



## BRS Series – Radar Signal Processing Modules

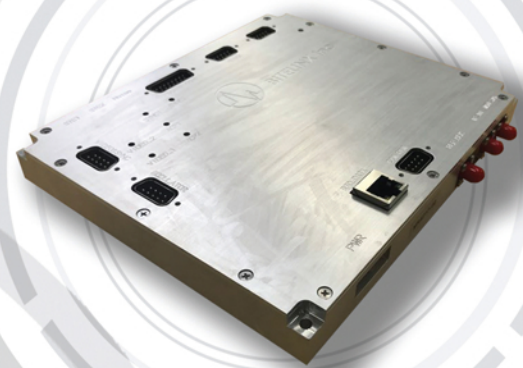
### Features

- Signal processors for X-band magnetron & SSPA
- Up to 30MHz IF bandwidth, 100/125MHz IF
- Chirped NLFM pulse (BRS-SM)
- Auto frequency calibration (BRS-MM)
- IEC62388 compliant (BRS-MM)
- Frame-based pulse operation (BRS-SM)
- Frequency diversity & agility (BRS-MM)
- CFAR, STC, PRF stagger, pulse integration

**The BRS-MM/SM** Series are high-speed radar signal processing modules. The modules include a transmitter for pulse generation and a receiver to process the reflected target signals. The BRS-MM is a signal processing module for a magnetron-based marine radar. The BRS-SM has signal processing module for SSPA-based radars, used in ground or aircraft applications. The integrated high DSP techniques have been proven to be reliable and superior in the field.

### Electrical features

Users can choose the intermediate frequency, either 100MHz, 125MHz or another specific frequency at the time of ordering. The signal bandwidth can be configured to be 30MHz max. It depends on the distance of the target. The input dynamic range is as wide as 50dB, 0 to -50dBm, regardless of the STC. The detection results are available for both analog and digital interfaces, and users can choose either one. The conventional analog interface consists of a set of signals, analog video, trigger, ACP and ARP. The digital interface is based on the Ethernet and accompanied by a compact protocol.



### Signal processing

All key functional blocks are implemented on a single integrated processor, minimizing the analog circuit. The BRS-SM invokes the NLFM pulse compression technique intended for application to SSPA-based radars. They also operate a frame-based pulse where multiple pulses of different lengths are simultaneously transmitted and received while the BRS-MM transmits a single pulse. The BRS-MM for magnetron-based marine radars has been fully tested under the conditions specified in IEC 62388. High DSP techniques applied include frequency diversity, CFAR, STC, PRF stagger, pulse integration, DDC and so on. The performance of those integrated in an ASDE has been tested in the field.

### Supplementary functions

Besides the main features, the BRS-SM/SM series each have such useful functions as AFC, Static/Blanking MAP, pulse expansion, ARP/ACP/Trigger manipulation, BIT and so on.

### Configurable registers

The configurable registers allow users to have easy access to the highly flexible combination of features.



## Specifications for BRS-SM

### Electrical specifications

Frequency (IF)	100/125MHz or else
Bandwidth	30MHz or less
Output power	-5dBm
Input dynamic range	50dB(0 ~ -50dBm)
In-band spurious	50dBc
Out-band spurious	65dBc
Pulse operation	Short : CW Medium : NLFM(downward) Long : NLFM(upward)
Pulse width	Short : 70ns Medium : 4us Long : 13us
Clutter suppression	CA-CFAR, Static MAP
Signal strengthening	Pulse compression, pulse integration
Echo/interference suppression	PRF Stagger, frequency diversity, blanking MAP
Input regulation	STC(2CH, 0.1 ~4.5V)
Interface	RF : SMA Digital : DSUB37, RJ-45
Primary power	7VDC, 2.5A

### Environmental specifications

Operating temperature	-20 ~ +50°C
Storage temperature	-40 ~ +85°C
Humidity	90%, non-condensing

### Dimensions & weight

Dimensions	180 X 160 X 30 mm <sup>3</sup>
Weight	780g

## Specifications for BRS-MM

### Electrical specifications

Frequency (IF)	75MHz or else
Bandwidth	30MHz or less
Input dynamic range	50dB(0 ~ -50dBm)
Pulse operation	Pulsed CW
Pulse width	75ns, 0.25us, 1us
Clutter suppression	CA-CFAR
Signal strengthening	Pulse integration
Echo suppression	PRF stagger,sector blanking
Input regulation	STC(2CH, 0.1~4.5V)
Interface	RF : SMA Digital : DSUB37, RJ-45
Primary power	7VDC, 2.5A

### Environmental specifications

Operating temperature	-20 ~ +50°C
Storage temperature	-40 ~ +85°C
Humidity	90%, non condensing

### Dimensions & weight

Dimensions	180 X 160 X 30mm <sup>3</sup>
Weight	780g

### For further information, Please contact : Bitelinx Inc.

#704, DoosanVenture-digm  
250, Hagui-ro, Dongan-gu, Anyang-si,  
Gyeonggi-do, Korea Republic, 14056  
Tel)+82-31-426-0987  
Fax)+88-70-4009-3929  
Email) hkim@bitelinx.com  
URL) <http://www.bitelinx.com>