. Plug in the mains cord and turn the unit's power on.
8. Configure the OM-1 module parameter in IRIS-Net according to application needs.

**Notice!**

A shielded cable must be used for an Ethernet connection.

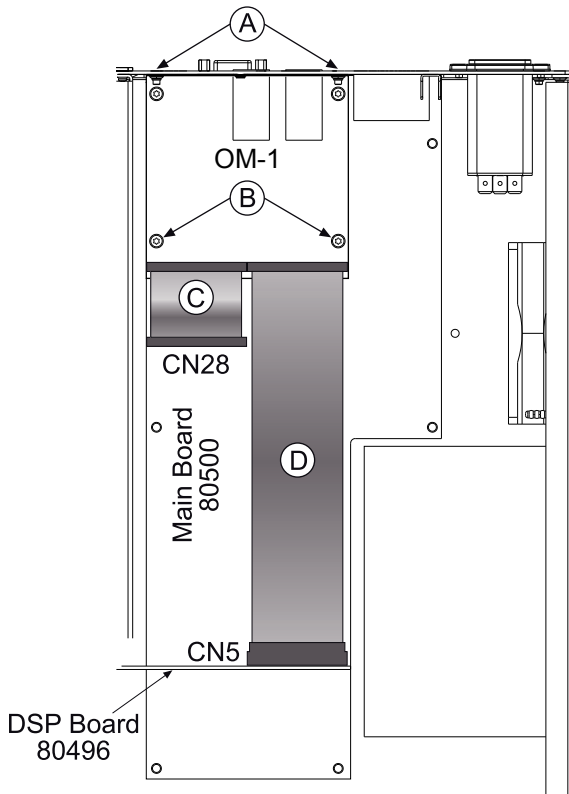


Figure 2.1: DSP-Board 80496

3 Technical data

Electrical (PAVRIO PVA-4CR12 and PROMATRIX PMX-4CR12)

Supply voltage/current	+3.3 V DC / 860mA +5 V DC / 60mA
Ethernet connectors (Primary / Secondary)	100/1000 Mbit/s, RJ-45, integrated transformer isolation
Sampling rate	48 kHz
Data format	24 Bit
Audio channels	Up to 16 × 16 at 48 kHz
Audio flows	Up to 16 × 16 simultaneous audio streams
Latency across network	5 ms (typically)

Electrical (N8000 and P 64)

Supply voltage/current	+3.3 V DC / 860mA +5 V DC / 60mA
Ethernet connectors (Primary / Secondary)	100/1000 Mbit/s, RJ-45, integrated transformer isolation
Sampling rate	48 kHz
Data format	24 Bit
Audio channels	Up to 32 × 32 at 48 kHz
Audio flows	Up to 32 × 32 simultaneous audio streams
Latency across network	0.5, 1 or 5 ms

Mechanical

Product dimensions (Width × Height × Depth)	89 × 27 × 92 mm
Net weight	75 g

Environmental

Electromagnetic environment	E1, E2, E3
Operating temperature	-5 °C to 45 °C
Storage and transport temperature	-20 °C to +70 °C

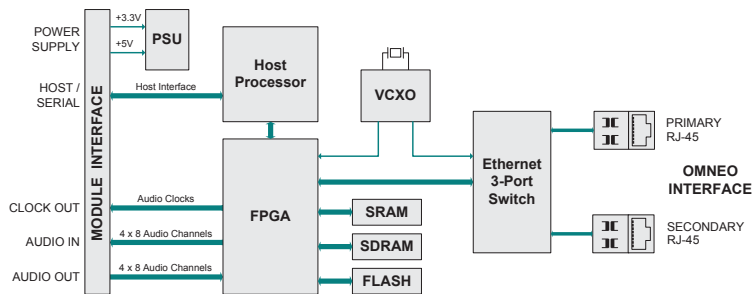


Figure 3.1: Circuit diagram

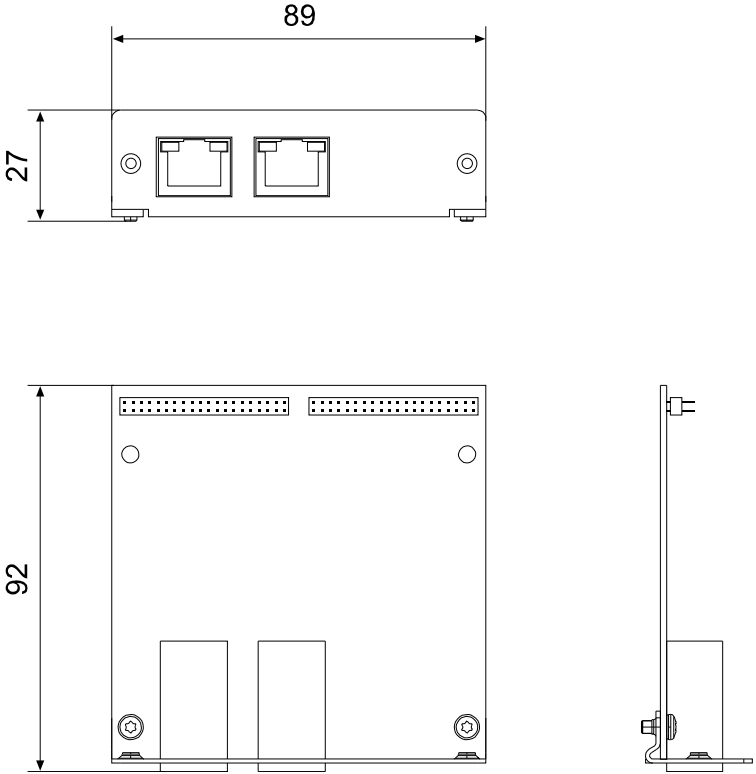


Figure 3.2: Dimensions

4 Standards

Standards

This device satisfies the following standards:

Standards:

- EN55032
- EN55103-2
- EN50130-4
- FCC
- ICES-003
- EN54-16 compliant (for PAVIRO and PROMATRIX 6000)

FCC statement

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

ICES-003 statement

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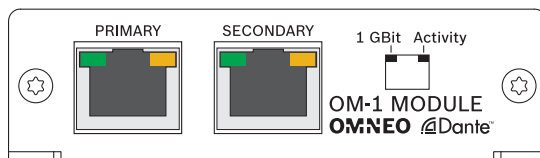
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- Sekundäre Gigabit-Ethernet-Schnittstelle – zweite Ethernet-Schnittstelle für die Anbindung eines redundanten Netzwerkes zum Aufbau fehlertoleranter Systeme
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Anzahl	Bestandteil
1	Interfacemodul
1	Internes Verbindungskabel (190 mm)
1	Internes Verbindungskabel (65 mm)

Anzahl	Bestandteil
4	Torx-Schraube M3x6
1	Installationshinweis

TORX ist ein eingetragenes Warenzeichen der Acument Intellectual Properties, LLC.

2 Montage

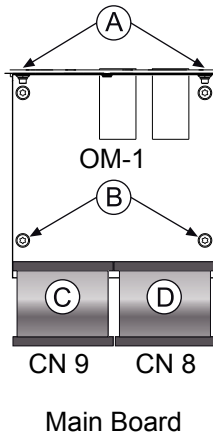
PAVIRO PVA-4CR12 und PROMATRIX PMX-4CR12

1. Schalten Sie das Gerät aus und ziehen Sie den 24 V-Stecker ab.
2. Entfernen Sie die Gehäuseabdeckung (10 Schrauben oben).
3. Entfernen Sie die Leerblende an der Rückwand (2 Schrauben).
4. Installieren Sie das OM-1-Modul (siehe Abbildung). Befestigen Sie es zunächst mit 2 Schrauben an der Rückwand ④ und 2 Schrauben am Bolzen ⑤, und ziehen Sie dann die Schrauben fest.
5. Stellen Sie die folgenden Kabelverbindungen her: Linker Anschluss an OM-1-Modul mit CN9 auf Mainboard (65 mm-Flachbandkabel) ⑥. Rechter Anschluss am OM-1-Modul mit CN8 auf Mainboard (190 mm-Flachbandkabel) ⑦.
6. Bringen Sie die Gehäuseabdeckung wieder an.
7. Schließen Sie das Gerät am 24 V-Netzteil an und schalten Sie es ein.
8. Konfigurieren Sie die Parameter für das OM-1-Modul in IRIS-Net gemäß den Applikationsanforderungen.



Hinweis!

Für eine Ethernet-Verbindung muss ein geschirmtes Kabel verwendet werden.



Installation in N8000 oder P 64

1. Schalten Sie das Gerät aus und ziehen Sie den Netzstecker ab.
2. Entfernen Sie die Gehäuseabdeckung (6 Schrauben an den Seiten, 3 Schrauben oben, 4 Schrauben hinten).
3. Entfernen Sie die Leerblende an der Rückwand (2 Schrauben).
4. Installieren Sie das OM-1-Modul (siehe Abbildung). Befestigen Sie es zunächst mit 2 Schrauben an der Rückwand (A) und 2 Schrauben am Bolzen (B), und ziehen Sie dann die Schrauben fest.
5. Stellen Sie die folgenden Kabelverbindungen her: Linker Anschluss an OM-1-Modul mit CN28 auf Mainboard 80500 (65 mm-Flachbandkabel) (C). Rechter Anschluss an OM-1-Modul mit CN5 auf DSP-Board 80496 (190 mm-Flachbandkabel) (D).
6. Bringen Sie die Gehäuseabdeckung wieder an.
7. Schließen Sie das Netzkabel an und schalten Sie das Gerät ein.
8. Konfigurieren Sie die Parameter für das OM-1-Modul in IRIS-Net gemäß den Applikationsanforderungen.

**Hinweis!**

Für eine Ethernet-Verbindung muss ein geschirmtes Kabel verwendet werden.

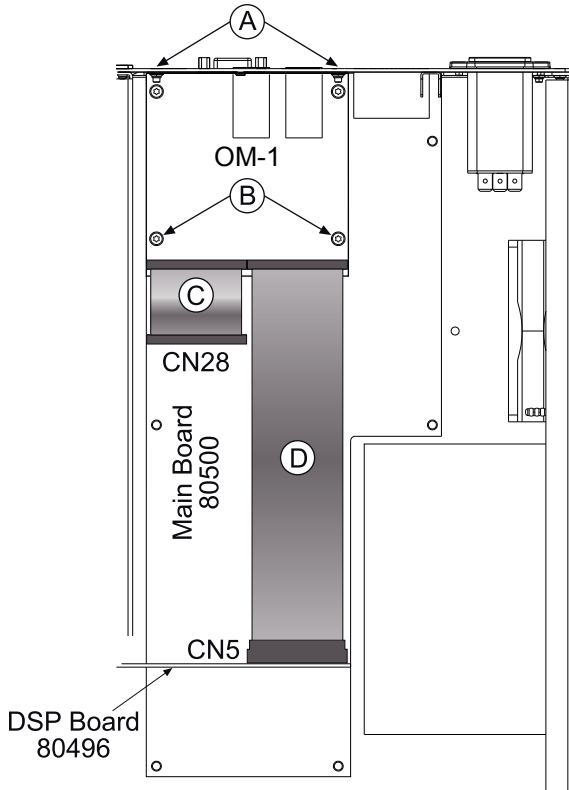


Abbildung 2.1: DSP-Board 80496

3 Technische Daten

Elektrische Daten (PAVIRO PVA-4CR12 und PROMATRIX PMX-4CR12)

Spannung/Stromversorgung	+3,3 V DC/860 mA +5 V DC/60 mA
Ethernet-Anschlüsse (Primär/ Sekundär)	100/1000 MBit/s, RJ-45, integrierter Trenntransformator
Abtastrate	48 kHz
Datenformat	24 Bit
Audiokanäle	Max. 16 x 16 bei 48 kHz
Audiodatenfluss	Max. 16 x 16 Audiostreams gleichzeitig
Latenzzeit im Netzwerk	5 ms (typisch)

Elektrische Daten (N8000 und P 64)

Spannung/Stromversorgung	+3,3 V DC/860 mA +5 V DC/60 mA
Ethernet-Anschlüsse (Primär/ Sekundär)	100/1000 MBit/s, RJ-45, integrierter Trenntransformator
Abtastrate	48 kHz
Datenformat	24 Bit
Audiokanäle	Max. 32 x 32 bei 48 kHz
Audiodatenfluss	Max. 32 x 32 Audiostreams gleichzeitig
Latenzzeit im Netzwerk	0,5, 1 oder 5 ms

Mechanische Daten

Produktabmessungen (Breite x Höhe x Tiefe)	89 x 27 x 92 mm
Nettogewicht	75 g

Umgebungsbedingungen

Elektromagnetische Umgebung	E1, E2, E3
Betriebstemperatur	-5 °C bis 45 °C
Lager- und Transporttemperatur	-20 °C bis +70 °C

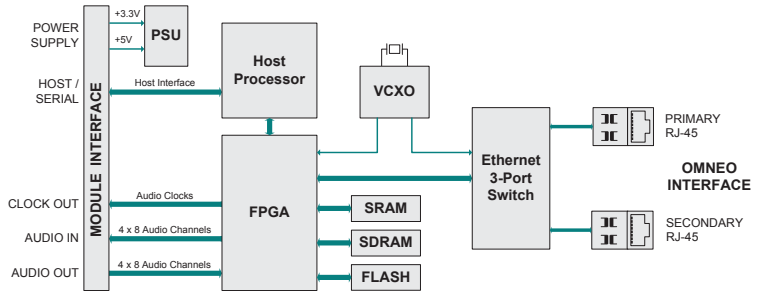


Abbildung 3.1: Schaltbild

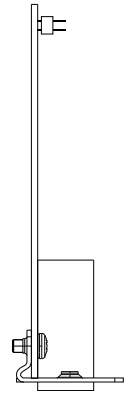
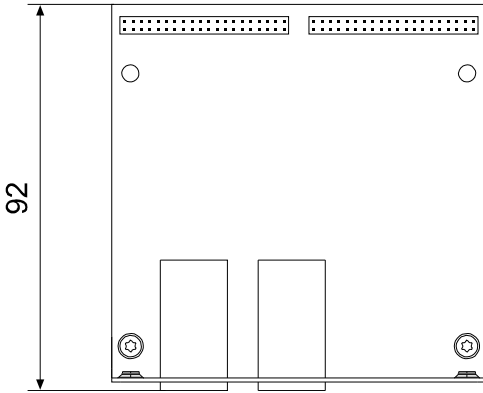
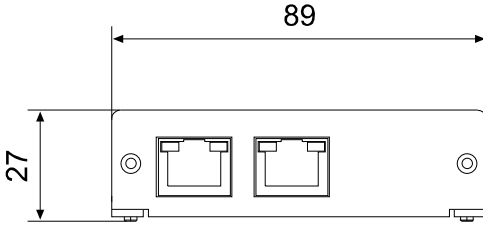


Abbildung 3.2: Maße

4 Normen

Normen

Dieses Gerät erfüllt die folgenden Normen:

Normen:

- EN 55032
- EN 55103-2
- EN 50130-4
- FCC
- ICES-003
- EN 54-16-konform (für PAVIRO und PROMATRIX 6000)

FCC-Erklärung

Dieses Gerät entspricht Teil 15 der FCC-Bestimmungen. Der Betrieb unterliegt folgenden beiden Bedingungen:

1. Dieses Gerät darf keine schädlichen Interferenzen verursachen.
2. Dieses Gerät muss sich immun gegenüber Interferenzen verhalten, einschliesslich solcher, die eine unerwünschte Funktion verursachen.

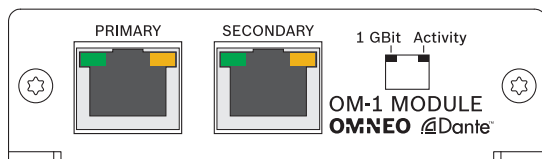
ICES-003-Erklärung

Dieses digitale Gerät der Klasse B entspricht den kanadischen Bestimmungen für interferenzverursachende Geräte, ICES-003. Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

5 **Lizenz (open-source software)**

Siehe Seiten 14 bis 50.

1 Краткая информация



OM-1 — это компактный интерфейсный модуль, который предназначен для подключения к сети OMNEO. Он может отправлять и получать аудиосигналы Dante с других контроллеров PAVIRO, PROMATRIX, N8000 или P64, оснащенных интерфейсным модулем OM-1.

С помощью OM-1 можно передавать до 32 цифровых входных аудиосигналов и до 32 цифровых выходных аудиоканалов с малой задержкой. Что касается контроллеров PAVIRO и PROMATRIX, количество сигналов ограничено 16.

Дополнительные функции OM-1:

- Интерфейс Gigabit Ethernet: 1000 Мбит/с, полнодуплексный интерфейс Ethernet, совместимость с IEEE 802.3u
- Дополнительный интерфейс Gigabit Ethernet: второй интерфейс Ethernet для подключения к сети с резервированием для создания отказоустойчивых систем
- Светодиоды состояния: индикация активного состояния связи, активности и интерфейса Gigabit для каждого интерфейса Ethernet

Dante является зарегистрированным товарным знаком корпорации Audinate, Inc.

Компоненты в комплекте

Количество	Компонент
1	Интерфейсный модуль
1	Соединительный шнур, внутренний (190 мм)
1	Соединительный шнур, внутренний (65 мм)
4	Винт Torx M3X6
1	Замечание по установке

TORX является зарегистрированным товарным знаком компании Acument Intellectual Properties, LLC.

2 Установка

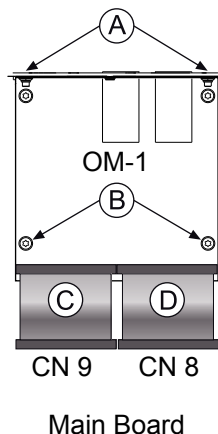
PAVRIO PVA-4CR12 и PROMATRIX PMX-4CR12

1. Отключите питание устройства и выньте вилку 24 В из розетки.
2. Снимите крышку (10 винтов сверху).
3. Снимите заглушку на задней панели (2 винта).
4. Установите модуль OM-1 (см. рисунок). Закрепите его 2 винтами на задней панели Ⓐ и 2 винтами на стержнях Ⓑ. Затяните винты.
5. Установите следующие кабельные соединения: левый разъем на модуле OM-1 с CN9 на основной плате (плоский кабель 65 мм) Ⓒ и правый разъем на модуле OM-1 с CN8 на основной плате (плоский кабель 190 мм) Ⓓ.
6. Установите крышку.
7. Подключите устройство к источнику питания 24 В и включите его.
8. Настройте параметры модуля OM-1 в IRIS-Net в соответствии с вашими требованиями.



Примечание!

Для подключения Ethernet должен использоваться экранированный кабель.



Установка на N8000 или P 64

1. Отключите питание устройства и выньте сетевую вилку из розетки.
2. Снимите крышку (6 винтов сбоку, 3 винта сверху и 4 винта сзади).
3. Снимите заглушку на задней панели (2 винта).
4. Установите модуль OM-1 (см. рисунок). Закрепите его 2 винтами на задней панели **A** и 2 винтами на стержнях **B**. Затяните винты.
5. Установите следующие кабельные соединения: левый разъем на модуле OM-1 с CN28 на основной плате 80500 (плоский кабель 65 мм) **C** и правый разъем на модуле OM-1 с CN5 на плате DSP 80496 (плоский кабель 190 мм) **D**.
6. Установите крышку.
7. Вставьте сетевую вилку в розетку и включите питание устройства.
8. Настройте параметры модуля OM-1 в IRIS-Net в соответствии с вашими требованиями.

**Примечание!**

Для подключения Ethernet должен использоваться экранированный кабель.

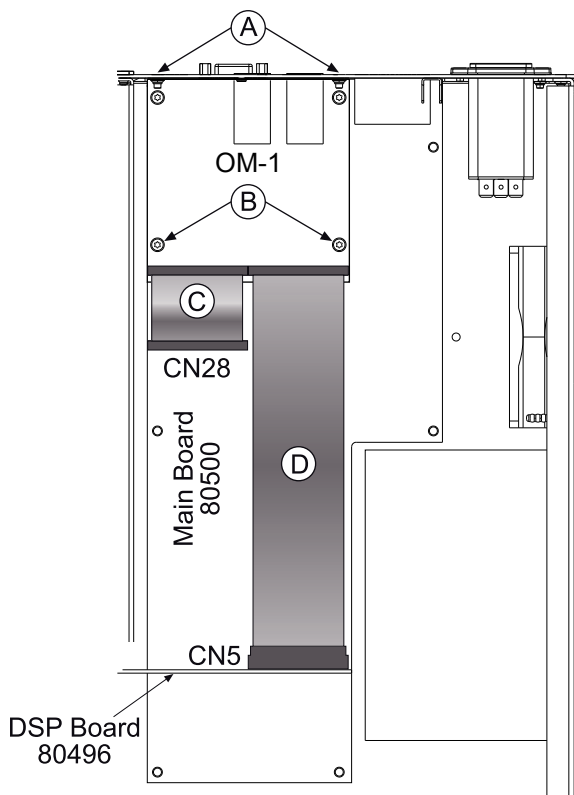


Рис. 2.1: Плата DSP 80496

3 Технические характеристики

Электрические (PAVRIO PVA-4CR12 и PROMATRIX PMX-4CR12)

Напряжение питания/ток	+3,3 В пост. тока / 860 мА +5 В пост. тока / 60 мА
Разъемы Ethernet (основной/дополнительный)	100/1000 Мбит/с, RJ-45, встроенный изолирующий трансформатор
Частота дискретизации	48 кГц
Формат данных	24-битный
Аудиоканалы	До 16 × 16 при 48 кГц
Аудиопотоки	До 16 × 16 аудиопотоков одновременно
Задержка в сети	5 мс (обычно)

Электрические характеристики (N8000 и P 64)

Напряжение питания/ток	+3,3 В пост. тока / 860 мА +5 В пост. тока / 60 мА
Разъемы Ethernet (основной/дополнительный)	100/1000 Мбит/с, RJ-45, встроенный изолирующий трансформатор
Частота дискретизации	48 кГц
Формат данных	24-битный
Аудиоканалы	До 32 × 32 при 48 кГц
Аудиопотоки	До 32 × 32 аудиопотоков одновременно
Задержка в сети	0,5, 1 или 5 мс

Механические характеристики

Размеры устройства (ширина X высота X глубина)	89 × 27 × 92 мм
Вес нетто	75 г

Условия эксплуатации

Электромагнитные условия	E1, E2, E3
Рабочая температура	от -5 °С до 45 °С
Температура хранения и транспортировки	от -20 °С до +70 °С

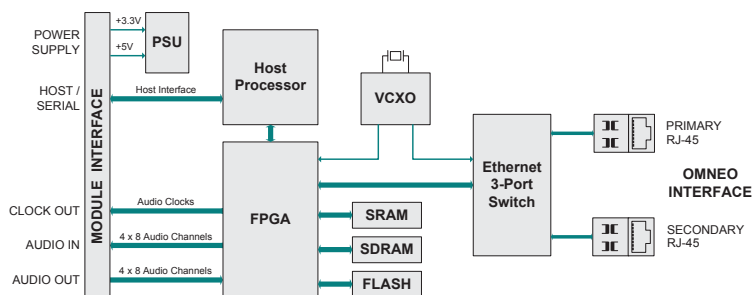


Рис. 3.1: Принципиальная схема

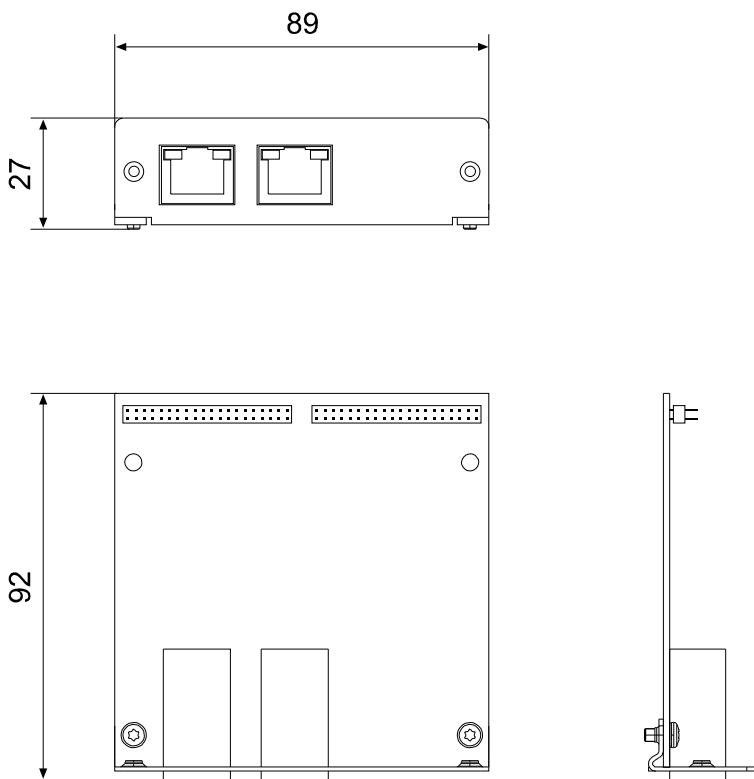


Рис. 3.2: Габариты

4 Стандарты

Стандарты

Это устройство соответствует следующим стандартам:

Стандарты:

- EN55032
- EN55103-2
- EN50130-4
- FCC
- ICES-003
- Соответствует EN54-16 (для PAVIRO и PROMATRIX 6000)

Заявления о соответствии FCC

Это устройство удовлетворяет требованиям части 15 правил FCC. При эксплуатации устройства следует принять во внимание следующие условия:

1. данное устройство не может создавать вредных помех;
2. данное устройство должно воспринимать любые помехи, включая те, которые могут привести к неправильной работе.

Заявление о соответствии ICES-003

Данное цифровое устройство класса В соответствует требованиям стандарта Канады ICES-003. Данное цифровое устройство класса В соответствует требованиям стандарта Канады NMB-003.

5 Лицензия (программное обеспечение с открытым исходным кодом)

см. стр. 14 - 50.

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