

Eclipse Series

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Alarm/ Trunking Interface Operation and Installation Manual

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1 Introduction

The Alarm Trunking Interface (ATI) is designed to interface between a receiver, transmitter and third party equipment e.g. a trunking controller. Most receiver output signal lines and transmitter input lines are brought out to a common DB-25 female connector.

A feature of the ATI is that the receiver alarm and transmitter alarm can be combined to produce a common alarm output.

1.1 Receiver Outputs (DB-25)

| | |
|--------------------------|-----------------------|
| DISC audio | Pin 18 |
| 600 OHM line AUDIO [+] | Pin 20 |
| 600 OHM line AUDIO [-] | Pin 6 |
| COS [+] | Pin 3 |
| COS [-] | Pin 16 |
| CHANNEL select | by SW1 or solder link |
| RX ALARM | Pin 7 |

1.2 Transmitter Inputs (DB-25)

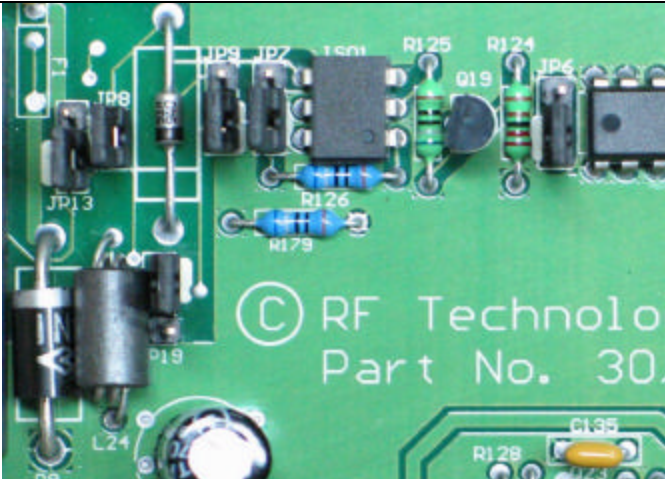
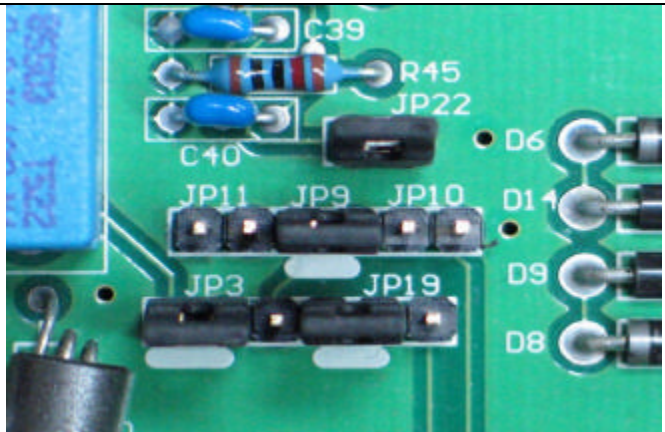
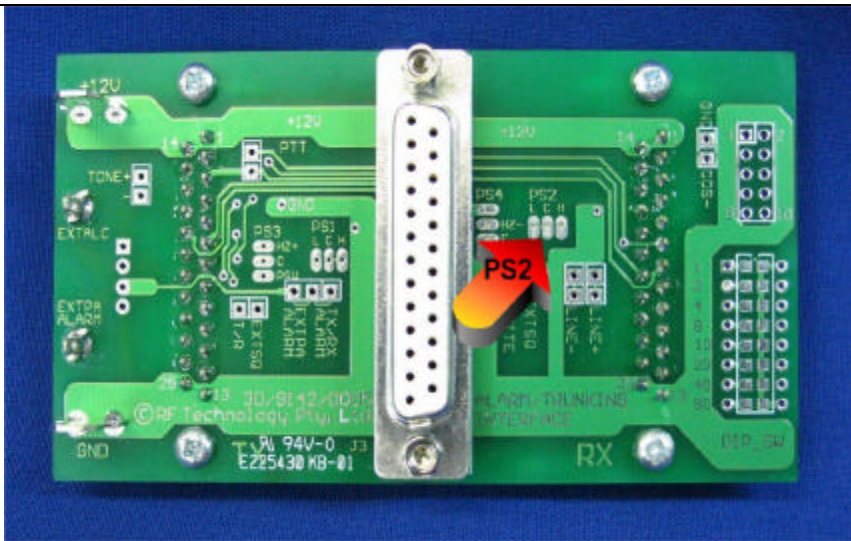
| | |
|--------------------------|-----------------------|
| Hi Z AUDIO [+] | Pin 4 |
| Hi Z AUDIO [-] | Pin 17 |
| TONE [+] | Pin 5 |
| TONE [-] | Pin 18 |
| 600 OHM line AUDIO [+] | Pin 20 |
| 600 OHM line AUDIO [-] | Pin 6 |
| PTT | Pin 3 |
| EXT ALC | Pin 8 |
| CHANNEL select | by SW1 or solder link |
| TX ALARM | Pin 7 |

1.3 ATI Input/ output (DB-25F)

| | |
|--------------------------|-----------------------|
| COS [+] | Pin 2 |
| RX LINE AUDIO [+] | Pin 15 |
| RX LINE AUDIO [-] | Pin 3 |
| FAULT ALARM out | Pin 4 |
| TX LINE AUDIO [+] | Pin 5 |
| TX LINE AUDIO [-] | Pin 18 |
| PTT | Pin 6 |
| TONE [-] | Pin 7 |
| HI Z AUDIO [+] | Pin 19 |
| HI Z AUDIO [-]/ RSSI | Pin 20 |
| LOCAL/ INTERSITE/ EXT SQ | Pin 8 |
| CHANNEL select | by SW1 or solder link |

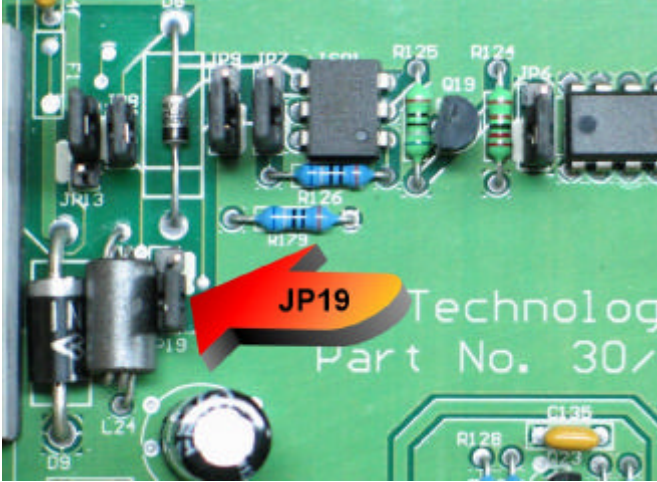
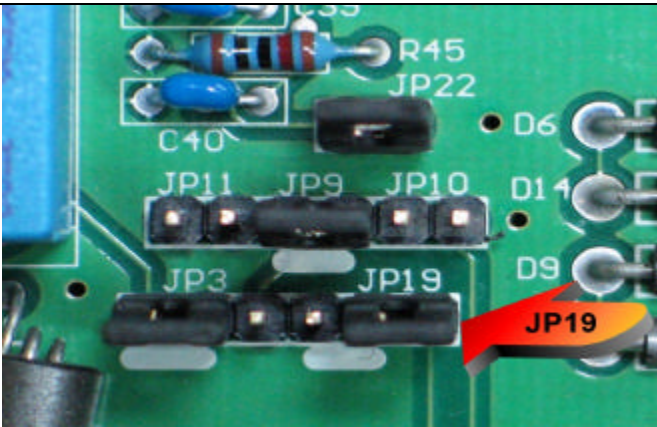
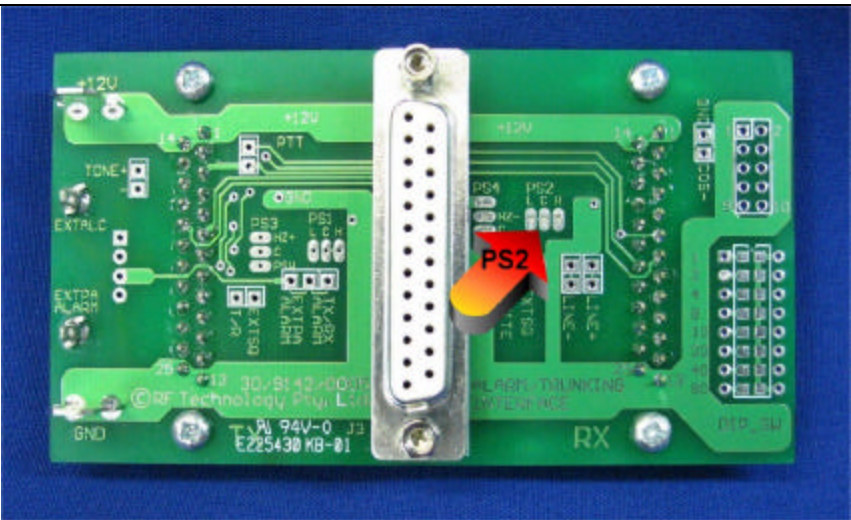
2.0 Applications

2.1 Talk Through Repeater (TTR) with DC Loop Keying TX

| Receiver | Transmitter | ATI |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Default Jumper Settings | Default Jumper Settings | Cut link PS2C to PS2L |
|  |  |  |

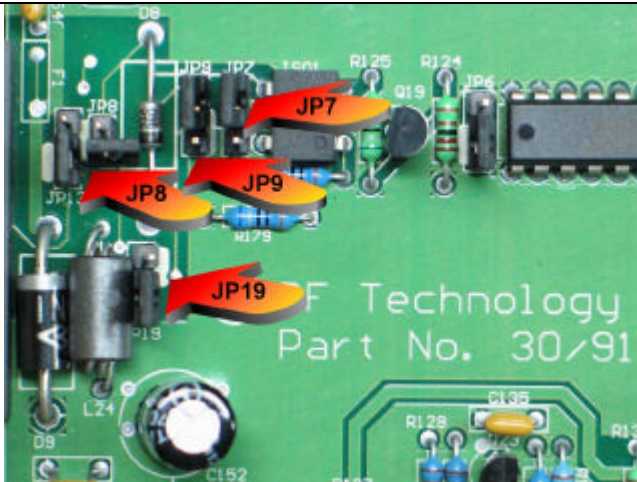
2.2 TTR with DC Loop Keying TX and commoned Alarms

| Receiver | Transmitter | ATI |
|-----------------------|-----------------------|-----------------------|
| Move JP19 to pins 2-3 | Move JP19 to pins 1-2 | Cut link PS2C to PS2L |

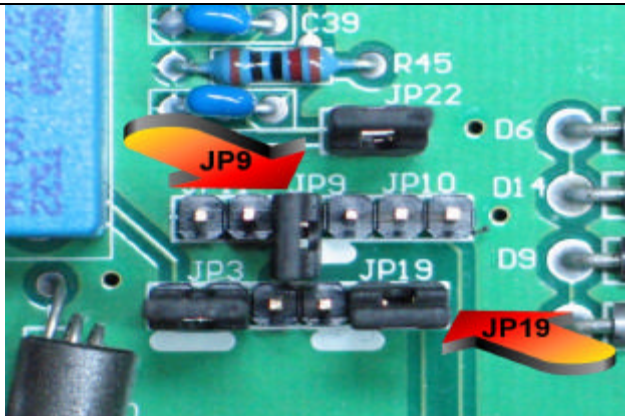
| | |
|--------------------------------------------------------------------------------------|----------------------------------------------|
|  | <p>Receiver Move JP19 to pins 2-3</p> |
|  | <p>Transmitter Move JP19 to pins 1-2</p> |
|  | <p>ATI Cut link PS2C to PS2L</p> |

2.3 TTR with PTT Keying TX and commoned Alarms

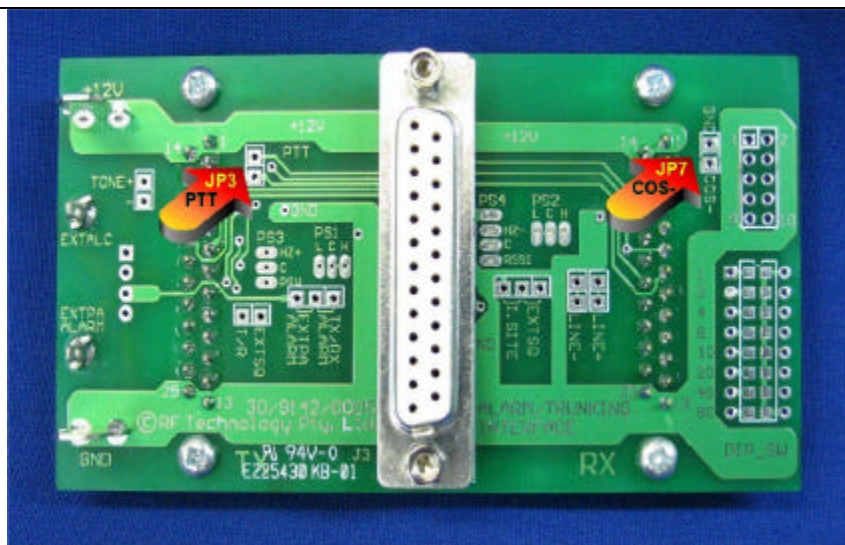
| Receiver | Transmitter | ATI |
|-----------------------|-------------------------|----------|
| Move JP19 to pins 2-3 | Move JP19 to pins (1-2) | - |
| Open JP7, JP8, JP9 | Open JP9 | - |
| For COS[-] to GND | - | Link JP7 |
| - | For COS[+] to PTT | Link JP3 |



Receiver
Move JP19 to pins 2-3
Open JP7, JP8, JP9



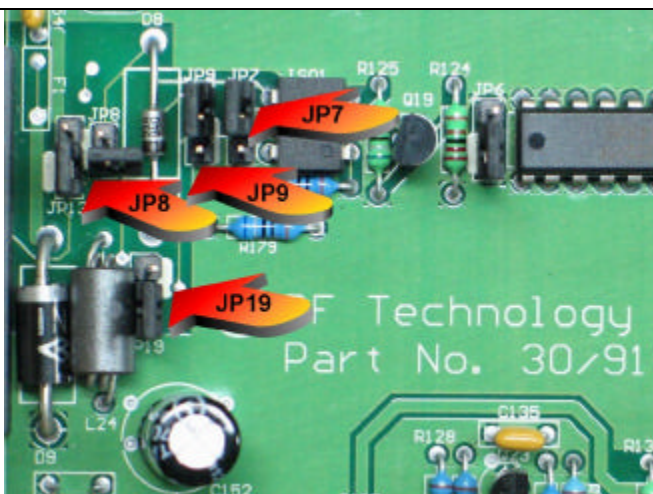
Transmitter
Move JP19 to pins 1-2
Open JP9



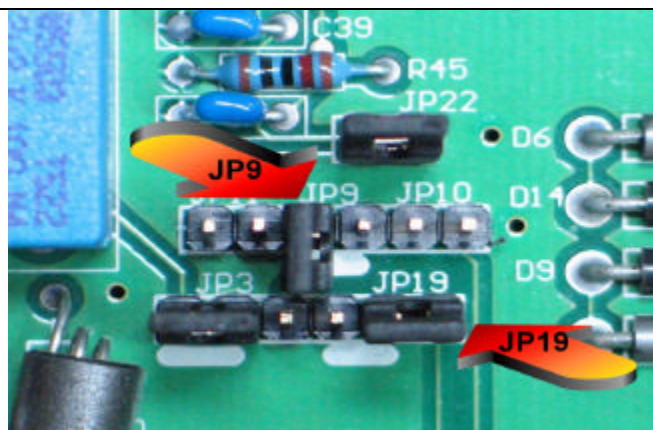
ATI
Link JP7
Link JP3

2.4 Trunking Controller e.g. Trident, Zetron

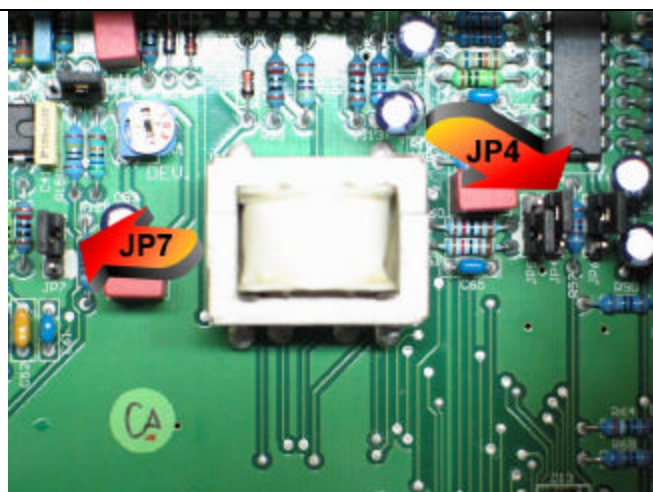
| Item | Receiver | Transmitter | ATI |
|------|------------------------|------------------------------|--------------------|
| 1 | Move JP19 to pins 2-3 | Move JP19 to pins (1-2) | - |
| 2 | Open JP7, JP8, JP9 | Open JP9, JP4(1-2), JP7(2-3) | - |
| 3 | For COS[-] to GND | - | Link JP7 |
| 4 | DISC output | - | Link PS4 C to RSSI |
| 5 | Line audio[+] not used | Line audio[+] not used | Cut JP5 LINE+ |
| 6 | Line audio[-] not used | Line audio[-] not used | Cut JP4 LINE- |
| 7 | - | Hi Z Audio[+] | Link PS3 C to HZ+ |



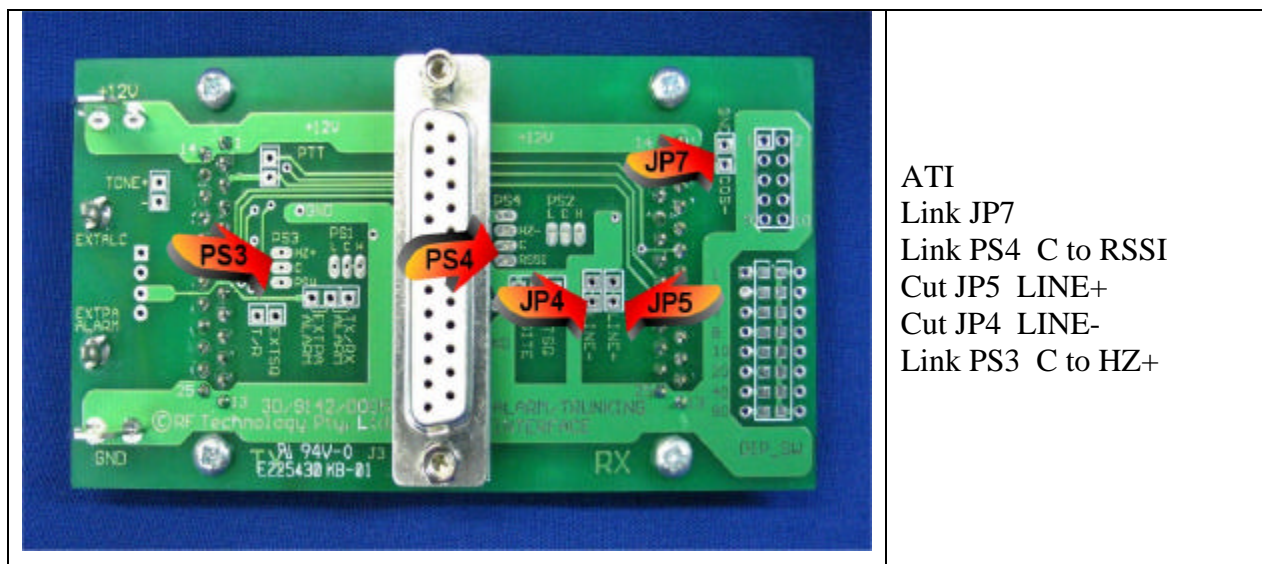
Receiver
Move JP19 to pins 2-3
Open JP7, JP8, JP9



Transmitter
Move JP19 to pins 1-2
Open JP9

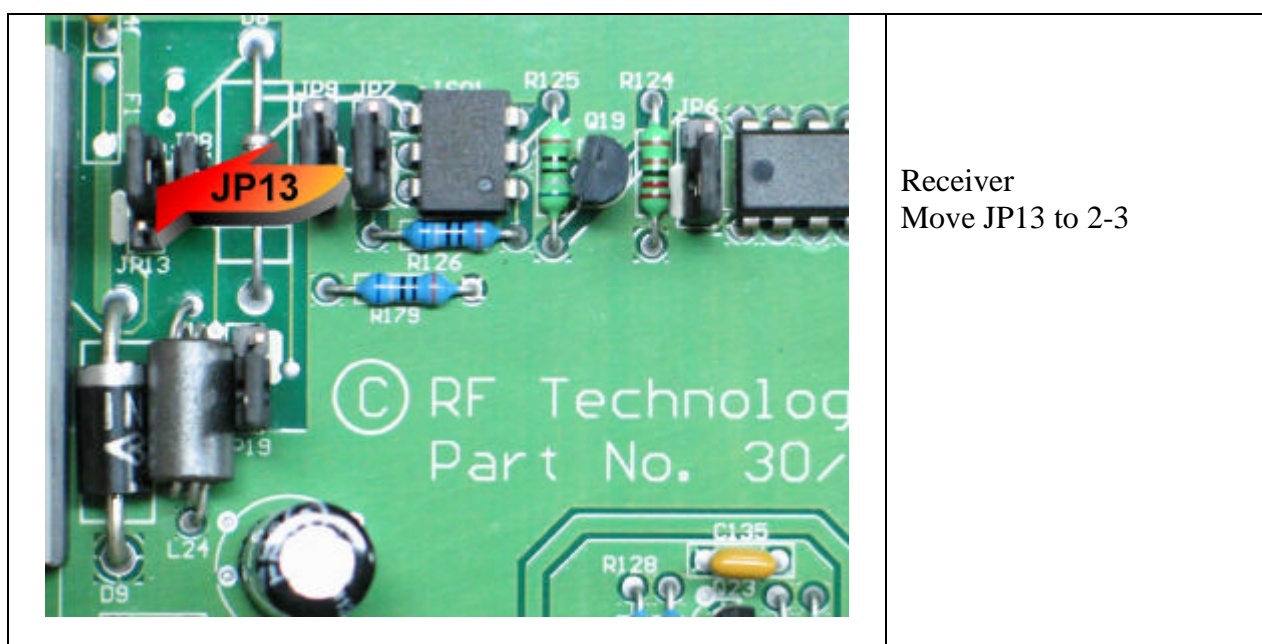


Transmitter
Move JP19 to pins 1-2
Open JP9
Move JP4(1-2), JP7(2-3)



2.5 Squelch Defeat function

| Receiver | Transmitter | ATI |
|------------------|-------------|-----|
| Move JP13 to 2-3 | - | - |



An active low signal on the ATI pin 16 will override the receiver SQUELCH setting to OPEN SQUELCH.

3.0 Configuration

3.1 Trunking controller connections

Typical connection for LTR, NTS Passport and MPT controllers

** for most trunking applications

Controller inputs (from Receiver). RX jumper links discussed.

AUDIO: RX Discriminator** audio is best as it contains both high and low frequency components. See Item 4 Fig 2.4
The 600 ohm audio line output is not used. See Item 5 & 6 Fig 2.4

COS: COS[+] is the receiver SQUELCH detect. It provides an open collector output if COS[-] is grounded. See Item 3 Fig 2.4

Jumper settings: JP19 pins (2-3) connects RX Alarm output to ATI. Item 1 Fig 2.4
Open JP7, JP8, JP9. Removes DC from line audio

Controller outputs (to Transmitter). TX jumper links discussed.

DATA: Option 1.
Analog & digital signals (LTR or MPT)
Use TX TONE[+] or TX TONE[-]** input, set links on JP8 to 2-3, 5-6. JP16 1-2 (default) for LTR or MPT protocols
To bypass 250Hz low pass filter, link JP17 (for MPT)
To increase level sensitivity, fit R157, 100K resistor (for MPT)
To decrease level sensitivity, insert a series 47K resistor or higher at the input (for LTR)

Option 2.

DCS and Low frequency digital signals (NTS Passport)
Use TX TONE[-]** input, remove JP22 link. Move link on JP16 to 2-3
To decrease level sensitivity, insert a series 1M resistor or higher at the input (for NTS)

AUDIO: TX HiZ[+]** input , move link on JP4 to 1-2. See Item 7 Fig 2.4.
Move JP6 2-3 for 20dB attenuation.
Move link on JP7 to 2-3 for flat response
The 600 ohm audio line input is not used

PTT: TX PTT** input , an active low signal switching to ground will key up the transmitter

Jumper settings: JP19 pins (1-2) connects TX Alarm output to ATI. Item 1 Fig 2.4
Open JP9 removes DC, JP4(1-2) select HiZ in, JP7(2-3) flat response

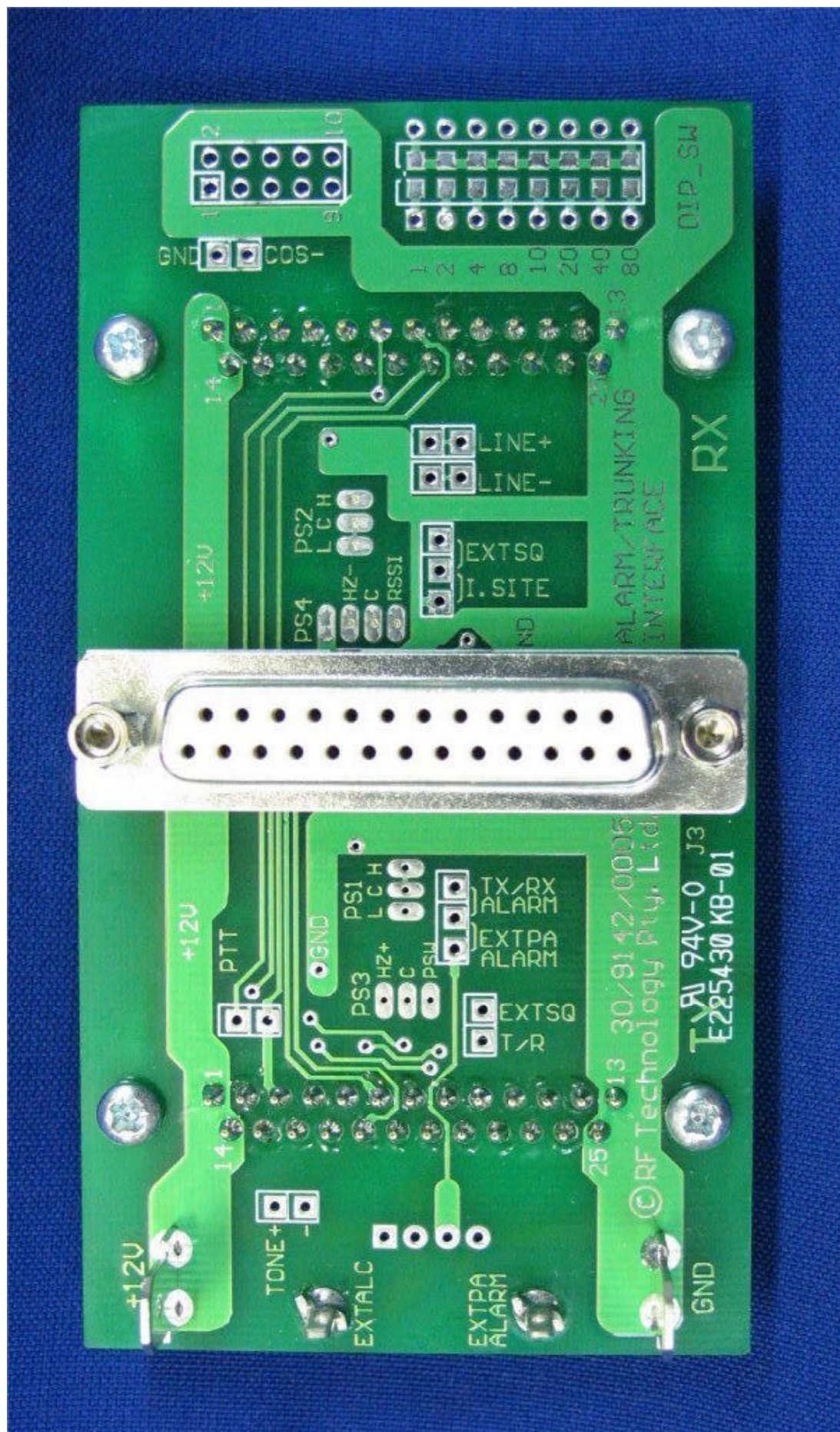
4.0 Installation

The ATI card replaces the standard rear panel RX and TX pcb cards.

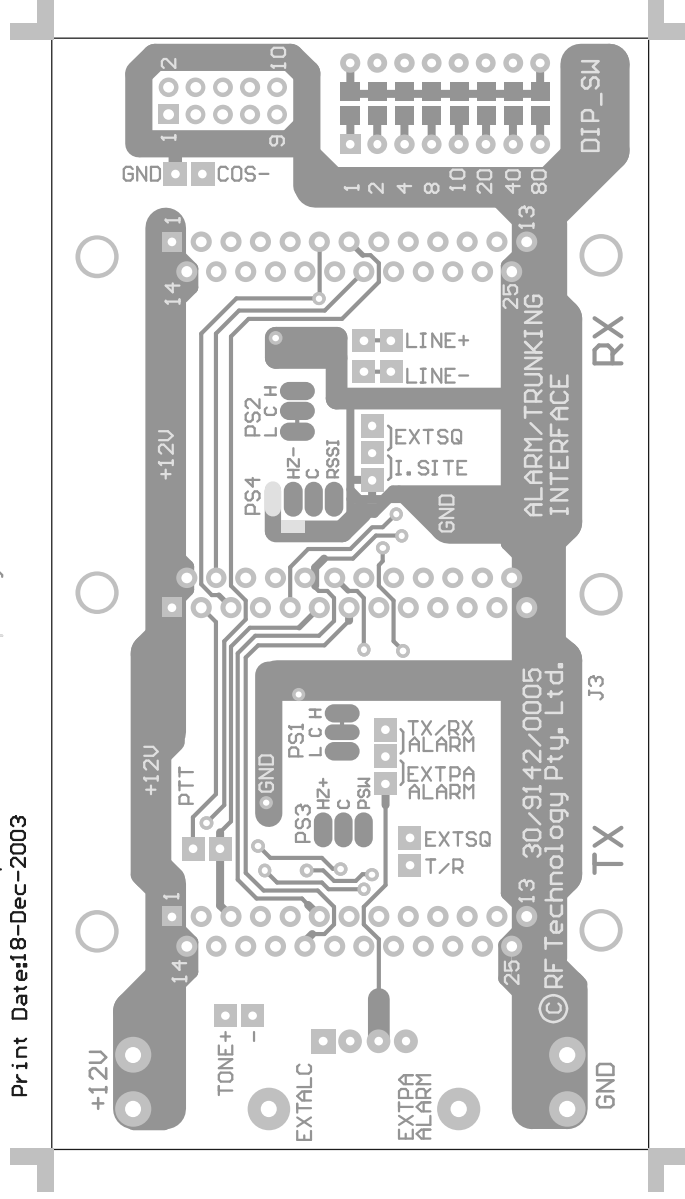
Two spade connectors provide connection to 12V DC and GND.

An ALC pin allows connection of External Power Amplifier ALC line.

The DB-25F connector carries all other input/ output lines.



Top Balder Mask



Bottom Overlay
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