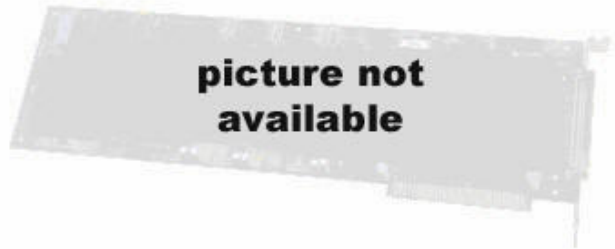




# BBG-ACP/ARP Radar Azimuth Converter Card

## Description



The BBG-ACP/ARP is an ISAbus compatible card which interfaces to any slot of an IBM PC or clone. The BBG-ACP/ARP accepts the Azimuth Reference Signal from a radar system and the ownship heading information to compute the TRUE and RELATIVE Azimuth Reference Pulses and the Azimuth Change Pulses. These signals, combined with the radar video signal, enable display of the radar situation picture on many commercial and military radar consoles.

## Features

- IBM PC COMPATIBLE
- INPUTS:
  - AZIMUTH REFERENCE PULSE
  - VIA DISCRETE OR SYNCHRO
  - OWNERSHIP'S HEADING VIA
  - PCbus, SYNCHRO/RESOLVER
  - OR SERIAL
- TRUE OR RELATIVE OUTPUTS:
  - AZIMUTH REFERENCE PULSE
  - AZIMUTH CHANGE PULSE
- STAND-ALONE MODE WITH ADDITIONAL +5V POWER SUPPLY
- CUSTOM IMPLEMENTATIONS AVAILABLE UPON REQUEST

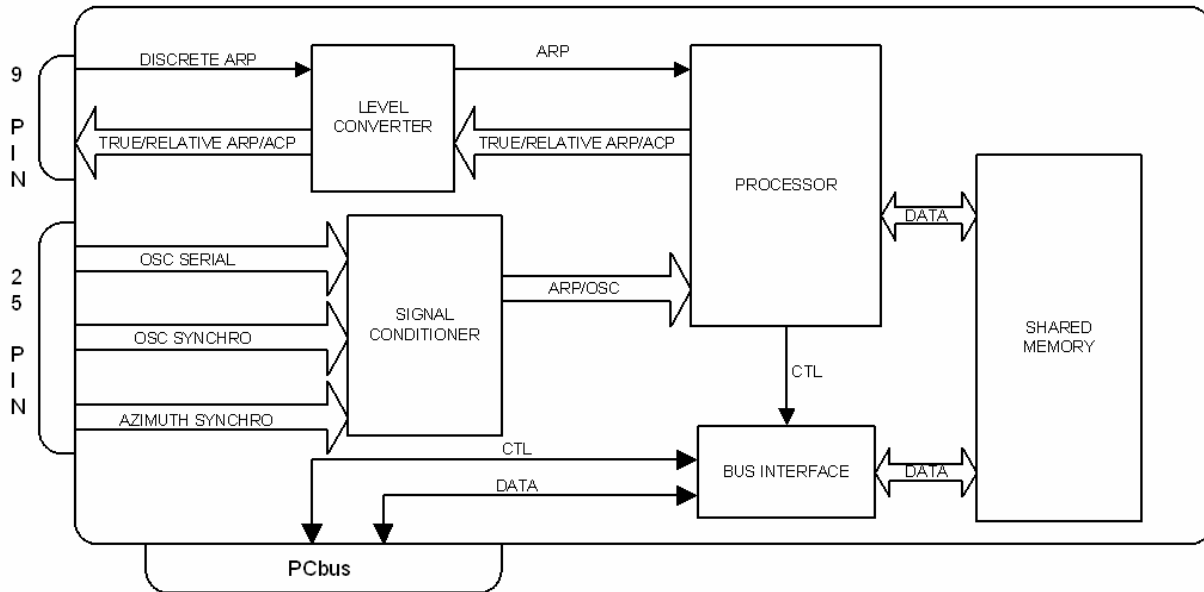
The BBG-ACP/ARP is a "SMART" interface due to the onboard processor which communicates with the PCbus through shared memory, thus, requiring minimum PC processor time. Ownship heading information can be inputted over the PCbus, via synchro/resolver inputs, or over a serial interface. The BBG-ACP/ARP serial message format uses the NMEA 0183 message structures and supports RS-232, RS-422, RS-423, RS-485, and MIL-STD-188C protocols.

DC power is supplied by the PCbus requiring no external power supplies. In situations not requiring a PC interface, the BBG-ACP/ARP operates in a "STAND-ALONE" mode. With the addition of an external +5 volt power supply, the onboard processor accepts the ARP and heading information to compute true and relative azimuth signals without the requirement of a PCbus.

Radar signals, reference inputs, and serial outputs are available on a 50 pin male (DB50P) connector.



## Chart



## Technical Specifications

BBG-ACP/ARP SPECIFICATIONS		
PARAMETER	VALUE	UNITS
POWER SUPPLY	5	Volts
	500	Milliamps
TEMPERATURE RANGE	0 to +50	°C
	-65 to +150	°C
PHYSICAL CHARACTERISTICS FULL SIZE IBM PC CARD	4.5 x 13.5 x 0.6	in.
	11.4 x 34.3 x 1.5	cm.

Table 1. BBG-ARP/ACP Specifications



## Overview

The BBG-ACP/ARP is a full-size IBM PC card which provides an interface between several commercial and military radar systems. The BBG-ACP/ARP operates on the ISAbus of any PC or operates in a stand alone mode using an external power supply. The BBG-ACP/ARP accepts the zero crossing pulse (Azimuth Reference Pulse) from a radar system and generates an Azimuth Change Pulse for each azimuth angle of the radar sweep. Ownship's heading information can be inputted via the ISAbus, a gyrocompass synchro input, or a NMEA-0183 serial interface. This heading information is processed by the onboard processor to provide both TRUE and RELATIVE radar information.

The SD-1108a can, also, be used without a computer in a stand alone mode. During power up or reset, an onboard microcontroller reads the configuration switch, configures the interface card, and provides all signals and control necessary to receive the ARP and heading information and output the TRUE and RELATIVE azimuth radar information.



**INPUT/OUTPUT**

The BBG-ACP/ARP interface accepts the following inputs:

INPUTS	
Ownship Course	Azimuth Info
Synchro	Synchro
Serial	Digital TTL
ISAbus	

The BBG-ACP/ARP interface produces the following outputs:

OUTPUTS		
True ARP	Relative ARP	ACP
TTL	TTL	TTL

**CONNECTOR LIST FOR BBG-ARP/ACP**

**I/O CONNECTOR TYPE: DC9PA**

CONNECTOR MATE: DC9S

PIN NO	SIGNAL	PIN NO	SIGNAL
1	ARP (INPUT)	6	GND
2	GND	7	TRUE ARP (OUTPUT)
3	ACP (OUTPUT)	8	GND
4	GND	9	VALID (OUTPUT)
5	RELATIVE ARP		



**I/O CONNECTOR TYPE: DB25PA**

CONNECTOR MATE: DB25S

PIN NO	SIGNAL	PIN NO	SIGNAL
1	N/C	14	N/C
2	TXD232 (OUTPUT)	15	N/C
3	RXD232 (INPUT)	16	AZ_S1 (INPUT)
4	N/C	17	AZ_S2 (INPUT)
5	N/C	18	AZ_S3 (INPUT)
6	N/C	19	N/C
7	GND	20	OSC_RL (INPUT)
8	N/C	21	OSC_RH (INPUT)
9	+5V	22	N/C
10	N/C	23	OSC_S1 (INPUT)
11	N/C	24	OSC_S2 (INPUT)
12	AZ_RL (INPUT)	25	OSC_S3 (INPUT)
13	AZ_RH (INPUT)		

\* NOTE: +5V is an output if using standard PCbus computer and an input if using stand alone mode.

