



SAAB



FEATURES/BENEFITS:

- **Complete radar package** – reduces risk and eases integration into larger ATM system
- **High reliability and availability** through solid state design, full redundancy, small number of LRUs and extensive built-in diagnostics - results in low failure rates and low maintenance costs
- **Small, indoor/outdoor transceiver cabinet** – provides greater site flexibility and lowers installation costs

SR-3 HIGH-PERFORMANCE SURFACE MOVEMENT RADAR

For ANSPs and airport operators, large and small, who need a primary sensor to monitor traffic movement on the airport surface, the SR-3 delivers critical situational awareness and safety in all weather conditions. The SR-3 is a third-generation surface movement radar system that brings full standards compliance at a competitive installation and life-cycle cost.

Unlike other systems, the SR-3 is a complete package that can include the radar, antenna and extractor. Designed by Saab, the global leader in Advanced-Surface Movement Guidance & Control System (A-SMGCS), the SR-3 can serve as a vital element of a new A-SMGCS installation or as an economical replacement for a legacy radar.

The SR-3's unmatched frequency diversity optimizes all-weather performance and its solid-state design greatly enhances reliability. The system is optimized for low life-cycle cost and leverages a small transceiver with low installation cost; minimal power consumption; and a small number of Line-Replaceable Units (LRUs) for ease of maintenance. Full FAA and EUROCAE compliance makes the SR-3 by Saab the secure solution.

The SR-3 was designed by a team that has extensive experience in every aspect of an A-SMGCS, from the SMR to the controller working positions. As such, the SR-3 is easy to procure, deploy and maintain. Its design benefits from Saab's total-solution experience.



Saab's SR-3 provides robust performance in the key areas of detection performance, resolution, user control, reliability and maintainability. The system has three major subsystems: the antenna, the transceiver, and the Radar Data Processor (RDP).

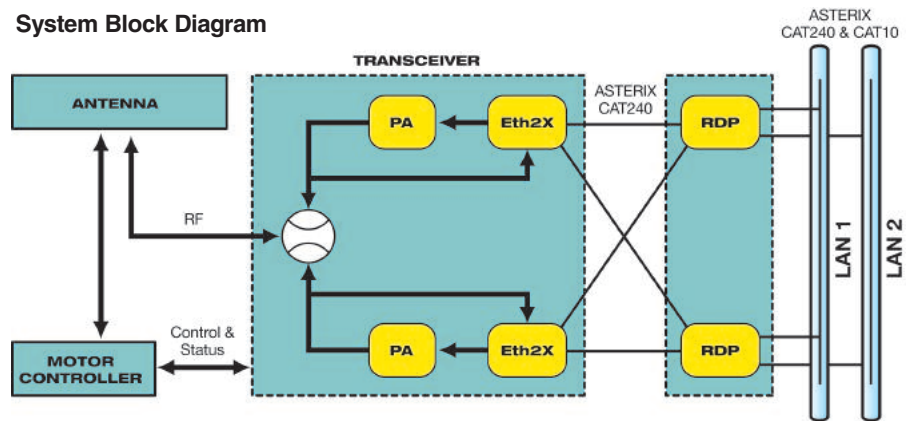
Using a circularly polarized, slotted waveguide antenna or a corporate feed antenna, cast aluminum turntable housing, and an associated control unit, the **Saab SR-3 Antenna** assembly provides a stable and reliable RF emitter and detector. Nominal antenna gain is 37 db characterized by an inverse cosec² elevation beam width of 10° and azimuth beam width of 0.35°. The pedestal assembly includes optical encoders and a 4 kilowatt 3 phase motor. The antenna control unit includes motor protection, user safety circuitry, pedestal monitors and optional anti-condensation heaters. The SR-3 is also fully compatible with multiple types of antennas, making it ideal for replacement of legacy systems where the antenna does not need to be replaced.

Featuring two fully redundant all solid state channels, the **Saab SR-3 Transceiver** handles all RF conversions and fully digital waveform generation and signal processing. In the event of a failure, the radar automatically switches to the

redundant channel and maintenance action can be performed without disrupting radar operational use. Each of the two redundant transceiver channels independently uses a full combination of 16 frequencies which improves performance in severe weather conditions.

Hosted on fully redundant, high performance COTS Linux servers, the **Saab SR-3 RDP** provides advanced field-proven adaptive radar data processing for target extraction in diverse clutter and multipath environment. The RDP exports target reports and radar video in standard ASTERIX format.

System Block Diagram



SR-3 Specifications (Fully ED-116 compliant.)

Antenna

Type	Multiple antenna types: circular polarized -slotted waveguide or corporate feed
Frequency Range	9.0 – 9.2 Ghz
Gain	37db
Horizontal BW @ 3 db	0.35°
Vertical BW @ 3 db	10° inverse cosec ²
Azimuth Encoders	Optical
Rotation Speed	60 rpm
Max Wind Load	270 km/hr
Dimensions	6.5m to 3m (l) x 0.64m to 1m (w) x 0.41m to 0.5m (h)
Weight	220 kg to 350 kg
Drive Motor Power	4kW 3 Phase 220/400 VAC
Environment	-50°C to +60°C 0% to 100% humidity

Transceiver

Transmitter / Receiver	X-band solid state, fully redundant transmit/receive channels
Frequency	Diversity of 16 frequencies
Peak Power	75 W per module
Pulse Repetition Frequency	16384 Hz
Waveform Synthesis	Digital
Signal Processing	Digital
RF Input	WG (WR90) 16 Waveguide
Video Out	ASTERIX CAT240 8-bit video over Ethernet
LRUs	5 unique LRUs, on-line replaceable
Control Monitoring	SNMP, HTTP
Dimensions	1.2m (h) x 0.96m (w) x 0.24m (d)
Weight	68 kg
Environment	-25°C to +55°C 0% to 100% humidity

RDP

HW/SW	COTS Linux servers with Saab software
Data/Signal Processing	Clutter, multipath rejection, plot extraction
Target Capacity	> 500 targets
Control & Monitoring	Dedicated CMS server
Recording / Playback	8 bit video, target plots
Adaptation	Fully adaptable algorithms
Input	ASTERIX CAT 240 8-bit video over Ethernet
Output	Target Reports (ASTERIX CAT 10), 1 or 4 bit video (ASTERIX CAT 240)
Dimensions	1U, 19" rack mountable
Environment	Standard indoor COTS server

Specifications subject to change without notice