▸ RAV100 (DMI-8)

For Software Version 6

Operating Manual
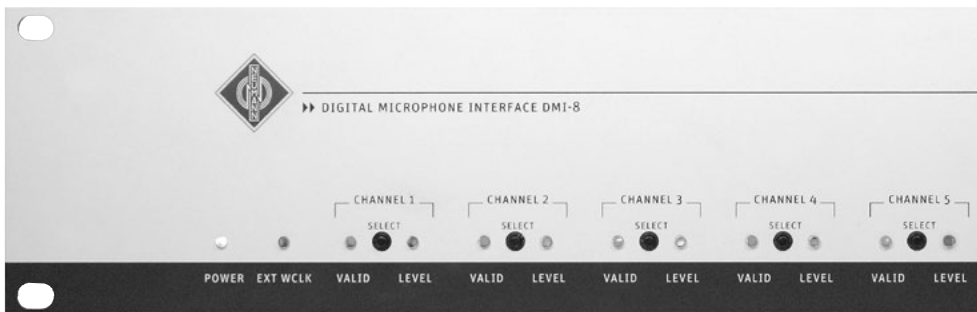
1. Safety instructions

See DMI-8 operating manual!

2. Setup

- Connect the right-hand RAV100 Ethernet port to your PC/Mac.
- Change the IP settings of your computer to: Address 192.168.0.x, subnet mask 255.255.255.0.
- Open: http://192.168.0.10:8080 in your Internet browser.
- To adapt the IP address of RAV100 to your Ravenna network, open the "Network" subpage. The IP address must reside in the same subnet and must be unique within the network. This means that to add RAV100 to a network consisting of nodes 192.168.0.1 and 192.168.0.10 with subnet mask 255.255.255.0, RAV100 must be assigned the IP address 192.168.0.x, where x can be any number from 1 to 254, with the exception of 1 and 10.

  Attention: Do not set the IP within the reserved multicast address range (224.0.0.0 to 239.255.255.255)!

- Select "Submit and reboot" to apply your changes to every page of the website, before leaving the page.
- Select and configure an IGMP-capable switch. This is important to ensure a stable Ravenna network. Recommended switches are Cisco 3750X and Cisco SG300. Addendum A provides settings for the switches Cisco 3750X and Cisco SG300 that have been tested by Neumann.

3. Connecting to the network/Device operation

- Before connecting RAV100 to the network, make sure that a PTP grandmaster is running.
- Connect RAV100 to the network switch, and power up the DMI-8.
- RAV100 will automatically synchronize to the PTP grandmaster. Synchronization may take around one minute. When synchronized, RAV100 will start sending its audio stream, and will advertise the stream in the network.

- Do not use the word clock input. The DMI-8 will always be clocked by RAV100.
- After the above steps are completed, a Bonjour browser (i.e. MT Discovery) will be able to find the stream, and other Ravenna devices can then subscribe to it. Both RAV100 and the receiving device(s) must use the same PTP domain. In most cases, this will be domain 0, which is the default for RAV100.

4. Website subpages

- Network: IP setting, see above.
- Clocks: Select the PTP clock domain. It must be equal to the clock domain of the PTP grandmaster. In most cases, the clock domain is 0.
- Source: Deactivate the stream to make any changes and then re-activate it. Set the following parameters:
  - Name: This is detected by your receiver as the stream name.
  - Address: This is the multicast address of your stream. It must be changed if you use multiple RAV100s in the same network. Set to 224-239.2.x.x if possible.
  - Framesize: This is the number of samples per IP packet.
  - Channels: Select the microphone channels to be transmitted.
- IOs: Set the DMI-8 word clock frequency. The DMI-8 is always clocked by RAV100. Input Channel Naming sets names for the individual stream channels.
- Microphone control: Set the most important microphone parameters. The parameters will be effective immediately.
- System: Update your RAVENNA card or the DMI-8 firmware.

5. Disconnecting from the network

- Before switching off, or removing the DMI-8 with RAV100 from the network, the following procedure is recommended: Select and confirm "Submit and reboot" on the "Source" page of the website, and immediately disconnect RAV100. This will remove the Bonjour advertisement of the RAV100 stream and device name from the cache of the other devices, and will thus prevent different names from being

assigned to RAV100 when restarting. If you disconnect without rebooting, the names will remain in the Bonjour caches for about 5 minutes. If the same device is started within this time, it will be assigned a different name.

6. Addendum A

Switch configuration files are available from Neumann upon request. Alternatively, you can configure the settings manually, as described below.

6.1 Cisco SG300 for Ravenna

Enable Multicast Filtering

Enable IGMP snooping and IGMP queries

IGMP querier settings

IGMP VLAN Settings

IGMP Settings Table

	Entry No.	Interface Name	Router IGMP Version	Query Robustness	Query Interval (sec)	Query Max Response Interval (sec)	Last Member Query Interval (msec)
○	1	VLAN1	v2	2	125	10	1000

Filter unregistered multicast

Unregistered Multicast

Filter: *Interface Type* equals to [Port ▼] [Go]

Port	GE1	GE2	GE3	GE4	GE5	GE6	GE7	GE8	GE9	GE10
Forwarding	○	○	○	○	○	○	○	○	○	○
Filtering	◉	◉	◉	◉	◉	◉	◉	◉	◉	◉

Add MAC group addresses 224.0.1.129 (PTP event)
and 224.0.0.107 (PTP)

MAC Group Address

MAC Group Address Table

Filter: ☐ *VLAN ID* equals to [　　　　] (Range: 1 - 4094)
☐ *MAC Group Address* equals to [　　　　] [Go] [Clear Filter]

☐	VLAN ID	MAC Group Address
☐	1	01:00:5e:00:00:01
☐	1	01:00:5e:00:00:6b
☐	1	01:00:5e:00:01:81
☐	1	01:00:5e:7f:ff:fa
☐	1	33:33:ff:8d:61:47

**Select these MAC group addresses and set to "static"
for all ports**

6.2 Cisco Catalyst 3750X-48P-S for Ravenna

**Enable IGMP querier (can be done only in the
terminal)**

- enable
- configure
- ip igmp snooping querier
- end
- copy running-config startup-config

**Switch off multicast flood on TCN for DMI Ravenna
ports**

- enable
- configure
- interface gigabitethernet 1/0/x
  (x = port number)
- no ip igmp snooping tcn flood
- end
- copy running-config startup-config

**Enable fast IGMP query after TCN, to shorten
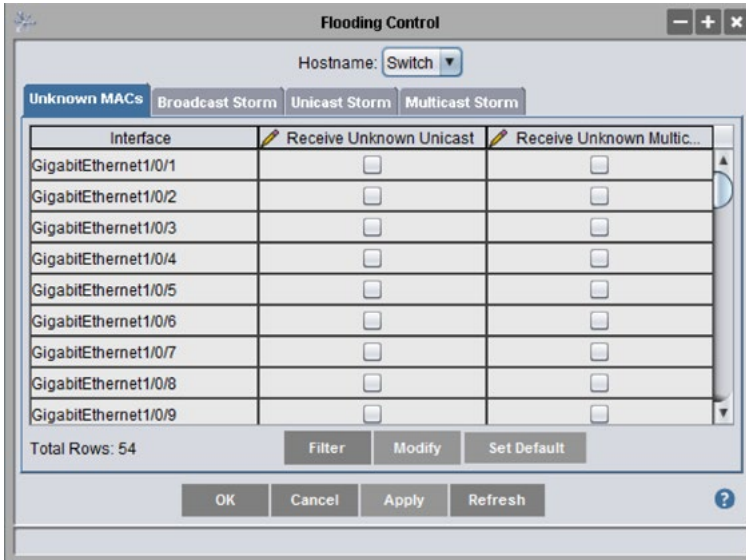multicast flood (optional)**

- enable
- configure
- ip igmp snooping tcn query solicit
- end
- copy running-config startup-config

Enable IGMP snooping in Cisco Network Assistant
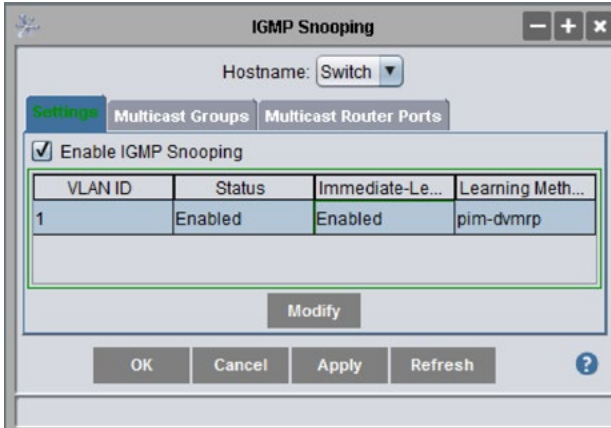
**Switch off Receive unknown multicast in
Cisco Network Assistant**

**Enable Port Fast for all DMI-Ravenna ports in
Cisco Network Assistant**

Port Settings											

Hostname: Cisco3750DG1 ▾

Configuration Settings | Runtime Status

Interface	Descri...	Status	Duplex	Speed		Port Fast	Flow Control Re...	Send	Po...	Aut...
Gi1/0/16		enabled	auto	auto		enabled	off	N/A	auto	on
Gi1/0/17		enabled	auto	auto 1000		disabled	off	N/A	auto	on
Gi1/0/18		enabled	auto	auto 1000		disabled	off	N/A	auto	on
Gi1/0/19		enabled	auto	auto 1000		disabled	off	N/A	auto	on
Gi1/0/20		enabled	auto	auto 1000		disabled	off	N/A	auto	on
Gi1/0/21		enabled	auto	auto 1000		disabled	off	N/A	auto	on
Gi1/0/22		enabled	auto	auto 1000		disabled	off	N/A	auto	on
Gi1/0/23		enabled	auto	auto 1000		disabled	off	N/A	auto	on
Gi1/0/24		enabled	auto	auto		disabled	off	N/A	auto	on
Gi1/0/25		enabled	auto	auto 1000		disabled	off	N/A	auto	on

Total Rows: 55   Filter   Modify   Describe

OK   Cancel   Apply   CLI Preview   Refresh

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· Low Voltage Directive (2006/95/EC)
· EMC Directive (2004/108/EC)
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