tait
POWERED

TB9100 BASE STATION
P25 CAPABLE REPEATER/RECEIVER

FLEXIBLE DUAL-MODE FOR SEAMLESS MIGRATION

KEY FEATURES

Operation in VHF, UHF and 700/800 MHz frequency bands

Scalable network design with IP connectivity

Advanced capacity and interoperability with adherence to P25 standards

Extensive remote management and monitoring options with a focus on security

MIL-STD designed and tested for reliability to mitigate network outages

The Harris TB9100 delivers flexible, dual-mode operation to help users easily migrate from analog to P25 digital. A modular design, combined with intuitive programming software, makes this Base Station/Repeater an ideal P25 solution for conventional, trunked and simulcast mission-critical networks.

Its clean design and industry-standard interface provide easy connectivity to the rest of the network system. A front-loading 4U subrack simplifies system expansion and module replacements.

Operational efficiencies are enhanced with software-based programming capabilities, allowing users to add custom applications as well as configure and update the system. IP connectivity supports remote diagnostic analysis and performance monitoring, plus the ability to program alerts and alarms. Continuity of service is ensured with smart AC/DC switching.

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FEATURES AND BENEFITS

Interoperability and versatility

Fully P25-compliant, the TB9100 can be configured as a repeater or as a base station in a digital P25, analog FM or mixed-mode radio network.

Totally flexible task manager

Routines and code can be written quickly and easily, allowing fast development and delivery of custom applications.
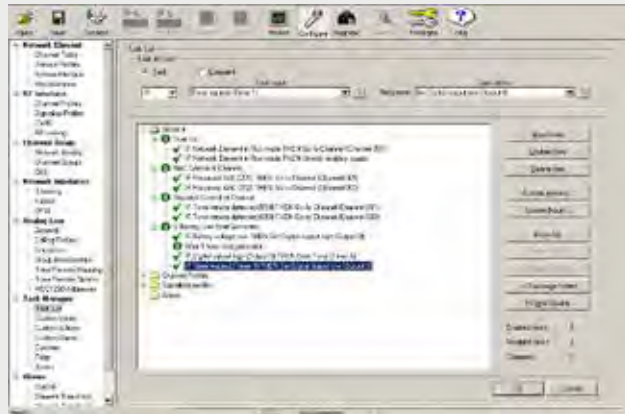
Small sub-routines can be written into the TB9100 task manager to deliver customized behavior for a specific situation.

Convenient Windows-based software programming

Adjusts to more than 150 parameters with intuitive drop downs, tick boxes and other easy-to-master software commands. Customer Service Software (CSS) makes the TB9100 easy to configure and upgrade.

The CSS enables remote configuration and real-time display of received and transmitted signals.

IP connection for ease of diagnostics

No special equipment is needed to ensure total control of a base station. Connect and configure alerts and alarms, monitor performance and administer the site remotely.

Integrated VoIP networking with voting

The TB9100 is networked using Voice over Internet Protocol (VoIP) with built-in centralized voting to eliminate hardware.

Interface enables easy connectivity

The clean back panel design, with industry standard interface, provides easy connectivity to the rest of the system and third-party vendors.

Back Panel of the TB9100 includes dual 50W systems with an AC/DC power management unit.

Front-loading modules slip into the 4U subrack. Building the system, replacing a module or accessing a system interface board is fast and simple.

TB9100 modules include:

- **Reciter:** Contains the receiver and exciter
- **Amplifier:** Available as 5W, 50W and 100W modules
- **Power Management Unit:** AC and/or DC powered and includes an auxiliary power supply
- **Network Board:** Provides access to multiple interfaces
- **Subrack:** Front panel and control panel

GENERAL

Frequency Bands	VHF	UHF	700/800MHz
Frequency Ranges	136-174MHz	380-520MHz	762-870MHz
Frequency Increment	0.125kHz	—	—
Channel Spacing	12.5kHz, 20kHz, 25kHz		
Electronic Switching Range	≥2% of the center frequency (e.g., 10MHz @ 500MHz)		
External Frequency Reference	10MHz or 12.8MHz		
Frequency Stability	±0.5ppm (-22°F to 140°F/-30°C to 60°C)		
Channels/Network Capacity	255		

Dimensions (H x W x D):
    Subrack (only)
    Subrack with front panel
	
	7in x 19in x 15.2in (177.8mm x 482.6mm x 386mm)
	7in x 19in x 16.1in (177.8mm x 482.6mm x 409mm)		

Weight - lb (kg) with AC/DC PMU	Single 5/50W 47.0lb (21.5kg)	Dual 100W 50.2lb (22.8kg)	
Operating Temperature	-22°F to 140°F (-30°C to 60°C)		
Environment Standards	MIL-STD-810C, D, E and F		
Power Supply	AC 88-264V (PFC)	DC 12V, 24V, 48V (Nominal +ve or -ve earth)	

AUDIO

	Input	Output
Audio Interfaces	600Ω Balanced Microphone	600Ω Balanced Monitor Speaker

Audio Interface Levels:
    300-3,400Hz
    67-300Hz
	
	-20dBm to 0dBm (nominal)
	-20dBm to -14dBm (nominal)
		
		-20dBm to 6dBm (nominal)
		-20dBm to -14dBm (nominal)

Audio Response (Analog)	+0.5/-2.0dB rel. 1kHz (300-3,000Hz)	
Audio Distortion (Analog)	<3% typical	

TRANSMITTER

	VHF	UHF	700/800MHz
Frequency Bands	VHF	UHF	700/800MHz

Adjacent Channel Power:
    Analog 20/25kHz
    Analog 12.5kHz
    Digital 12.5kHz
	
	<-70dB (EIA)
	<-60dB (EIA)
	<-60dB (IS-102)
		——	——

P25 Modulation Fidelity	<3% (TIA-102A)	—	—

Modulation Limiting:
    12.5kHz channel
    20kHz channel
    25kHz
	
	±2.5kHz
	±4kHz
	±5kHz
		——	——

Transmit Rise Time	≤2.5ms	—	—
Transmit Power Rating	Single 1/5W Base Station System Single 5/50W Base Station System Single 10/100W Base Station System		

FM Hum and Noise (300Hz–3kHz):
    12.5kHz and 20kHz channels
    25kHz channel
	
	-49.0dB (ANSI/TIA)
	 51.5dB (ANSI/TIA)		

Conducted/Radiated Emissions	<-36dBm (9KHz to 1GHz)	<-36dBm (9KHz to 1GHz)	<-20dBm (9KHz to 9GHz) <-30dBm (1GHz)
Emissions Designator	11K0F3E, 16K0F3E, 6K60F2D, 9K60F2D, 8K10F1E, 10K10F1E, 8K10F7E, 10K0F7E, 8K10F1D, 10K10F1D, 8K10F7D, 10K0F7D		

TX POWER CONSUMPTION

	12V Pa	12V PMu	24V PMu	48V PMu	110VaC	240Vac
Tx Standby @ 5W	0.81A	1.2A	0.63A	0.3A	—	—
Tx @ 50W	2.2A	2.7A	1.4A	0.65A	49VA	118VA
Tx @ 100W	9.2A	10.0A	5.4A	2.6A	138VA	177VA
	—	19.2A	10.3A	4.9A	239VA	262VA

RECEIVER

Sensitivity:	
Analog (12dB SINAID)	<0.25µV (-119.0dBm)
Digital (TIA/EIA-102)	0.21µV (-120.5dBm) @ 5% BER
Inter-modulation Rejection	80dB (ETSI) 85dB (ANSI/TIA)
Selectivity: **Analog (EIA-603)**	60dB
Digital Adjacent Channel Rejection	60dB TIA 102A + ETSI 300-113 (across all bands)
Spurious Response Rejection	≥100dB (ANSI/TIA)
Radiated Spurious Emissions	<-57dBm (EIRP to 1GHz) <-47dBm (EIRP above 1GHz)
Conducted Spurious Emissions	<-90dBm (EIRP to 1GHz) <-70dBm (EIRP above 1GHz)

REGULATORY DATA

For complete regulatory information please refer to the TB9100 Specifications Manual.

Specifications are subject to change without notice and shall not form part of any contract. They are issued for guidance purposes only.
All specifications shown are typical.

About Harris Corporation: Harris Corporation is a leading technology innovator that creates mission-critical solutions that connect, inform and protect the world. The company's advanced technology provides information and insight to customers operating in demanding environments—from ocean to orbit and everywhere in between. Harris has approximately $7.5 billion in annualized revenue and supports customers in more than 100 countries through four customer-focused business segments: Critical Networks, Space and Intelligence Systems, Electronic Systems and Communication Systems.

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