

# 7700 Integrated Microwave Test Solution

**AEROFLEX**  
A passion for performance.



A complete test environment for automated production and integration test of RF components and modules

## A Complete RF Test Environment

- Delivered ready to test with a fully featured execution and development environment
- Full set of common RF measurements
- Fully integrated Device Under Test (DUT) power and multi-state control
- Fully integrated control of peripherals such as temperature chambers
- Architected to support ATE

## A True Synthetic Architecture

- Utilizes a common set of hardware for all stimulus and response functions
- Smaller footprint than traditional "rack and stack" instruments
- Mature system level calibration scheme
- Reduced hardware cost compared to full instrument-based test system
- New capability can be added incrementally at low cost with little impact to existing measurement sequences

## Complex Device Testing Capable

- Frequency range 1 MHz to 6 GHz (expandable to 32 GHz)
- Complete measurement suite including S-parameters for full characterization of devices such as LNAs, VCOs and transceiver modules.
- Control of device states built into measurements

The 7700 Integrated Microwave Test Solution provides RF component, module and system manufacturers an advanced and flexible test environment to meet today's requirements and tomorrow's challenges. By leveraging the architecture of the synthetic product family and hardware from the Aeroflex Common Platform product line, the 7700 offers unprecedented capability in a condensed footprint.

The 7700 provides best-in-class performance up to 6 GHz for the most demanding RF testing applications. The 7700's unique synthetic architecture allows for measurement throughput several times faster than rack and stack. It also comes standard with several built-in measurement, test executive and reporting tools to accelerate automated test development. Many additional measurement personalities are also available from Aeroflex or may even be developed by the end user.

The 7700 provides the most capable, flexible and scalable synthetic test instrumentation with the lowest cost of ownership in the industry. While the base model is fully featured, our state-of-the-art modular hardware and software components allow a 7700 to be configured with options to provide a total measurement solution with unmatched operational efficiency, upgrade capability and obsolescence protection.

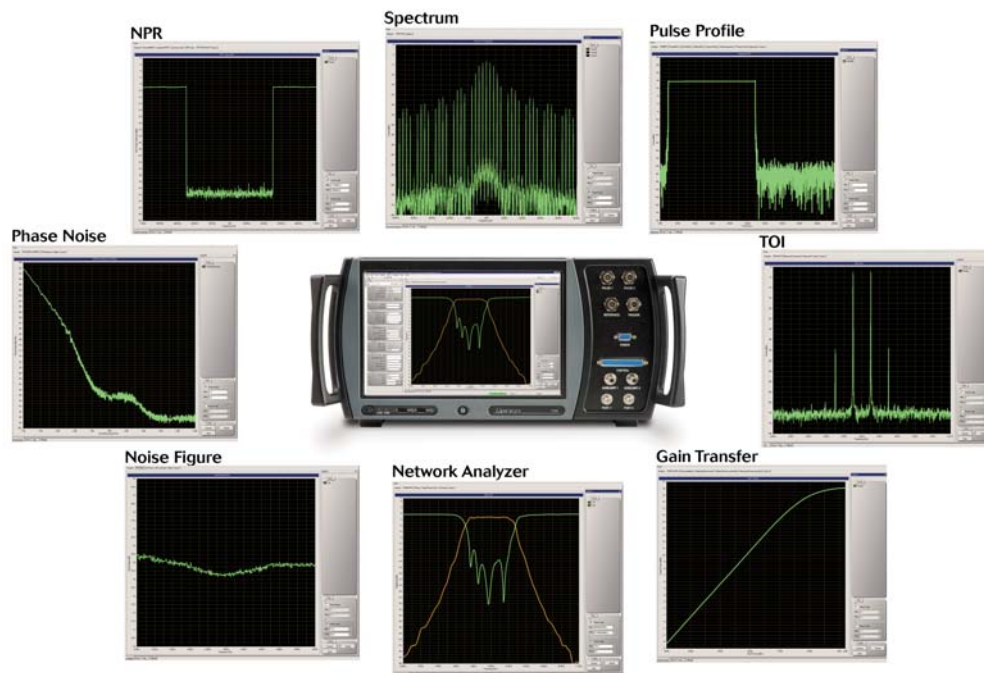


Figure 1. The 7700 includes a complete measurement suite that would normally require a full rack of instrumentation.

### Comprehensive ATE Solution

The 7700 is a complete automated test system housed in an incredibly small footprint. The solution includes a fully-functional test executive called the Aeroflex Measurement Console (AMC). Using the production test sequences provided with the base model, the 7700 includes the capability to emulate the functionality of the following instrumentation:

- Vector signal generator
- Spectrum analyzer
- Vector network analyzer
- Oscilloscope
- Power meter
- Frequency counter
- Noise figure meter
- Phase noise analyzer

But the 7700 does not just replace test equipment. It is a fully integrated ATE solution that has the capability to control all aspects of production test including the Device Under Test (DUT), remote switching hardware, thermal chambers, etc.

### Reduced Cost of Test

The cost of production testing does not end with the price of the hardware. In fact, ATE development and maintenance costs are often much greater than the initial hardware investment. Aeroflex understands the importance of reducing the total cost of test and has specifically designed the 7700 to do just that. Unlike traditional rack and stack instruments, the 7700 is a synthetic solution that provides tight coupling of signal generation, measurements, and DUT control. This removes the additional software overhead and measurement processing necessary to make independent calls to several instruments and the DUT when executing a test. In the 10+ years of delivering similar

synthetic solutions, Aeroflex has received customer feedback that this approach has consistently yielded a better than 4X improvement in measurement throughput over traditional instruments.

In addition, by providing a complete turnkey ATE solution, the 7700 saves device manufacturers months of test system development and integration time. Finally, calibration of the 7700 is handled at the system level, using traceable standards. This approach produces the best possible system performance and reduces the errors and overall system uncertainty associated with piecemeal calibrations. In addition, system level calibration increases system availability and reduces support costs by eliminating the need for long calibration cycles, calibration services, and calibration equipment carts.

### Future-Proof Design

When selecting a test solution, RF device manufacturers are often faced with a difficult decision: acquire a system with just enough performance to meet today's needs or procure a more expensive solution to cover the unknown requirements of tomorrow. The 7700's true synthetic architecture makes this decision much easier. With traditional instrumentation, when new measurements or increased performance are required, the test engineer is forced to replace the instruments used in the test system. Measurement software which was developed using these instruments will need to be modified or completely rewritten as well. When considering these factors, it is often more economical to simply replace the entire system rather than upgrade to new capability. With the 7700's modular synthetic approach, most new measurements will require only a new software sequence. When new hardware is needed to meet new requirements, such as higher instantaneous bandwidth, typically only a couple of PXI cards will need to be replaced. Since the 7700 measurement sequences utilize a synthetic hardware driver layer, none of the existing measurement sequences will be affected with the addition of the new hardware. It is even possible to add modules to configure the 7700 to cover RF frequencies up to 32 GHz.

## Aeroflex Measurement Console (AMC) – A Complete Test Executive and Measurement Development Environment

The Aeroflex Measurement Console (AMC) provides a complete measurement and development environment, including test execution, sequencing of multiple tests, and reporting of test data as well as test development and debug. In addition, the overall software architecture of the 7700 provides a flexible platform that can fit into most existing operational scenarios.

### AMC – Test Execution

Figure 2 illustrates the major features of an AMC measurement panel. From this interface, the test engineer or operator may select and execute tests, create sequences of tests, input variable parameters, access test results, set up default settings and parameters, and perform a wide variety of test related functions. The display includes a tree view of available test sequences, an area for user interactive input of variable parameters and a window for viewing the test results.

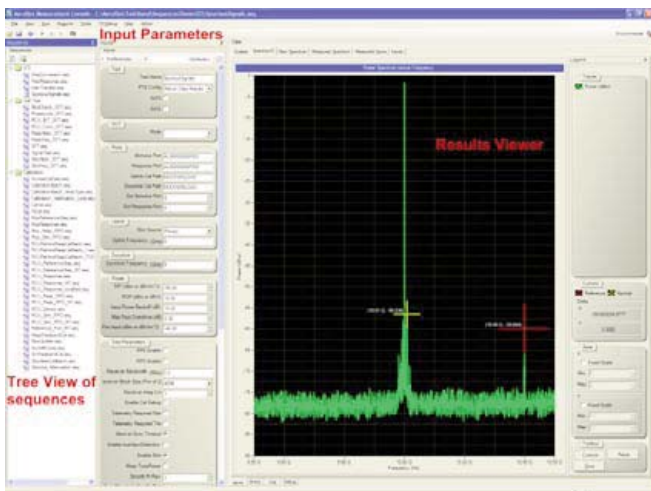


Figure 2. The 7700 user interface screen

The user input area of the panel is defined within the measurement sequence and may be modified by any user with the appropriate privileges. This allows test developers to customize the look and feel of the display provided to the user, without the need to modify any compiled software. Additionally, since measurement sequences are editable, a developer may customize standard Aeroflex measurement sequences to provide the exact look, feel and operation required to meet individual needs.

The AMC presents measurement data in both graphical and tabular form. The results window provides a series of tabs, allowing the operator to select available plots and tables. Graphical displays provide analysis tools, including cursors and readouts, to provide enhanced, interactive interpretation of the data. Various scalar values associated with each measurement are also stored, including test execution times, measurement parameters and software revisions, as well as event and error logs.

Measurement results can be automatically saved to XML files with file names reflecting the test name, date and time of execution. Integration with existing data storage schemas is easily implemented. Results can also be exported to Microsoft® Excel. Results stored to an Excel workbook are transferred with each tab from the AMC results window mapped to a worksheet on a one-to-one basis as illustrated in Figure 3.

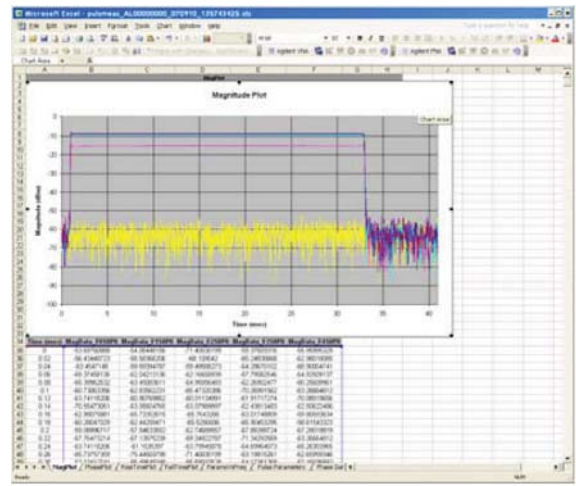


Figure 3. Test results exported to excel workbook

### AMC – Test Sequencing

The AMC provides the ability to build a complete test profile for the device under test, including application and sequencing of DUT power, execution of multiple tests, application of pass/fail criteria (limits), and the generation of a report. The AMC provides this capability using a queue mode of operation as shown in Figure 4. In queue mode, the operator may select individual sequences to be executed in series, each with a different set of input parameters (called preferences). The operator may also specify pass/fail limits and data sets to be included in the final report.

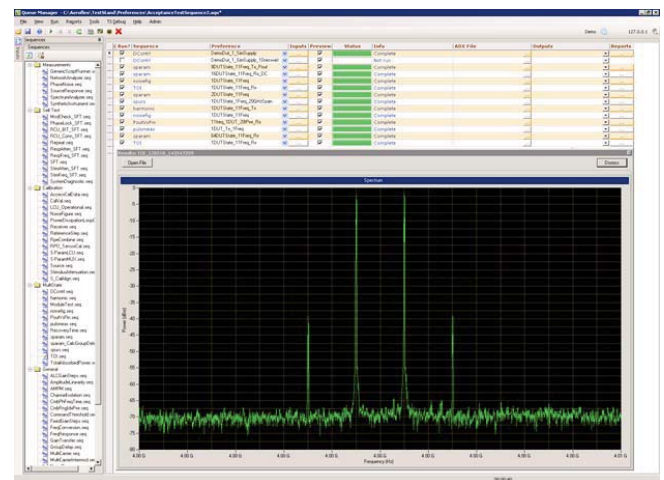


Figure 4. AMC in queue mode

### AMC – Test Development and Debug

The AMC provides a full-featured test development environment. Tests are implemented in the AMC using National Instruments TestStand™ sequences. Test sequences can be generated from within the AMC environment or using the National Instruments sequence editor. Once generated, sequences may be interactively edited and debugged within the AMC environment, allowing the developer to see real-time results on the target system software and hardware. Common debugging features such as breakpoints and step modes are provided to allow test developers to debug tests. Figure 5 shows a typical AMC debug screen.

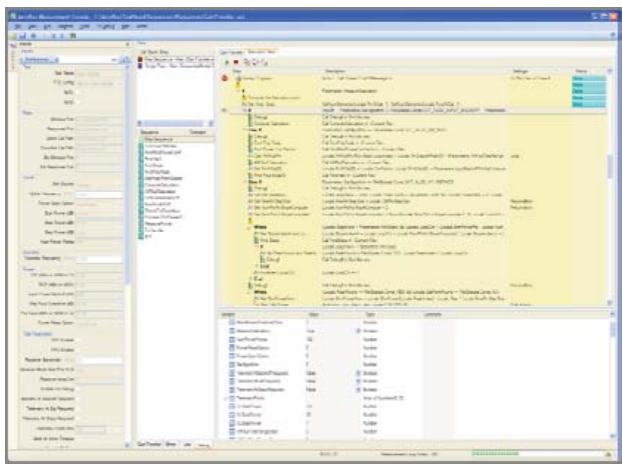


Figure 5. AMC in debug mode

AMC measurement sequences can also call code modules developed using various, industry-standard programming environments and languages, including LabVIEW™, LabWindows™/CVI™, C#, VB, .NET, C/C++, HTBasic and ActiveX. Measurement sequences can be built utilizing code modules provided by Aeroflex, available from existing software applications, or developed by in-house experts.

### Device Under Test Control – User Configurable and Flexible

With traditional instrumentation, system engineers are often forced to develop an independent DUT control scheme separate from the measurement instruments. This usually requires additional hardware and software to be added to the system architecture.

The 7700 approach provides integrated DUT control, which results in faster measurement throughput due to reduced software overhead, less equipment handshaking, and shorter delays between data collections. This approach also saves engineering cost by minimizing the number of software and hardware components that must be changed to support new devices.

There are multiple programmable power supply options available for the 7700. If one or two relatively low current supplies are required, the supplies can be housed within the 7700 base unit. For high power or for a large number of supplies, the supplies are located externally to the 7700 unit. DUT control is provided via a programmable pattern generator which supports high-speed digital I/O as well as timing pulse generators with sub-nanosecond placement in time. The power supplies, pattern generator, and pulse generator modules are completely controlled via system software, allowing for tight coupling to the measurement to maximize speed and efficiency.

Tying the DUT power supplies, the DUT control and the measurement sequences together is the DUT DLL. One DLL contains all of the DUT-specific information associated with the DUT itself and the required control elements. The strength of this approach is that neither the hardware, such as the power supplies and digital control, or the measurement sequences requires any detailed knowledge of the DUT. Therefore, the measurement sequences are completely DUT independent and may be shared across many different applications and test stations. In addition, the DUT DLL may be developed by the end user, thus removing the dependence of the end user on the test equipment manufacturer.

### Multiple Interfaces Offers Programming Flexibility

The 7700 presents several different interfaces to the user to support integration into existing test infrastructures. These interfaces include a remote interface, a local interface and an instrument DLL for direct control of the hardware. Figure 6 shows a functional diagram that shows these interfaces.

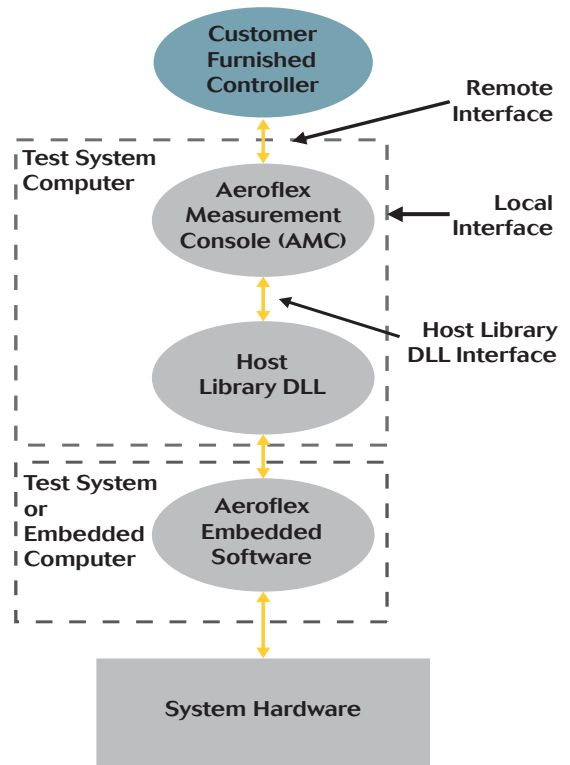


Figure 6. Interface options

The remote interface supports infrastructures in which a customer furnished system controller controls the DUT, sequences the tests and manages the flow of data results. The remote interface supports both execution of tests (input parameters and execution) and the retrieval of results from the system.

The local interface supports cases in which the user operates the 7700 as a stand-alone unit. Using AMC, all aspects of DUT control, test sequencing and data management are controlled from within the 7700 environment.

The DLL interface supports cases in which the user treats the 7700 as an embedded instrument. In this case, the user controls the 7700 via the DLL much like any other traditional instrument, such as a spectrum analyzer or vector network analyzer. However, unlike a traditional instrument, the DLL presents a signals based interface to the software that supports stimulus signal generation, signal routing and measurements. This approach allows the programmer to think about the measurements they are trying to make, not the interfacing and configuration details of an entire suite of test equipment



## A True Synthetic Architecture

The 7700 is a true synthetic architecture. Figure 7 shows the fundamental building blocks contained in the 7700.

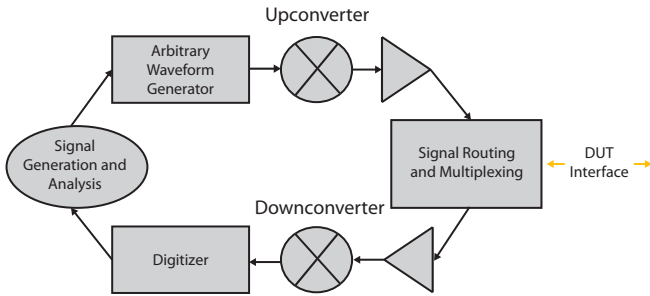


Figure 7. System architecture

The system utilizes a common set of hardware for stimulus and response functions. This common utilization reduces hardware costs, results in a smaller footprint than conventional systems and allows for a system level calibration scheme that provides superior performance as compared to a traditional rack and stack approach.

## Configurations and Measurements for Many Applications

The base 7700 is delivered with measurement sequences that provide basic measurement capability including the emulation of signal generators, spectrum analyzers, and vector network analyzers. In addition to the basic sequences, comprehensive libraries are available that provide many measurements typically performed during the characterization and test of RF devices. In general, these measurement sequences provide the ability to generate complex stimulus signals, receive the response signals from the DUT, and process the data to derive the required data product, all while providing tightly synchronized control of the DUT. The tables below show some of the additional measurement personalities that are available for the 7700.

### Pulse Amplifier Measurements

S-parameter (CW and Pulsed)
Pout versus Pin
Time Domain Measurements and Pulse Characterization
Total Absorbed Power
Noise Figure (Y-factor)
Hot S22

### CW and Frequency Translated Measurements

Pout versus Pin
Frequency Response/conversion
Spectrum, Spurs, Harmonics
Third Order Intercept
AM/PM
Channel Isolation
Noise Figure (cold source)
Group Delay
Absolute Time Delay
Phase Noise

### Multi-tone Measurements

Noise Power Ratio
Passive Intermodulation (PIM)
Multi-carrier Relative Amplitude and Phase

## Expansion to Higher Frequencies

The 7700 is available in configurations to support up to 6 GHz in a single unit. When combined with external hardware, the system can be expanded to cover frequencies up to 32 GHz. These higher-frequency configurations of the 7700 are complete, highly-integrated configurations that share the same benefits and features as the single-unit 6 GHz configuration.

The stimulus frequency range may be expanded to frequencies above 6 GHz using a variety of supported signal sources. The exact configuration of stimulus hardware depends on the signal qualities needed for the application, such as frequency range, power range, modulation types, etc. The 7700 software supports a variety of options to meet a wide range of source requirements. Aeroflex application engineers are trained to help customers select the best available source options to meet application-specific requirements.

The response frequency range may be expanded to frequencies above 6 GHz using the Aeroflex synthetic microwave response unit. This unit extends the response frequency range to microwave frequencies using the same generic, multi-purpose synthetic receiver techniques used in the base 7700 configuration. This approach allows the system to maintain the benefits of the synthetic measurement architecture for high-frequency applications.

In some high-frequency configurations, additional external components may be added to provide additional signal routing, calibration, and measurement features. Figure 8 shows an example 32 GHz system using a standard 32 GHz source and a microwave response unit.



Figure 8. Example high-frequency configuration

Contact your Aeroflex representative today to arrange a demonstration and see for yourself why the 7700 provides the industry's fastest and most complete automated test solution.

## 7700 PRODUCT SPECIFICATIONS

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There are multiple options for the 7700 for frequency coverage, output power and signal multiplexing. The specifications for the 7700 are dependent on the various system options. The key specifications for the 7700 are specified in separate tables based on frequency coverage.

### STIMULUS (6 GHz)

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#### Frequency Range

1 MHz - 6 GHz

#### Frequency Resolution

1 MHz to 3 GHz 1 Hz

3 to 6 GHz 2 Hz

#### Output Power

+5 dBm (options for +15 dBm)

#### Output Power Range

>100 dB

#### Output Power Resolution

0.02 dB

#### Frequency Switching Times

<1 msec

#### RF Modulation BW

90 MHz

#### Dual Channel AWG Memory (Options to 512 Msamples)

128 Msamples

#### Modulation Types

AM, FM, PM, Pulse, Vector (loaded waveform)

#### Phase Noise (2 GHz, 20 KHz offset)

-115 dBc/Hz

#### Spurious (>10 KHz offset, CW)

-70 dBc typical

### PULSE MODULATION

#### Rise/Fall Time

<10 nsecs

#### Minimum Pulse Width

20 nsecs

#### Maximum PRF

5 MHz

#### On/Off Ratio (1 MHz to 1 GHz)

70 dB

#### On/Off Ratio (1 to 3 GHz)

60 dB

#### On/Off Ratio (3 to 6 GHz)

50 dB

### NOISE SOURCE

#### ENR (10 MHz to 3 GHz)

20 dB

#### ENR (3 to 6 GHz)

15 dB

#### Level Control

31 dB

### RESPONSE (6 GHz)

---

#### Frequency Range

1 MHz to 6 GHz

#### Instantaneous BW

90 MHz

#### Digitizer

14 bits, 250 MS/sec

#### Sample Memory

Up to 512 MByte

#### Residual Noise Floor

<-100 dBm

#### Maximum Input Power

+28 dBm

#### Input Attenuator

0 to 31, 1 dB steps

#### Frequency Switching Times

<1 msec

#### Phase Noise (2 GHz, 20 kHz offset)

-115 dBc/Hz

#### Spurious (>10 KHz offset, CW)

-75 dBc typical

### GENERAL MEASUREMENTS (6 GHz)

---

#### POWER

##### Frequency Range

1 MHz to 6 GHz

##### Modes

Tone power, total power

##### Amplitude Uncertainty

±0.25 dB (to -50 dBm)

#### FREQUENCY

##### Frequency Range

1 MHz to 6 GHz

##### Modes

CW, modulated

##### Frequency Resolution

1 Hz

##### Sensitivity

-60 dBm

##### Time Base Accuracy

See Frequency Reference

#### NOISE FIGURE

##### Frequency Range

10 MHz to 6 GHz

##### Measurement Uncertainty

0.3 dB

## TIME DOMAIN

### Frequency Range

1 MHz to 6 GHz

### Sensitivity

-60 dBm

### Resolution

4 nsecs

## VECTOR NETWORK ANALYSIS (6 GHz)

---

### Frequency Range

100 MHz to 6 GHz

### Modes

CW, pulsed

### S21 Amplitude Uncertainty

0.125 dB (10 dB insertion loss)

### S21 Phase Uncertainty

1.5 deg (10 dB insertion loss)

### S11 Reflection Coefficient Uncertainty

0.015 (Linear)

### Dynamic Range

>100 dB

## SPECTRUM (6 GHz)

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### Frequency Range

1 MHz to 6 GHz

### Resolution Bandwidth Range

1 Hz to 10 MHz

### Video Bandwidth Range

RBW / N (1 < N < 65536) N in powers of 2

### Reference Level Range

+28 dBm to noise level

### Amplitude Resolution

0.02 dB

## RELATIVE POWER UNCERTAINTY

### Input Level >-60 dBm

0.5 dB

### -90 dBm < Input Level <-60 dBm

1.0 dB

### Spurious Free Dynamic Range

75 dB nominal

### DANL (1 Hz res bandwidth)

#### 1 MHz to 6 GHz

-164 dBm/Hz

#### 1 to 3 GHz

-159 dBm/Hz

#### 3 to 6 GHz

-154 dBm/Hz

## AC INPUT POWER (6 GHz)

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### Input Voltage (Single Phase)

100 to 250 VAC

47 to 63 Hz

### Mains Supply Voltage Fluctuations

≤10% of the nominal voltage

### Fuse Requirements

10A, 250V, Type F

## DIMENSIONS AND WEIGHT (6 GHz)

---

### Height

20.32 cm (8 in.)

### Width

44.45 cm (17.5 in.)

### Depth

60.96 cm (24 in.)

### Weight

20.41 kg (45 lbs.)

## GENERAL (ALL CONFIGURATIONS)

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### DUT CONTROL

#### Number of Bits

32

#### Logic Level

LVDS

#### Clock Rate

Up to 100 MHz

### TIMING SIGNAL GENERATION

#### Number of Pulses

6

#### Resolution

0.1 nsecs

#### Pulse Repetition Interval Max/Min

1 Hz to 5 MHz

#### Pulse Repetition Interval Resolution

20 nsecs

### FREQUENCY REFERENCE

#### Frequency

10 MHz

#### Modes

Internal/external

#### Temperature Range

0°C to 50°C

#### Warm-up Time

10 min.

#### Temperature Stability

<0.01 ppm typical

### Aging

0.001 ppm per day

0.01 ppm per year

### DC Power Supply

Multiple options available

## ENVIRONMENTAL (ALL CONFIGURATIONS)

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### Operating Temperature<sup>1</sup>

0 to 50°C

### Storage Temperature<sup>1</sup>

-40 to 71°C

### Warm Up Time

30 min.

### Relative Humidity<sup>1</sup>

80% up to 31°C decreasing linearly to 50% at 40°C

### Altitude<sup>1</sup>

4.600 m (15, 092 ft)

### Shock and Vibration<sup>1</sup>

30 G Shock (Functional Shock) 5-500 Hz random vibrations

### Use

Pollution degree 2

### Safety Standards

EN 61010-1, IEC 61010-1

### EMC

Mil-PRF-28800F EN 61326-1: Class A EN61000-3-2 EN61000-3-3

<sup>1</sup> Tested in accordance with MIL-PRF-28800F Class 3

## STIMULUS (32 GHz MICROWAVE ANALOG SOURCE)

---

### Frequency Range

1 MHz to 31.8 GHz

### Frequency Resolution

1 Hz

### Output Power

1 MHz to 20 GHz +10 dBm

20 to 31.8 GHz +5 dBm

### Output Power Range

>100 dB

### Output Power Resolution

0.01 dB

### Frequency Switching Times

<1 msec

### Modulation Types

AM, FM, PM, Pulse

### PULSE MODULATION

#### Rise/Fall Time

<10 nsecs typical

#### Minimum Pulse Width

20 nsec

### Maximum PRF

5 MHz

### On/Off Ratio

80 dB

### Spurious (>10 KHz offset, CW)

-60 dBc typical

## STIMULUS PHASE NOISE (32 GHz MICROWAVE ANALOG SOURCE)

---

Offset (Hz)	1 GHz (dBc/Hz)	10 GHz (dBc/Hz)	20 GHz (dBc/Hz)	30 GHz (dBc/Hz)
10	-54	-38	-30	-25
100	-103	-82	-75	-70
1000	-117	-95	-91	-84
10000	-122	-102	-95	-91
100000	-122	-103	-97	-91
1000000	-145	-128	-122	-115
10000000	-160	-147	-140	-134

## STIMULUS (32 GHz MICROWAVE VECTOR SOURCE)

---

### Frequency Range

1 MHz to 31.8 GHz

### Frequency Resolution

1 Hz

### Output Power

1 MHz to 20 GHz +10 dBm

20 to 31.8 GHz +5 dBm

### Output Power Range

>100 dB

### Output Power Resolution

0.01 dB

### Frequency Switching Times

<10 msec

### RF Modulation BW

80 MHz (other options available for larger bandwidths)

### Waveform Memory

64 Msamples

### Modulation Types

AM, FM, PM, Pulse, Vector (loaded waveform)

### PULSE MODULATION

#### Rise/Fall Time

<10 nsecs

#### Minimum Pulse Width

150 nsecs (20 nsec optional)

### Maximum PRF

5 MHz

### On/Off Ratio

80 dB

### Spurious (>10 KHz offset, CW)

-60 dBc typical



## STIMULUS PHASE NOISE (32 GHz MICROWAVE VECTOR SOURCE)

Offset (Hz)	1 GHz (dBc/Hz)	10 GHz (dBc/Hz)	20 GHz (dBc/Hz)	30 GHz (dBc/Hz)
10	-100	-80	-70	-70
100	-112	-92	-86	-83
1000	-133	-114	-110	-105
10000	-145	-130	-121	-115
100000	-146	-130	-121	-115
1000000	-150	-158	-138	-130
10000000	-150	-160	-151	-145

## RESPONSE (32 GHz)

### Frequency Range

1 MHz to 31.8 GHz

### Instantaneous BW

90 MHz

### Digitizer

14 bits, 250 MS/sec

### Residual Noise Floor

<-110 dBm

### Maximum Input Power

+30 dBm

### Input Attenuator

0 to 90, 10 dB steps

### Frequency Switching Times

<1 msec

### Spurious (>10 KHz offset, CW)

-70 dBc typical

## RESPONSE PHASE NOISE (32 GHz)

Offset (Hz)	3 GHz (dBc/Hz)	10 GHz (dBc/Hz)	20 GHz (dBc/Hz)	30 GHz (dBc/Hz)
10	-67	-56	-50	-47
100	-97	-86	-80	-77
1000	-118	-107	-101	-98
10000	-126	-115	-109	-106
100000	-128	-117	-111	-108
1000000	-137	-126	-120	-117
10000000	-147	-136	-130	-127

## GENERAL MEASUREMENTS (32 GHz)

### POWER MEASUREMENT

#### Frequency Range

1 MHz to 31.8 GHz

#### Amplitude Uncertainty

<26.5 GHz

±0.25 dB (to -50 dBm)

<32 GHz

±0.30 dB (to -50 dBm)

### FREQUENCY

#### Frequency Range

1 MHz to 31.8 GHz

### Modes

CW, modulated

### Frequency Resolution

1 Hz

### Sensitivity

-60 dBm

### Time Base Accuracy

See Frequency Reference

## NOISE FIGURE MEASUREMENT UNCERTAINTY (±)

### 10 MHz to 20 GHz

0.3 dB

### 20 GHz to 32 GHz

0.5 dB

## TIME DOMAIN

### Frequency Range

1 MHz to 31.8 GHz

### Sensitivity

-60 dBm

### Resolution

4 nsecs

## VECTOR NETWORK ANALYSIS (32 GHz)

### Frequency Range

500 MHz to 31.8 GHz

### Modes

CW, pulsed

### S21 Amplitude Uncertainty (±) (at 10 dB insertion loss)

At 2 port interface

500 MHz to 20 GHz

0.125 dB

20 to 26.5 GHz

0.25 dB

26.5 to 31.8 GHz

0.25 dB

### S21 Phase Uncertainty (±) (at 10 dB insertion loss)

500 MHz to 20 GHz

1.5 deg

20 to 26.5 GHz

2.0 deg

26.5 to 31.8 GHz

3.0 deg

### S11 Reflection Coefficient Uncertainty (±) (linear)

500 MHz to 20 GHz

0.015

20 to 26.5 GHz

0.020

26.5 to 31.8 GHz

0.020

### Dynamic Range

>110 dB

## SPECTRUM (32 GHz)

### Frequency Range

1 MHz to 31.8 GHz

### Resolution Bandwidth Range

1 Hz to 10 MHz

### Video Bandwidth Range

RBW / N ( $1 < N < 65536$ )  
N in powers of 2

### Reference Level Range

+30 dBm to noise level

### Amplitude Resolution

0.02 dB

### RELATIVE POWER UNCERTAINTY

#### Input Level >-60 dBm

0.5 dB

#### -90 dBm < Input Level <-60 dBm

1.0 dB

#### -100 dBm < Input Level <-90 dBm

2.0 dB

### Spurious Free Residual Noise Floor

<-110 dB

### Noise Power in 1 Hz Bandwidth

-144 dBm

### Spurious Free Dynamic Range

-75 dB nominal

## AC INPUT POWER (32 GHz)

---

### Input Voltage (Single Phase)

230 VAC, 50 Hz

110 VAC, 60 Hz

### Mains Supply Voltage Fluctuations

≤10% of the nominal voltage

### Power Consumption

Depends on options

## DIMENSIONS AND WEIGHT (32 GHz)

---

### Height

Depends on options

### Width

Depends on options

### Depth

Depends on options

### Weight

Depends on options

## SYSTEM OPTIONS

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Item	Description
Base 7700 Unit - 3 GHz	Stimulus and response coverage to 3 GHz +5 dBm stimulus output power 90 MHz instantaneous BW on stimulus and response
	AWG based stimulus signal generation, 128 Msamples waveform memory Stimulus modulation (AM, FM, PM, Pulse, loaded waveform)
	Includes Aeroflex Maintenance Console with instrument panels Analog and vector source Spectrum analyzer Network analyzer Noise figure meter
Frequency Extension to 6 GHz	Extension of stimulus and response frequency coverage to 6 GHz
Frequency Extension to 20 GHz	Extension of stimulus and response frequency coverage to 20 GHz
Frequency Extension to 32 GHz	Extension of stimulus and response frequency coverage to 32 GHz
High Power Option	High power option for stimulus (+15 dBm at 6 GHz)
6 Port RF Mux (6 GHz)	Addition of external 6 port RF Multiplexer to 6 GHz
2 port RF Mux and S-parameter Test Set (26.5 GHz)	Addition of external 2 port RF Multiplexer with integral S-parameter test set
12 port RF Mux and S-parameter Test Set (26.5 GHz)	Addition of external 12 port RF Multiplexer with integral S-parameter test set
DUT Digital Control	Additional of Digital Control module, 32 bits LVDS, 100 MHz clock rate Example DUT.dll

For the very latest specifications visit [www.aeroflex.com](http://www.aeroflex.com)

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