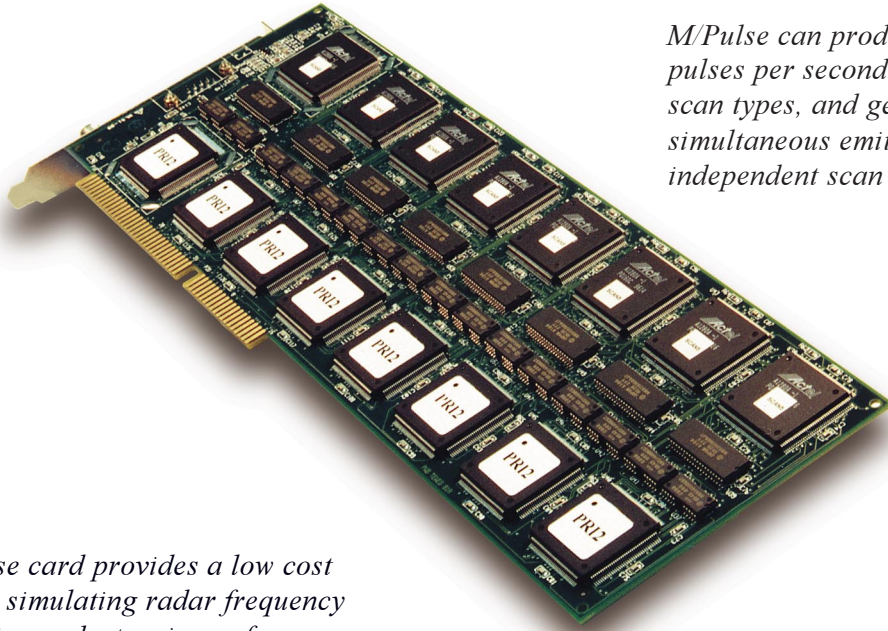


# M/Pulse

DIGITAL PULSE GENERATOR FOR ELECTRONIC WARFARE TRAINING



*M/Pulse can produce over six million pulses per second, create sixteen different scan types, and generate up to eight simultaneous emitters, each with its own independent scan type.*

*The M/Pulse card provides a low cost method for simulating radar frequency emissions in an electronic warfare training environment.*

## OVERVIEW

With RDSI's M/Pulse card, you can now benefit from advanced electronic warfare training capabilities without the associated traditional high cost. M/Pulse is a low-cost training solution which operates in a standard off-the-shelf personal computer.

## KEY FEATURES

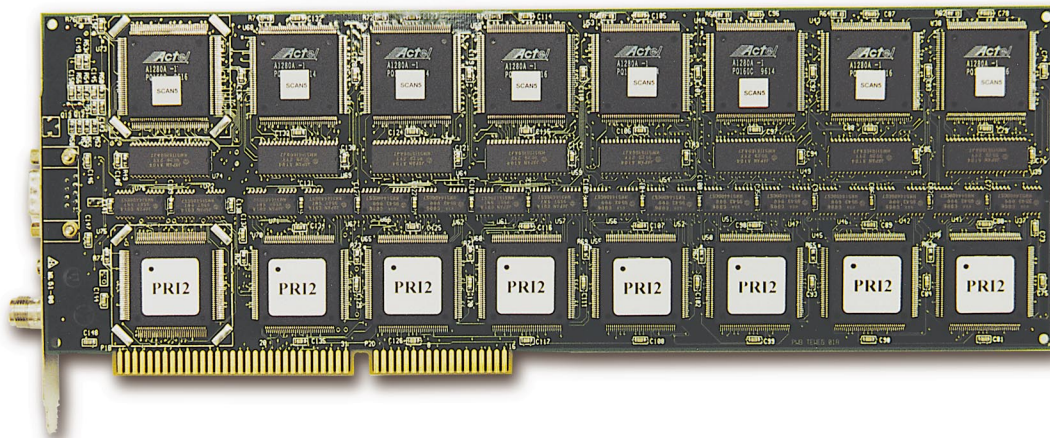
- Low cost training implementation
- Standard PC ISA bus card
- Sixteen scan types
- Over six million pulses per second
- Eight independent channels

**SCAN TYPE TABLE**

Scan Type	Characteristic	Parameter/Resolution
Circular	Seconds/Revolution	0.01 to 60.00 (0.01 SPR resolution)
Bi-directional (Horizontal or Vertical)	Seconds/Revolution Horizontal Sector Width Vertical Sector Width	0.01 to 30.00 (0.01 SPR resolution) 1° to 270° (1° resolution) 1° to 90° (1° resolution)
Unidirectional (Horizontal or Vertical)	Illumination Rate Horizontal Sector Width Vertical Sector Width Blanking Time	10.00 to 150.00 Hz (0.01 Hz resolution) 1° to 270° (1° resolution) 1° to 90° (1° resolution) 1 to 50 msec (1 msec resolution)
Conical	Illumination Rate	10.00 to 150.00 Hz (0.01 Hz resolution)
Steady	Steady	
Lobe Switching	Number of Lobes Lobe Rate	2 or 4 2.00 to 125.00 Lobes/sec
Bi-directional Raster	Number of Bars Illumination Rate Frame Period Sector Width	1 to 16 0.10 to 60.0 Hz 0.016667 to 180.000000 sec 1° to 270° (1° resolution)
Unidirectional Raster	Number of Bars Illumination Rate Frame Period Sector Width Blanking Time	1 to 16 0.10 to 60.0 Hz 0.016667 to 180.000000 sec 1° to 270° (1° resolution) 0 to 2000 msec/Bar
Palmer Raster	Number of Bars Illumination Rate Frame Period Conical Scan Rate Sector Width	1 to 16 0.10 to 60.0 Hz 0.016667 to 180.000000 sec 10.00 to 150.00 Hz (0.01 Hz resolution) 1° to 270° (1° resolution)
Palmer Circular	Seconds/Revolution Conical Illumination Rate	0.01 to 60.00 (0.01 SPR resolution) 0.10 to 60.00 Hz
Spiral	Level Illumination Rate Frame Period	1 to 16 1.00 to 100 Hz 0.01 to 18.00 sec (0.01 sec resolution)
Helical	Level Illumination Rate Frame Period	1 to 16 1.00 to 100 Hz 0.01 to 18.00 sec (0.01 sec resolution)
Circular with Vertical Sector	Seconds/Revolution Vertical Sector Width	0.01 to 60.00 (0.01 SPR resolution) 1° to 90° (1° resolution)
Phased Array (Agile Beam)	Scan Period	0.01 to 60.00 sec (0.01 sec resolution)
Palmer Bi-directional	Seconds/Revolution Sector Width Conical Illumination Rate	0.01 to 30.00 (0.01 SPR resolution) 1° to 270° (1° resolution) 1.00 to 150.00 Hz (0.01 Hz resolution)
Palmer Unidirectional	Illumination Rate Sector Width Blanking Time Conical Illumination Rate	10.00 to 150 Hz (0.01 Hz resolution) 1° to 270° (1° resolution) 1 to 50 msec (1 msec resolution) 1.00 to 150.00 Hz (0.01 Hz resolution)

## RADIO FREQUENCY CHARACTERISTICS

Parameter	Characteristics	Res
Frequency	16 Bit encoded	1 Bit
Frequency Agility	0% to 100% Band	16 Bit
Number of Frequency Steps	1 to 65535	1
Programmable Freq Deviation	0 - 100%	16 Bit
Frequency Agile Pattern	Sawtooth, Stairstep, Random,Free Form	

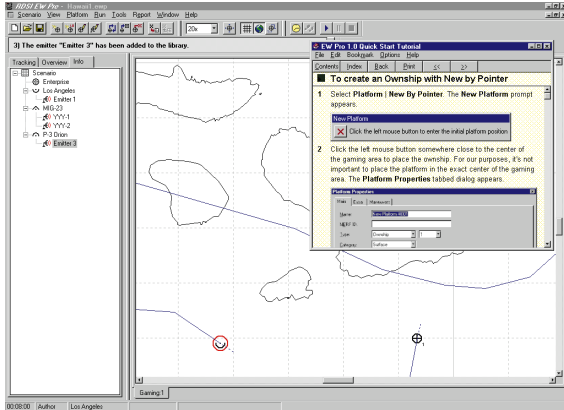


### External Interface

The M/Pulse card interfaces with a full length ISA slot on a standard personal computer. An RS-422 connector is available to interface with various equipment such as the AN/SLQ-32. A video signal output, simulating the selected scan type with associated parameters, is available to interface with various analysis equipment such as an oscilloscope or an AN/ULQ-16. Additionally, an audio output mini-jack supporting either a headset or speakers is provided.

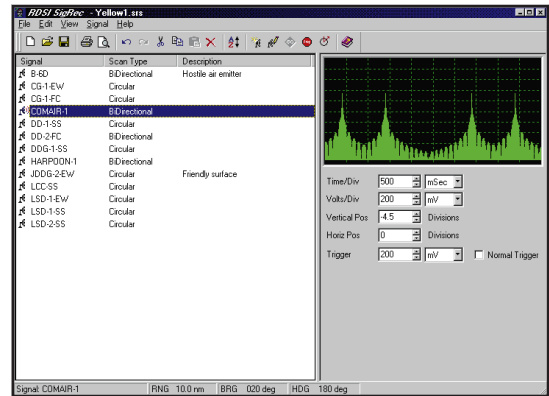
## Control Software

The M/Pulse card can be controlled by various applications, such as RDSI's EW Pro or RDSI's SigRec application. It can also be controlled with non-RDSI software by using an RDSI interface library.



*RDSI EW Pro*

*RDSI SigRec*



## PULSE CHARACTERISTICS

Parameter	Characteristics	Accuracy/Res
PRI Range	1.25 - 50 msec	$1 \times 10^{-3} / 50$ nsec
Pulsewidth Range	50 nsec to 3 msec	$1 \times 10^{-3} / 50$ nsec
Number of Stagger Levels	1 to 65535	1
PRI Jitter (Pk-to-Pk/PRI)	Whole Range	
Pulse Freq Modulation Rate	1 - 400 Hz	
PFM Programmable Deviation	100% of PRI Range	
<i>Note:</i> $1 / (\text{PFM}(\text{Hz}) \times \text{PRI}(\text{seconds})) \leq 65535$		
Pulse Group Modulation (PGM)		1 PPG
PGM Pulses per Group	1 to 65535	
PGM Frame Rate	50 to 500 Frames/sec	

## **M/PULSE SYSTEM REQUIREMENTS**

- Personal computer with available full-length ISA slot.

## **EW PRO SYSTEM REQUIREMENTS**

- Microsoft Windows 95<sup>®</sup> or Windows NT<sup>®</sup> version 3.51 or later
- 16 MB of RAM (24 MB of RAM for Window NT<sup>®</sup> )
- 6 MB of hard disk space
- VGA graphics adapter
- Mouse or other compatible pointing device

## **SIGREC SYSTEM REQUIREMENTS**

- Microsoft Windows 3.1 with Win32s<sup>®</sup>, Microsoft Windows 95<sup>®</sup> or Windows NT<sup>®</sup> version 3.51 or later
- 8 MB of RAM (16 MB of RAM for Window NT<sup>®</sup> )
- 3 MB of hard disk space
- VGA graphics adapter
- Mouse or other compatible pointing device

## **FOR MORE INFORMATION**

- For more information call 703-893-9533 x1090 or email [mpulse@rdsi.com](mailto:mpulse@rdsi.com)