DESCRIPTION

The NX-100 Network Audio Adapter can transmit high-quality audio signals and such control data as serial data over IP networks, such as LAN or Internet, in real time. It is especially useful when transmitting audio signals to remote locations, as Internet use keeps running costs lower than the use of dedicated lines. With the use of an optional rack-mounting bracket, it can be mounted in an EIA Standard rack (1 unit size).

FEATURES

- If there is no network delay, audio signals have only a minimal millisecond delay.
- Control data including contact and serial data can also be transmitted along with the audio signals.
- Two-way audio signal transmission is possible with a single NX-100 unit as every unit is equipped with an audio input and output.
- The multicast-capable NX-100 allows simultaneous transmission of audio signals to be made to multiple locations depending on transmission method:
  - Unicast — up to 4 locations,
  - Multicast — up to 64 locations.
- No audio signal degradation or loss, even when transmitting over crowded networks such as the Internet.
- Greater data reliability using IP networks with the protocol's ability to prevent data problems during transmission.
- The NX-100's contact input can initiate and terminate audio transmissions without having to use dedicated control equipment such as a PC.
- Hardware use ensures operational reliability over only software-driven applications.
- Using IP to transmit audio signals over the internet allows low cost operation rather than dedicated lines.
- The NX-100 is equipped with a DC input to allow operation on AC as well as DC.
- Software-driven operational menus enhance ease of use.
### SPECIFICATIONS

**Power Source**
24V DC (plug-in screw connector) or AC adapter AD-246 (optional) or the equivalent

**Current Consumption**
200mA (DC operation)

**Audio Input**
1 channel (transformer-isolated), –58dB* to 0dB*, balanced (MIC/LINE changeable, volume adjustable with volume control), 2kΩ, plug-in screw connector

**Audio Output**
1 channel (transformer-isolated), balanced, 600Ω, plug-in screw connector

**Frequency Response**
50 – 14,000Hz (when sampling frequency is 32kHz)

**Distortion**
Under 0.3% (1kHz, when sampling frequency is 32kHz)

**Control Input**
8 channels, no-voltage make contact input, open voltage: 12V DC, short-circuit current: 10mA, plug-in screw connector

**Control Output**
8 channels, open collector output, withstand voltage: 30V DC, control current: 50mA max., plug-in screw connector

**Network I/F**
10BASE-T/100BASE-TX, Auto-Negotiation

**Network Protocol**
TCP/IP, UDP, HTTP, RTP

**Audio packet Transmission System**
Unicast (up to 4 simultaneous transmissions), Multicast (up to 64 simultaneous transmissions)

**Operating Temperature**
0°C to +50°C (0°C to +40°C when AC adapter is in use)

**Operating Humidity**
Under 90% RH (no dew condensation should be produced)

**Finish**
Steel plate, black, 30% gloss

**Dimensions**
210 (W) × 46 (H) × 188 (D)mm

**Weight**
1.2kg

**Accessory**
Bracket mounting screw × 8, CD (PC setting/operation software program) × 1, Power supply screw connector plug × 1, Audio I/O screw connector plug × 2, Control I/O screw connector plug × 2, RS-232C connector cover × 1

**Optional Components**
Rack mounting bracket: MB-15B-BK (for rack mounting one NX-100 unit) MB-15B-J (for rack mounting two NX-100 units) AC adapter: AD-246

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### GUIDELINES ON LINE BAND, SOUND QUALITY AND DELAY TIME

#### (1) For LAN and dedicated lines

<table>
<thead>
<tr>
<th>Line Band</th>
<th>Voice Compression</th>
<th>Audio Band</th>
<th>Sampling</th>
<th>Voice Packet Loss Recovery</th>
<th>Delay Time (sec)</th>
<th>Band Used (kbps)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Over 1.5 Mbps</td>
<td>Yes 50-14kHz</td>
<td>32kHz</td>
<td>Silence</td>
<td>0.02</td>
<td>776</td>
<td></td>
</tr>
<tr>
<td>1.5 Mbps</td>
<td>Silence</td>
<td>0.02 392</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>128 kbps (Dedicated line, etc.)</td>
<td>Yes 50-7kHz</td>
<td>16kHz</td>
<td>Silence</td>
<td>1.3</td>
<td>68</td>
<td></td>
</tr>
<tr>
<td>64 kbps (ISDN, etc.)</td>
<td>Yes 50-3.4kHz</td>
<td>8kHz</td>
<td>Silence</td>
<td>2.6</td>
<td>34</td>
<td></td>
</tr>
<tr>
<td>128 kbps (Dedicated line, etc.)</td>
<td>Yes 50-7kHz</td>
<td>16kHz</td>
<td>Retransmission</td>
<td>30</td>
<td>369</td>
<td></td>
</tr>
<tr>
<td>64 kbps (ISDN, etc.)</td>
<td>Yes 50-3.4kHz</td>
<td>8kHz</td>
<td>Retransmission</td>
<td>30</td>
<td>92</td>
<td></td>
</tr>
</tbody>
</table>

#### (2) For the Internet

<table>
<thead>
<tr>
<th>Line Band</th>
<th>Voice Compression</th>
<th>Audio Band</th>
<th>Sampling</th>
<th>Voice Packet Loss Recovery</th>
<th>Delay Time (sec)</th>
<th>Band Used (kbps)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Over 512 kbps (ADSL, etc.)</td>
<td>Yes 50-14kHz</td>
<td>32kHz</td>
<td>Silence</td>
<td>0.6</td>
<td>136</td>
<td></td>
</tr>
<tr>
<td>128 kbps (Dedicated line, etc.)</td>
<td>Yes 50-7kHz</td>
<td>16kHz</td>
<td>Retransmission</td>
<td>30</td>
<td>369</td>
<td></td>
</tr>
<tr>
<td>64 kbps (ISDN, etc.)</td>
<td>Yes 50-3.4kHz</td>
<td>8kHz</td>
<td>Retransmission</td>
<td>30</td>
<td>92</td>
<td></td>
</tr>
</tbody>
</table>

**NOTES:**

1. The following conditions apply to the side delay time values and required band:
   - (1) Line band: 1.5 Mbps; Voice compression not used—Voice packet size: 128 bytes
   - (2) Line band: 1.5 Mbps; Voice compression used—Voice packet size: 32 bytes
   - (3) A voice packet size of 1,024 bytes assumed for all but the 1.5 Mbps Line band.

2. “Voice Packet Loss Recovery” is a processing function when the voice packet cannot be received owing to communications interference.
   - (1) Silence: Sections without voice packets are processed as silence.
   - (2) Redundancy: Enables the voice to be normally output for continuous losses of up to 8 packets.
   - (3) Retransmission: Enables the voice to be normally output for continuous losses of up to 15 seconds.

3. “Required band” represents the bands required for voice transmission.
   When sending other data (such as serial data), the transmission band is separately required.

* 0dB = 1V

Note: When you need the AC adapter, be sure to consult your TOA dealer.