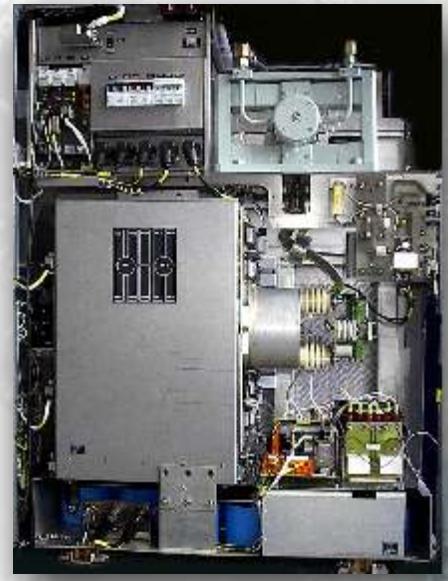
P-37 Radar Modernization Project (Bar Lock)

The P-37 is transportable, trailer-mounted, 2-D early warning and Ground Control Interception (GCI) radar. Unless modernized, this relatively simple, environmentally resistant and operationally proven system can't fulfill actual user requirements in point of:

- **Automatic, fully unmanned operation, based on digital signal processing**
- **Networking capability**
- **Increased jam resistance, operational reliability and availability**

Modernization includes

- **Transmitter**
- **RF feeder**
- **Receiver**
- **Signal processing**
- **Local and remote monitoring and control console**
- **Radar network interface**
- **IFF interrogator**
- **Local and remote control and diagnostics**



Transmitter

- **Solid-state modulator**
- **Up-to-date magnetron**
- **High stability pulse**
- **Spurious free spectrum**

RF feeder

- **Ferrite circulator**
- **Powerful receiver protection**
  - **twostage gas limiter**
  - **PIN diode limiter**
- **Receiver sensitivity time control STC**
- **Low noise amplifier**

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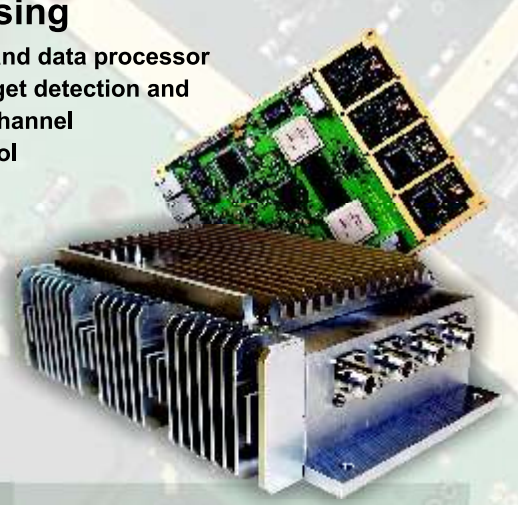
Receiver

- Digital, coherent
- A/D conversion on IF
- Output - digital I and Q signal components

Signal processing

- Fully digital signal and data processor
- Signal filtration, target detection and extraction in each channel
- Adaptive map control
- Output
  - synthetic data
  - analogue video



Parameter	Original	Modernization
Number of channels	5	5
Instrumented range	350 km	350 km
Detection (RCS 1m^2 SW1, Pd=0,8, Pfa=10^{-6})		
- range	205 km	300 km
- hight	16 km	25 km
- elevation	25°	28°
Accuracy		
- range	1000 m	<50 m RMS
- azimuth	60 min.	<10 min RMS
Resolution		
- range	1000 m	<730 m
- azimuth	1,5°	<1°
Improvement factor	15 dB	>35 dB
Receiver sensitivity	85 dB	89 dB
STC dynamics	-	50 dB
Target processing capacity	-	>100 / sec
Track processing capacity	-	>500 / rev

Local monitoring and control console

- Includes
  - colour LCD display
  - communication and display processor
  - narrow band radar network interface
- Displays
  - synthetic and analogue radar information
  - diagnostic data
  - full-scale control menu

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