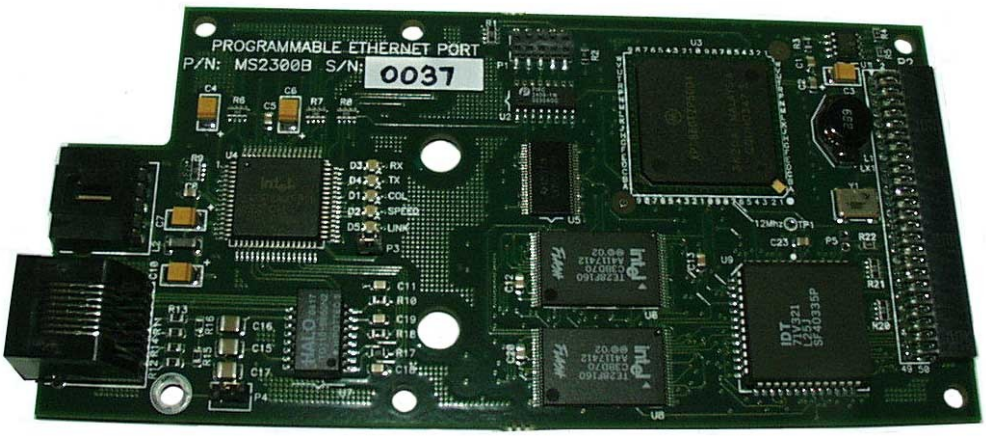
Ethernet PA Controller

Your Low-Risk, Low-Cost Solution for DMR Ethernet Compatibility



The PEP (Programmable Ethernet Port) board is a proven low-risk approach for new and existing power amplifier vendors and has already been qualified as being compliant with General Dynamics specifications for timing, frequency hopping, and proprietary Ethernet message protocol.

- Reduced development time/cost for new and existing PA vendors
- Compatible with all General Dynamics HF or VHF/UHF PA's (100W, 100W-A, 200W, 200W-A, 500W)
- On-board FPGA ensures real-time processing of critical Ethernet messages necessary to satisfy demanding timing of frequency hopping waveforms
- Firmware / FPGA Upgradeable over Ethernet Bus
- Prototypes available for immediate delivery
- Proven compatibility with General Dynamics DMR Specifications
- Filters DMR Ethernet messages and provides only PA-relevant information to your processor
- Automatically generates the necessary real-time discrete signal outputs (Duplex, Key, Frequency Strobe)
- Interfaces with your PA's processor using a 3.3V DPRAM Interface
- Interrupt driven communication architecture

Don't waste your time and money reinventing the wheel. Instead, focus on what you do best; Proving world class power amplifiers!

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Specifications:

Size	5.625 W x 2.727 D (See Note 1)
Power	3.3V ± 0.15V @ 450 mA (320 mA typ) 5.0V ± 0.25V @ 250 mA (210 mA typ)
Connectors	50 Pin, 2mm for Processor Interface RJ45 for Ethernet 5 Pin Molex for Power
Interface to PA Processor	3.3V DRPAM Bus (11 Address, 8 Data, /CS, R/W, /OE, /INT) Message Specification Available

Note 1: Board outline can be modified to meet new customer demands for a nominal re-layout charge.
Note 2: The DC power must be clean and free from RF.

CONNTECTOR P2 - DPRAM INTERFACE			
PIN	FUNCTION	DIRECTION w.r.t. PEP	NOTES
1	GND		
2	PA_A10	Input	DPRAM Address
3	PA_A9	Input	DPRAM Address
4	PA_A8	Input	DPRAM Address
5	PA_A7	Input	DPRAM Address
6	GND		
7	PA_A6	Input	DPRAM Address
8	PA_A5	Input	DPRAM Address
9	PA_A4	Input	DPRAM Address
10	PA_A3	Input	DPRAM Address
11	GND		
12	PA_A2	Input	DPRAM Address
13	PA_A0	Input	DPRAM Address
14	PA_A1	Input	DPRAM Address
15	GND		
16	GND		
17	PA_D7	Bidirectional	DPRAM Data
18	PA_D6	Bidirectional	DPRAM Data
19	No Connect		No Connect
20	PA_D5	Bidirectional	DPRAM Data
21	PA_D4	Bidirectional	DPRAM Data
22	PA_D3	Bidirectional	DPRAM Data
23	PA_D2	Bidirectional	DPRAM Data
24	GND		
25	PA_D1	Bidirectional	DPRAM Data
26	PA_D0	Bidirectional	DPRAM Data
27	/PA_BUSY	Output	DPRAM /BUSY Not req d'for most applications
28	GND		
29	/PA_IRQ	Output	DPRAM /IRQ
30	/PA_OE	Input	DPRAM /OE
31	PA_R/W	Input	DPRAM R/W
32	GND		
33	GND		
34	/PA_CS	Input	DRPRAM /CS
35	No Connect		No Connect
36	TR	Output	Discrete Transmit/Receive a.k.a Duplex
37	GND		
38	KEY	Output	Discrete KEY on/off
39	STROBE	Output	Discrete Freq STROBE
40	GND		
41	GND		
42	SPARE1	Output	Discrete Spare #1 - not used
43	SPARE2	Output	Discrete Spare #2 - not used
44	---		(not implemented - leave as no connect)
45	GND		
46	GND		
47	---		(not implemented - leave as no connect)
48	No Connect		No Connect
49	No Connect		No Connect
50	No Connect		No Connect

A SAMTECH SQT-125-01-L-D-RA right angle connector is on the PEP board. It can connect to PA Processor Board using a 50 pin 2mm header where the two cards are butted together. Other options such as ribbon cable or stacking daughter card are possible, contact HED for details.

CONNTECTOR J2 - ETHERNET		
PIN	FUNCTION	NOTES
1	Out+	Ethernet Output+
2	Out-	Ethernet Output-
3	In+	Ethernet Input+
4	Termination	ESD Termination
5	Termination	ESD Termination
6	In-	Ethernet Input-
7	Termination	ESD Termination
8	Termination	ESD Termination

An AMP 555164-1 right angle connector is used on the PEP board. The mate can be any standard RJ45 Ethernet plug (not supplied)

CONNTECTOR J1 - POWER CONNECTOR		
PIN	FUNCTION	NOTES
1	GND	GND
2	+5.0V	+5.0V @ 250mA
3	GND	GND
4	+3.3V	+3.3V @ 450mA
5	GND	GND

A Molex 70553-0004 right angle connector is used on the PEP board. It mates with 1X Molex 50-57-9405 Housing and 5X Moles 16-02-0103 Crimps (not supplied)