WAVECORE™

TRANSMIT/RECEIVE MODULE TEST SET

COMPREHENSIVE, HIGH-SPEED TESTING FOR DESIGN VERIFICATION AND PRODUCTION

Demand for transmit/receive (TR) modules has increased dramatically with the widespread use of dense, multi-element phased array antennas for modern radar systems serving land, sea and air applications. With this comes the need for fast, accurate and repeatable TR module testing. Textron Systems' WaveCore Transmit/Receive Module (TRM) Test Set performs the accurate measurements needed for engineering characterization with the speed high-volume production environments demand.

FAST, ACCURATE AND REPEATABLE TR MODULE TESTING

The WaveCore TRM is based on a combination of next-generation commercial, off-the-shelf instrumentation and Textron Systems' extensive test system software, hardware and systems integration experience. It incorporates the ease of use and flexibility required for engineering characterization applications, as well as the high throughput necessary for volume production.

Providing test throughput an order of magnitude better than previous generations, the test set also offers an optional unique, triple-head fixture allowing users to test two TR modules while loading a third. This further reduces test time on the production line. The test sets incorporate several features for ease of use, including a graphical user interface for troubleshooting during design verification, as well as interfaces for thermal plates and chambers, interface test adapters or fixture relays, and other external devices.

In addition, the system is designed for convenient removal of confidential program data to enable testing of classified modules. Included with the systems are automatic calibration and calibration verification software, which increase accuracy while reducing calibration cycles and enabling confidence checks. The system's self test software also can verify test station setup quickly and easily. The WaveCore TRM Test Set includes TR module communication integration software for quick interface between the tester and new TR modules. Further, Textron Systems provides customers complete source code, documentation and training on the system's preprogrammed test library, enabling customers to modify or add new test routines for their own unique requirements. The WaveCore TRM Test Set includes an optional 24-hour response time to keep systems up and running.

ADDITIONAL FEATURES AND BENEFITS

The WaveCore TRM Test Set can perform a comprehensive array of TR module tests such as:

- S-parameters (pulsed and continuous wave)
- Attenuation and phase control error
- Noise figure
- Gain and compression
- Isolation and cross modulation
- Spectral measurements (harmonics, spurious and third-order intercept)
- Timing measurements (delay and recovery time)
- Pulse profiling (pulse width variation, rise and fall time, amplitude and phase droop/ripple, pulse-to-pulse amplitude and phase stability)
- Power supply measurements (average and peak)
- Module control (commands, address, status and calibration)
- Noise figure/noise power ratio (NPR)

Ordering options:

- 9050A, 0.5-50 gigahertz (GHz) (low frequency to 0.1 GHz extension available)
- 9040A, 0.5-40 GHz (0.1 GHz extension available)
- 9026A, 0.5-26.5 GHz (0.1 GHz extension available)

TYPICAL PERFORMANCE

Frequency (GHz)	S21 Amp. Uncertainty Abs (+/-dB)*	S21 Phase Uncertainty Abs (+/-degrees)	S21 Amp. Uncertainty Rel. (+/-dB)	S21 Phase Uncertainty Rel. (+/-degrees)
0.1-3	0.1	0.5	0.01	0.05
3-18	0.15	1	0.02	0.10
18-26.5	0.2	1.5	0.02	0.15
26.5-40	0.2	2	0.02	0.20

*Assumes power range of -10 to -40 dBm

TYPICAL TEST TIMES

Pulsed S-parameters	9 frequencies, 8 phase states, 8 power levels	2.25 seconds (sec)
Pulsed compression level	9 frequencies	4.25 sec
Noise figure (NF)	9 frequencies	5.25 sec
Receive ITOI	9 frequencies	.5 sec

Powered by the latest family of Agilent Instruments:
PNA-X VNA
MXA® Signal Analyzer
MXG® Signal Generator
DSO Scope

Textron Systems
Electronic Systems

124 Industry Lane
Hunt Valley, MD 21030 800-655-2616
electronicsystems@textronsystems.com
www.textronsystems.com/electronicsystems

TEXTRON Systems