QIF-2011 Audio Signal Interface Module
Installation Instructions

The QIF-2011 allows external audio signals to be sent over the paging channel of the FleX-Net™. This configuration will not interfere with the fire alarm/MNS audio system, even in the case of complete power failure of the QIF-2011.

Up to four different external signals can be connected to the QIF-2011, each with an individual level adjustment. Signal 1 has the highest priority and signal 4 the lowest. FleX-Net™ paging will have absolute priority over all external signals. In addition, jumpers can be set to force the disconnection of external signals in case of alarm. Signal input 2 (V2:V2) has a built-in attenuator to allow direct connection of 70VRMS or 25V RMS signal lines to the interface. Signal input 4 (V4:V4) is for 0dB maximum background music only.

Signal Input (V4:V4) is UL/ULC listed for background music or low level paging signals (0dB or less). Use of signal inputs 1 to 3 for frequent high-level paging, background music or for connection of external emergency audio signals is not covered by the UL/ULC listing of this unit and requires permission from the local fire protection authorities. The jumpers JW7 and JW8 on the ANC-5000 Audio module must be removed (open) for this application.

The external signals are activated through a dry contact closure. If needed, both the audio and the control input wiring can be supervised for faults by setting the appropriate jumper. When supervision is required, 3.9K Ohms end of line resistors must be connected to each control and audio signal line.

Shielded pairs should be used for all audio signals. The QIF-2011 should be installed next to or inside the FleX-Net™ enclosure, using a CH-1063 adapter plate.

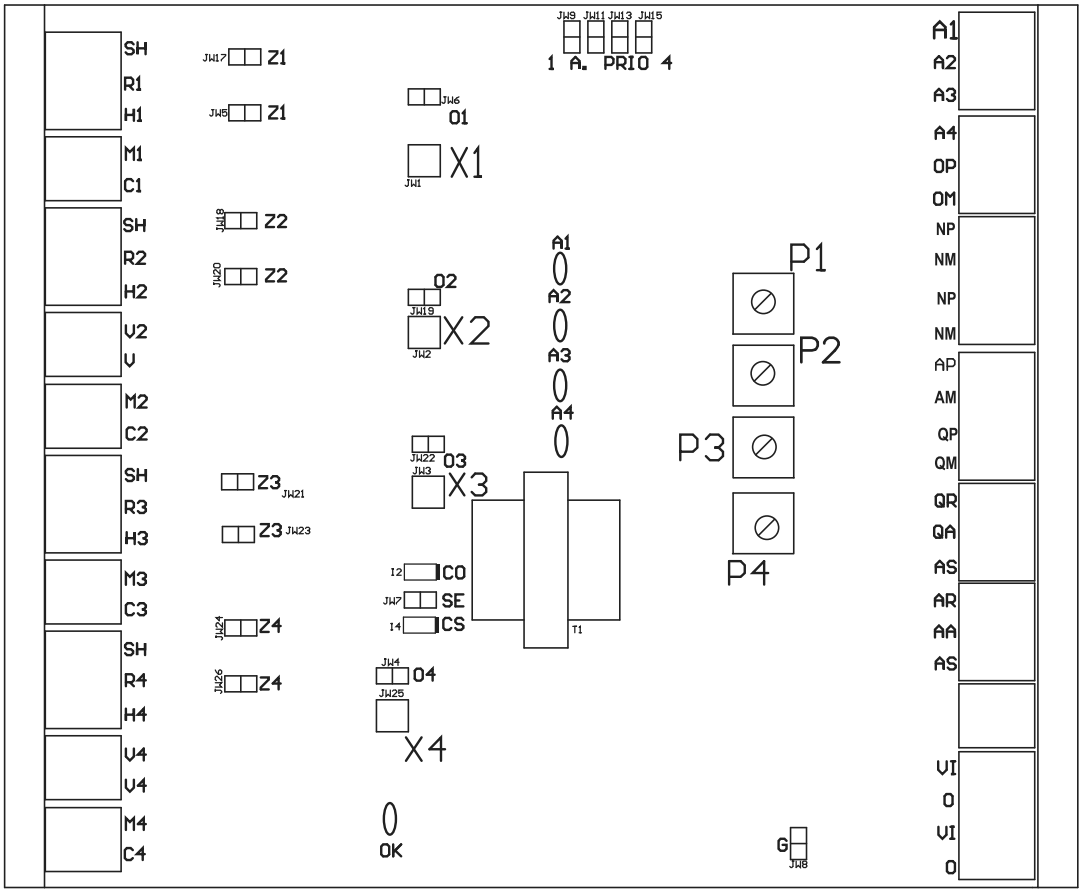

Figure 1: QIF-2011 Interface Controls and Indicators

Terminal Identification Table

Terminal	Function
SH (beside R1)	Audio signal shield connection
R1	External signal #1 audio return
H1	External signal #1 audio positive. Connect H1 and R1 to external signal source with highest priority.
M1	External signal #1 control input return
C1	External signal #1 control input positive. M1 and C1 typically connect to normally open dry contact used to activate input 1.
SH (beside R2)	Audio signal shield connection
R2	External signal #2 audio return
H2	External signal #2 audio positive. Connect H2 and R2 to external signal source.
Across V2 terminals	High voltage input for signal #2 (70V RMS maximum)
M2	External signal #2 control input return
C2	External signal #2 control input positive. M2 and C2 typically connect to normally open dry contact used to activate input 2.
SH (beside R3)	Audio signal shield connection

R3	External signal #3 audio return
H3	External signal #3 audio positive. Connect H3 and R3 to external signal source.
M3	External signal #3 control input return
C3	External signal #3 control input positive. M3 and C3 typically connect to normally open dry contact used to activate input 3.
SH (beside R4)	Audio signal shield connection
R4	Not used.
H4	Not used.
Across V4 terminals	Background music input for signal #4 with the lowest priority 0dB (0.775V) maximum.
M4	External signal #4 control input return
C4	External signal #4 control input positive. M4 and C4 typically connect to normally open dry contact used to activate input 4.
A1	Not used.
A2	Not used.
A3	Not used.
A4	Not used
OP	Not used.
OM	Not used.
NP (two terminals, internal connection positive)	Alarm input. Connect to NAC output or provide power through alarm relays, see Figure 4.
NM (two terminals, internal connection Negative)	Alarm input return.
AP	Connection for Push-to-Talk line from QMP-510X series master paging control module (QMP-510X terminal PTT IN +). The 3.9K EOL resistor is required between AP and AM when not used.
AM	Return for AP signal. Connects to QMP-510X terminal PTT IN **-**. 3.9K EOL resistor is required between AP and AM when not used.
QP	Connects to push to talk (PTT) input Positive on ANC-5000. This input is used to activate paging function of the FleX-Net™ system.
QM	Return for QP signal. Connect to ANC-5000 push to talk (PTT) input Negative.
Across PC terminals	Paging active dry contact. Closes when external signals or FleX-Net™ paging is active.
QA	Connect to ANC-5000 paging signal input.
QR	Return for QA.
AA	Connection for audio line from QMP-510X series master paging control module. Connects to QMP-510X MIC IN + terminal. 3.9K EOL resistor is required between AP and AM when not used.
AR	Return for AA. Connects to QMP-510X MIC IN **-** terminal. 3.9K EOL resistor is required between AP and AM when not used.
AS (two terminals)	Connection for shield of cables connected to QA,QR and AA,AR
VI (two terminals)	24VDC input. Connect to ANC-5000 Alternate Power In “+”.
O (two terminals)	0V power return for VI and VO. Connect one to ANC-5000 Alternate Power In “**-**”.

Jumper Identification Table

Jumper	Function (when jumper is inserted)
Z1 (two jumpers)	Signal 1 audio line supervision enable. Both jumpers must be installed and a 3.9K end of line resistor is required. In addition, coupling capacitors may be needed on signal output to prevent disruption of supervision voltage.
Z2 to Z4	Same function as Z1 but used for signal lines 2 to 4.
O1	Open detection for Zone 1 signal line. Must be removed when Z1 jumpers are not installed.
O2 to O4	Same function as O1 but used for signal lines 2 to 4.
X1	Control input #1 supervision and polarity. See Figure 2 for possible combinations.
X2 to X4	Same function as X1 but used for signal lines 2 to 4.
SE	Enables short circuit detection on signal lines input.
G	Ground fault detection enable on external signal side. Detection is performed by the FleX-Net™.
A. PRIO 1 to 4	Installed to disable corresponding external signals during FleX-Net™ alarm activation.

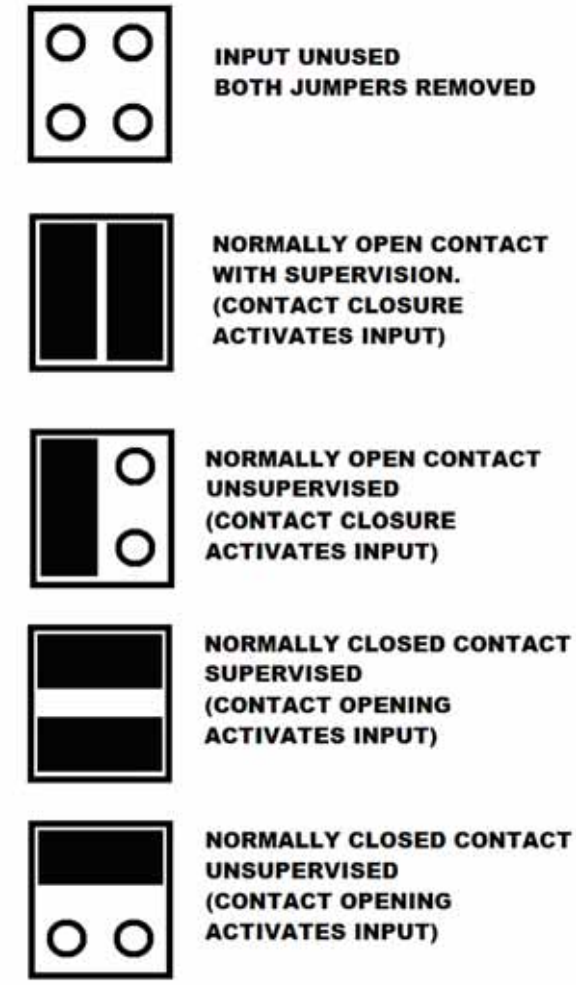

Figure 2: X1 TO X4 Jumper Configuration (location on board shown in Figure 1)

LED and Potentiometer Identification Table

LEDs , POTs	Function
OK	Green LED indicating that interface is operational
CS	Yellow LED indicating short circuit detection on one of the signals lines. Troubles will be reported back to ANC-5000 and will be displayed as microphone troubles.
CO	Yellow LED indicating open-circuit detection on one of the signal lines (H1-R1 to H4-R4) or a fault on one of the control line (C1-M1 to C4-M4, type of fault reported depends on X1 to X4 jumper configuration). Troubles will be reported back to ANC-5000 and will be displayed as microphone troubles.
A1 to A4	Green LED indicating activation of external signals 1 to 4
P1 to P4	Potentiometer for adjusting level of inputs 1 to 4. Turn clockwise to increase gain.

Typical System Connection

Requirements:

Figure 3 and 4 describes a fire alarm audio system where external input 2 signal is coming from an existing emergency audio system 70V RMS or 25V RMS output and input 4 from a background music source at 0dB. Priority for paging is a FleX-Net™ local node (highest priority), followed by the emergency paging source and finally the background music source. Both paging sources have priority over the alarm signals but the background music must be interrupted for the duration of an alarm. External paging is activated by a normally open dry contact in the Fire Alarm panel some distance away from the FleX-Net™. All-call operation is required for the external paging. Background music is turned off at night and is controlled by a normally open dry contact in a timer unit. In addition, the background music is only required to play in a few specific zones.

In this kind of system, supervision is not used for the signal lines. The 70V line is supervised by the existing panel and the background music is not an alarm feature. The jumpers will be set as follows on the QIF-2011:

- Remove Z1,Z2,Z3,Z4 jumper pairs
- Remove O1,O2,O3 and O4
- Remove X1 , X3 jumper pairs
- Remove G jumper.
- Install X2 jumpers as per normally open, with supervision as shown in Figure 2.
- Install X4 jumpers as per normally open, unsupervised as shown in Figure 2.
- Install jumpers in positions A. PRIO 1 to 4 (jumpers 1 and 3 can be either set or removed, 2 must be removed and 4 must be installed, for this typical system example).

  NOTE: The QIF-2011 Audio Interface is used with amplifiers QAA-5415-70 and QAA-5415-25.

Wiring:

The following diagrams provide wiring information for the QIF-2011 used to connect external signal sources to the ANC-5000 FleX-Net™ audio controller per this typical system example. The signal side connections must be done as per Figure 3 and the connection to the ANC-5000 as per Figure 4. Priority (A. PRIO) jumpers 2 must be removed. Also, jumpers JW7 and JW8 must be installed on the ANC-5000. The default allows for all-call operation of the FleX-Net™. For selective operation and other FleX-Net™ configurations, see the FleX-Net™ installation and configuration instructions.

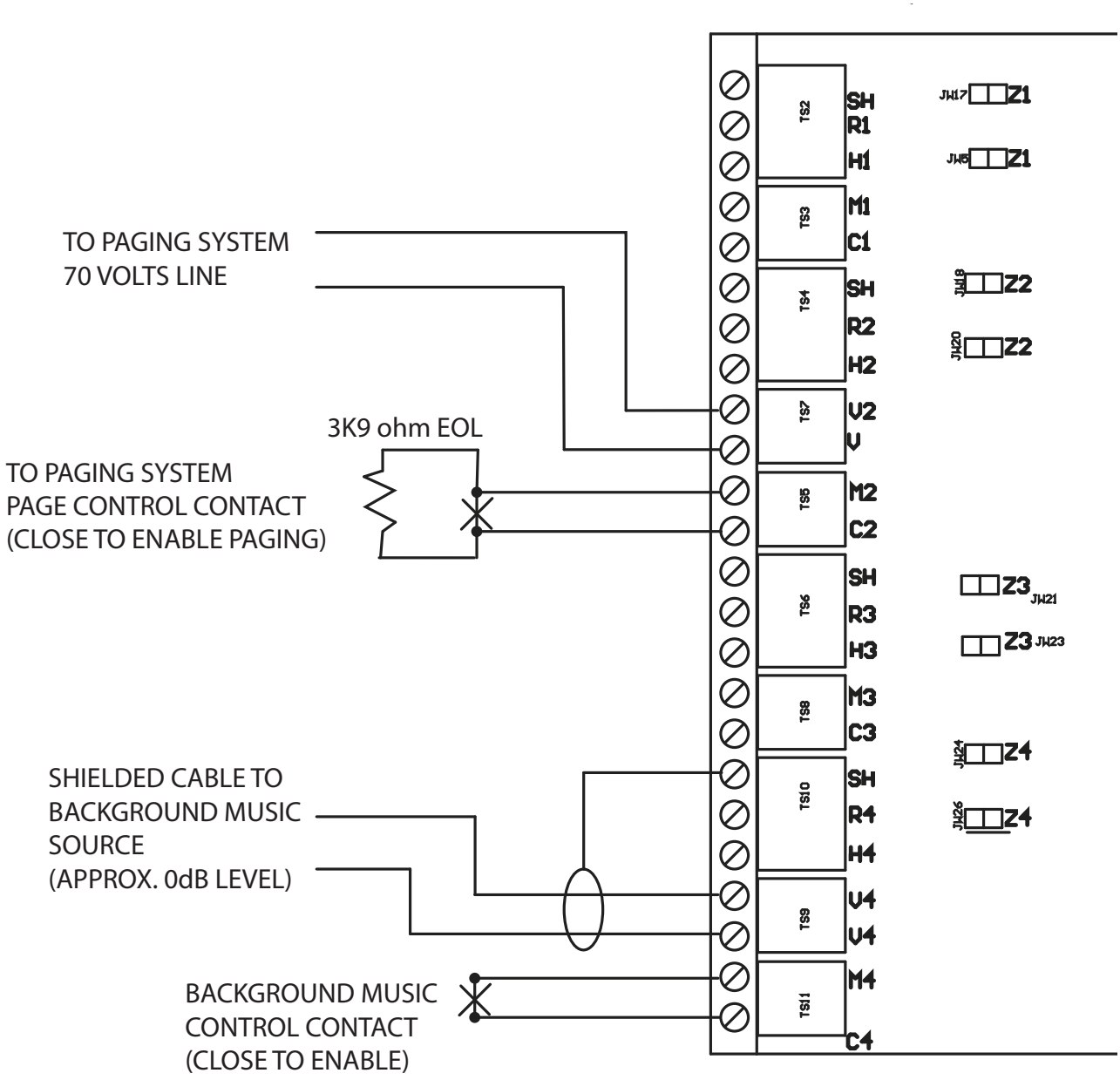

Figure 3: QIF-2011 Connection on Signal Side for the Typical System Described

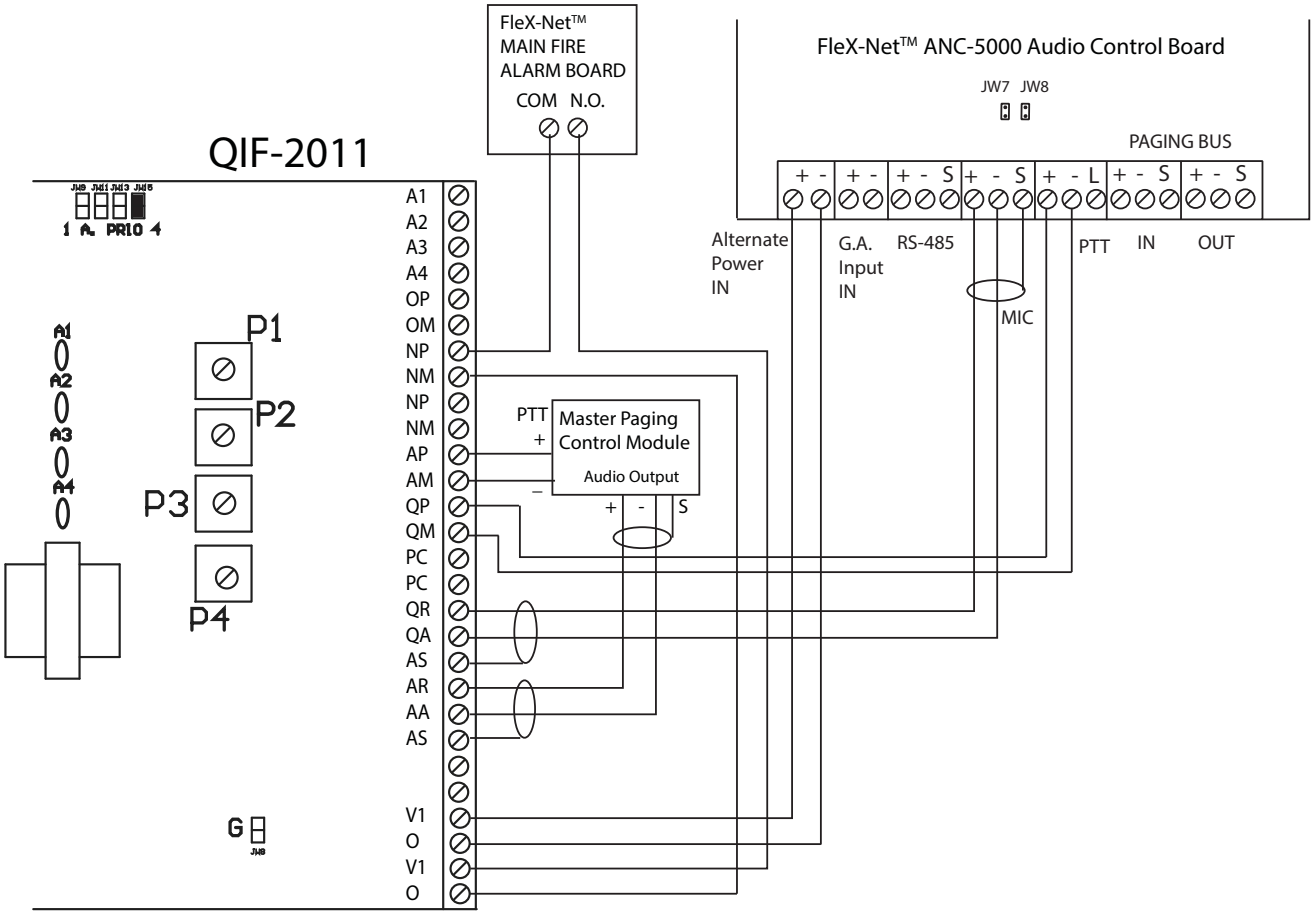

Figure 4: QIF-2011 to ANC-5000 Connections for the Typical System Described

Electrical characteristics

ITEM	VALUE
Current consumption	62mA @24VDC
Signal inputs normal voltage (Rx to Hx)	2.2V +- 10%
Control input normal voltage (Cx to Mx)	2.2V +- 10%
Signal inputs open circuit detection voltage (Rx to Hx)	4.1V +- 10%
Control inputs open circuit detection voltage (Rx to Hx)	4.1V +- 10%
Signal inputs short circuit detection voltage (Rx to Hx)	0.75 V +- 10%
Control inputs short circuit detection voltage (Rx to Hx)	0.75 V +- 10%
Voltage between QP and QM (Standby)	8V +- 20%
Voltage between QP and QM (Any paging inputs actuated)	0V
Voltage between QP and QM (Any trouble detected)	24VDC +- 20%
Alarm input detection level (Between NP and NM)	12VDC minimum
Recommended maximum voltage on low voltage inputs 1 to 4	0.775V RMS (0dB)
Maximum voltage at high voltage signal input 2	70V RMS
Maximum voltage at high voltage signal input 4	0.775V RMS (0dB)