Wireless

3550 Touch Screen Radio Test System

The 3550. The first truly portable touch screen radio communication test system. The 3550 takes radio and repeater site testing to the next level with a quantum leap in an easy to use, integrated test system for complete radio receiver and transmitter performance testing, cable fault and antenna system analysis. With its ultra-responsive capacitive touch screen, the 3550 brings a whole new experience to RF testing.

• Next Generation Touch-Screen Operation!
• Define your own test screens and then save for future use!
• True Internal Battery Provides 4.5 Hours Portability on One Charge!
• Super Light Magnesium Alloy – 8.3 lbs/3.75 kg Weight! Almost half the weight of competitive units!
• 0° to 50°C Operating Range!
• 0.15ppm Timebase with Exclusive “Freq-Flex” External Flexible Frequency Reference!

Complete Support for Today’s Analog and Digital Technology
• AM
• FM
• DMR (MOTOTRBO™)
• P25
• NXDN™
• dPMR
• ARIB T98

Advanced Cable and Antenna Test Functions
Distance to Fault
“Touch and Find” Markers
Return Loss Measurements
VSWR Analysis

Full Feature RF Test Functions
-140 dBm DANL Spectrum Analyzer
Tracking Generator for Duplexer Alignment
Multi-Function Oscilloscope
External “Freq-Flex” Frequency Reference

Multi-Language Support
Simplified Chinese
Traditional Chinese
Spanish
Portuguese
Malay/Indonesian
Korean
Arabic
Polish
Russian
Japanese

For the very latest specifications visit www.aeroflex.com
Aeroflex’s expertise in developing radio communications test sets with exclusive features and excellent return on investment put the 3550 at the front of affordable, high performance RF analysis. Designed for speed, the 3550 features a complete radio test system with an advanced touch screen that simplifies cable and antenna testing.

Simplified Repeater Site Analysis and RF Installation Testing

Designed to meet a multitude of radio tests requirements, the 3550 provides fast, reliable measurements of the radio’s transmitter and receiver parameters. Expanded capabilities allow users to perform quick testing of antennas and cables at the touch of a screen. The 3550 provides fast distance to fault, return loss and VSWR measurements with “Touch and Find” marker control for ease of use and accurate measurements.

Coupled with the most complete RF test functions available in a portable test solution, the 3550 allows you to quickly isolate transmitter and receiver problems and assess the complete performance of the radio communication system. Aeroflex’s exclusive “Freq-Flex” external frequency reference allows you to use any external reference from 2 MHz to 1 GHz to calibrate the 3550’s time base. Simply connect a known good RF source to the 3550 antenna or T/R port and the 3550 timebase is frequency corrected to the reference signal for super-accurate RF frequency measurements. Once calibrated, the 3550 can then be taken out and used for hours “un-tethered” to the reference oscillator.

With typical power accuracy of 0.6 dB, and with external cable path loss correction, the 3550 provides superior power measurements for results you can count on.

FM deviation analysis with accuracies of 4% (typical) and 0.0 dB flatness provides deviation measurements you can trust for FM and digital technologies using FSK modulations. Flatness of the deviation meter is important when aligning radios to ensure proper digital operation.
The 3550 Spectrum Analyzer

Complete RF Receiver Testing
With a fully integrated, multifunction RF generator and SINAD, Distortion and BER meters, the 3550 allows for simplified and accurate receiver sensitivity testing. Full function audio routing allows the 3550 to perform proven Analog SINAD and DISTORTION testing down to -125 dBm. Plus, digital bit pattern sequences provide the digital RF generator needed to perform digital BER sensitivity testing for DMR (MOTOTRBO), dPMR, P25 and NXDN systems.

Meters Any Way You Want It
Exclusive, easy to read color coded meters allow for fast “Go, No-Go” testing at a glance. Plus, adjustable size at the touch of the screen provides more or less data as you require. It’s so simple to set up and use! After you have the screen defined in a matter of seconds, you can easily save the screen settings and set-up parameters for use at a later time. You have 100’s of setups for future use, plus if you need more than that, the easy access front USB drive port allows you to quickly recall stored set ups from your USB drive.

Complete analog test system
The 3550 includes the capability to perform direct connect type testing on a radio. All radio parameters including power, frequency error, modulation accuracy, receiver sensitivity and audio performance are easily accessed and tested.

To test receivers, the 3550 provides a signal generator, enabling the testing of the receiver portion of the radio. Audio SINAD, distortion and frequency are among the tests that the 3550 can perform on the radio’s receiver. With two internal generators that can be used as modulation sources, the 3550 can modulate the carrier with both a test tone and a squelch tone.

Alternatively, the internal generators can generate both a test tone and DCS, enabling the testing of mobiles requiring a digitally coded squelch.

Direct Connect Testing
- RF power and frequency error
- AM modulation/FM deviation
- Audio frequency counter
- Receive Signal Strength Indicator (RSSI)
- CTCSS/DCS encode/decode
- DTMF encode/decode
- Distortion meter
- SINAD/sensitivity
- Spectrum analyzer
- Audio frequency oscilloscope
- Frequency find
- Audio level meter
- Pass/Fail limits

The 3550 Meter Formats

Snapshot and Clone Me!
The 3550 snapshot features allows you to capture the perfect picture of the system’s performance before and after you’re done! Spectrum shots, Distance to Fault, SWR and any other combination of meters and displays can be captured into digital picture for future reference.

If you’ve ever had to manage multiple instruments, you’ll really appreciate our “Clone Me” function! If you have a fleet of test equipment that needs to do the exact same thing, and you have your 3550 defined exactly the way you want with screens and setups, the clone function allows you to transfer the same configuration to multiple 3550s through a simple internet connection.
Remote Operation and Remote File Access

Intermittent problems? If you’ve got internet access, then the 3550 has the perfect solution for you to remotely monitor tough to find system anomalies through your smartphone, tablet or PC anywhere on the planet. All you need is internet access and you have complete testing available at the click of a mouse, or a touch of your smartphone or tablet. VNC connection allows you to easily view a 3550 just like you were there. Found your problem and need to document it? Remote file access allows you to download pictures right from the 3550 to your local PC or device.

DIGITAL RADIO TEST OPTIONS

DMR Test
- Burst Power Meter
- Frequency Error Meter
- FSK Error Meter
- Symbol Deviation Meter
- Magnitude Error Meter
- Transmit BER Meter
- Color Code, Call ID, and Radio ID decode
- Transmit 1031 Hz, O.153, and calibration patterns
- Base Repeater pattern for duplex radio testing
- User programmable Color Code and Call ID

With the DMR option, the 3550 can now perform a complete test on the transmitter and receiver of a DMR radio. This testing includes the measurement of the key modulation fidelity parameters, FSK error, magnitude error, symbol deviation and frequency error. The 3550 can also measure the power during the burst and the power level between the bursts. In order to enable the testing of radios, without requiring them to be put into a special test mode, the 3550 also has a programmable color code and call ID. A key feature of the 3550 is the base repeater (BR) pattern. A radio in duplex mode must synchronize with this BR pattern before it can transmit. It would not be possible to test a duplex radio without this feature.

P25 Test
- Modulation Fidelity, Deviation, and Frequency Error Meters
- Transmit BER Meter
- Signal Power Meter
- Transmit standard 1011 Hz, O.153, and calibration patterns

The 3550 P25 option gives you the capability to test P25 mobiles, hand-helds, repeaters and base stations. With this option, you can measure modulation fidelity, deviation and frequency error and transmit standard patterns as specified by TIA-102.CAAA-C. This function becomes part of the Generator or Receive testing functions when this option is installed.

NXDN Test
- Signal Power Meter
- Frequency Error Meter
- FSK Error Meter
- Symbol Deviation Meter
- Transmit BER Meter
- RAN Decode
- Transmit 1031 Hz, O.153, and calibration patterns
- User programmable RAN for transmit

With the NXDN test option you will be able to measure the key NXDN RF parameters with the 3550. These measurements verify the correct operation of both the transmitter and receiver of a NXDN radio. The 1031 Hz pattern along with the selectable RAN enables a test of the audio of a NXDN radio without requiring it to be in test mode. With the O.153 random data pattern, you can perform BER testing of the receiver to verify that it meets its sensitivity requirements.

dPMR Test
- Signal Power Meter
- Frequency Error Meter
- FSK Error Meter
- Symbol Deviation Meter
- Transmit BER Meter
- Transmit O.153 patterns

With the dPMR test option, you will be able to measure the key dPMR RF parameters with the 3550. These measurements verify the correct operation of both the transmitter and receiver of an NXDN radio. With the O.153 random data pattern, you can perform BER testing of the receiver to verify that it meets its sensitivity requirements.
**SPECIFICATION**

**RF SIGNAL GENERATOR**

### FREQUENCY

**Range**
- 2 MHz to 1 GHz (Usable from 500 kHz)

**Resolution**
- 1 Hz

### OUTPUT LEVEL

**Range**
- T/R port: -50 to -125 dBm/707.11 µV to 0.13 µV
- ANT port: -30 to -90 dBm/7071.07 µV to 7.07 µV
- SWR port: -5 to -65 dBm/125743.3 µV to 125.7 µV

**Resolution**
- Display 0.1 dB/0.01 µV
- Step size 0.1 dB/0.01 µV

**Accuracy**
- ±2 dB; ± 1.5 dB Typical
- ±3 dB (<-100 dBm); ±1.5 dB Typical

### SSB PHASE NOISE

- -80 dBc/Hz @ 20 kHz offset
- -95 dBc/Hz at 1 GHz Typical @ 20 kHz offset

### SPURIOUS

**Harmonics**
- -30 dBc, -42 dBc/Hz Typical

**Non-Harmonics**
- -40 dBc, -50 dBc/Hz Typical

### RESIDUAL FM

- <40 Hz in 300 Hz to 3 kHz BW; 16 Hz Typical

### RESIDUAL AM

- <5% in 300 Hz to 3 kHz BW; 0.65% Typical

### PORT INPUT PROTECTION

- ANT port: +20 dBm
- SWR port: +20 dBm
- T/R port: +44 dBm

### PORT VSWR

- ANT port: <1.5:1
- SWR port: <1.5:1
- T/R port: <1.25:1

### FM DEVIATION (GEN 1 AND GEN 2)

**Modulation Frequency Rate**

**Range**
- 0.0 Hz to 20.0 kHz

**Resolution**
- 0.1 Hz

**Accuracy**
- Timebase ±2 Hz

**FM Modulation**

**Range**
- Off, 0 Hz to 100 kHz

**Resolution**
- 0.01 Hz

**Accuracy**
- ±10% (2 kHz to 50 kHz deviation, 150 Hz to 3 kHz rate)
- Typically <4% (5.6 kHz deviation, 1 kHz rate)

**Total Harmonic Distortion**
- 3%, 1% typical (1 kHz rate, >2 kHz deviation, 300 Hz - 3 kHz BP filter)

### EXTERNAL FM

**MIC IN**

**Input Range**
- Range 1: 2–15 mVrms (8 mVrms nominal) MIC E-OPEN, F-GND
- Range 2: 35-350 mVrms(100 mVrms nominal) MIC E-GND, F-OPEN
- Range 3: 2-32 mVrms (20 mVrms nominal) MIC E-OPEN, F-OPEN

**Frequency Range**
- 300 Hz to 3 kHz

**Deviation Range**
- Off, 0 Hz to 80 kHz

**Modulation Accuracy**
- ±20% (300 Hz to 1.2 kHz)
- ±30% (>1.2 kHz)

**Slope**
- Positive voltage yields positive deviation

### AUDIO IN

**Switchable Loads**
- 150 ohms, 600 ohms, 1 K ohms, DIV 10, High Z

**Input Levels**
- 0.05 to 3 Vrms

**Frequency Range**
- 300 Hz to 5 kHz

**Level Sensitivity**
- 1 kHz/35 mVrms

**Slope**
- Positive voltage yields positive deviation
AM MODULATION (GEN 1 AND GEN 2)

Modulation Frequency Rate
Range
30 Hz to 5 kHz (operational from 10.0 Hz to 20.0 kHz)
Resolution
0.1 Hz
Accuracy
Timebase ±2 Hz
AM Modulation
Range
OFF, 0 to 100%
Resolution
0.1%
Modulation Accuracy
10% off setting, 150 Hz to 5 kHz rate, 10% to 90% modulation
Total Harmonic Distortion
3% (20% to 90% mod, 1 kHz rate, 300 Hz to 3 kHz BP filter)

EXTERNAL AM

MIC IN
Input Range
Range 1: 2–15 mVrms (8 mVrms nominal) MIC E-OPEN, F-GND
Range 2: 35-350 mVrms (100 mVrms nominal) MIC E-GND, F-OPEN
Range 3: 2–32 mVrms (20 mVrms nominal) MIC E-OPEN, F-OPEN
Frequency Range
300 Hz to 3 kHz
Modulation Range
0% to 80%

AUDIO IN

Switchable Loads
150 ohm, 600 ohms, 1 K ohms, DIV 10, High Z
Input Levels
0.05 to 3 Vrms
Frequency Range
300 Hz to 5 kHz
Level Sensitivity
1%/35 mVrms nominal

AFGEN 1 AND AFGEN 2

FREQUENCY
Range
30 Hz to 5 kHz (spec)
0.0 Hz to 20.0 kHz (usable)
Resolution
0.1 Hz
Accuracy
Timebase ±2 Hz

OUTPUT LEVEL
Range
0 to 1.57 Vrms (into 600 Ω)
Resolution
0.01 Vrms
Accuracy
±10%; Typical 3%
Distortion
3% (1 kHz rate, sine, 300 Hz to 3 kHz); 1% Typical

RF RECEIVER

FREQUENCY
Range
2 MHz to 1 GHz (useable from 750 kHz)
Resolution
1 Hz
Accuracy
Same as timebase

INPUT AMPLITUDE

Minimum Input Level, Audio Sensitivity
ANT: -80 dBm (22.4 μV), typical 10 dB SINAD (-110 dBm with preamp)
T/R: -40 dBm (2236 μV), typical, 10 dB SINAD

Usable Input Level Range
ANT: -60 dBm (-80 dBm with RF Amp On) to -10 dBm (RF Error, Distortion, Modulation, AF Counter and AF Level)
T/R: -90 dBm (-110 dBm with RF Amp On) to -10 dBm (RSSI)
T/R: -20 dBm to maximum input level (RF error, Distortion, Modulation, AF Counter and AF Level)
T/R: -50 dBm to maximum input level (RSSI)

Maximum Input Level
ANT: +20 dBm/0.1 W for 10 seconds
T/R: +43 dBm/20 W (FM) and +37 dBm (AM)
+47 dBm/50 W (FM) and +41 dBm (AM) with 50 W attenuator
+51.76 dBm/150 W (FM) and 45.76 dBm (AM) with 150 W attenuator

AM/FM DEMODULATION

IF Bandwidth
FM: 5 kHz, 6.25 kHz, 8.33 kHz, 10 kHz, 12.5 kHz, 25 kHz, 30 kHz, 100 kHz, 300 kHz
AM: 5 kHz, 6.25 kHz, 8.33 kHz, 10 kHz, 12.5 kHz, 25 kHz, 30 kHz

Audio Filters Bandwidth
0.3-20 k BR, 0.3-5 kBR, 0.3-3 kBR, 0.3 kHz; CCITT BR, C-Wt BR, 15 K LP, 5 K, LP, 3 K LP, 0.3 K LP

Audio Output Level Sensitivity
FM: (3 Vrms/kHz Dev)/IF BW (kHz) ±15%
AM: 7 mVrms/% AM ±15%

SPEAKER OUTPUT
75 dBa min. at 0.5 m, 600 - 1800 Hz, max volume
**VOLUME CONTROL**

<table>
<thead>
<tr>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 100</td>
</tr>
</tbody>
</table>

**LO EMISSIONS**

-50 dBc

**RF FREQUENCY ERROR METER**

<table>
<thead>
<tr>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>±200 kHz</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Resolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Hz</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Same as timebase ±2 Hz</td>
</tr>
</tbody>
</table>

**RSSI INDICATOR (RF POWER WITHIN RECEIVER IF BANDWIDTH)**

<table>
<thead>
<tr>
<th>Display Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>dBm: -120 dBm to +43 dBm (+53 dBm with Ext Attn dB set to 20 dB)</td>
</tr>
<tr>
<td>Watts: 10 pW to 20 W (200 W with Ext Attn dB set to 20 dB)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Usable Meter Reading RF Level Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>T/R port: -50 dBm to +43 dBm</td>
</tr>
<tr>
<td>ANT port (without RF amp on): -90 dBm to -10 dBm</td>
</tr>
<tr>
<td>ANT port (with RF amp on): -110 dBm to -10 dBm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Resolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.01 dBm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td>±3 dB; 1.5dB Typical (&gt;50 dBm into T/R, &gt;-90 dBm into ANT or &gt;-120 dBm into ANT with RF Amp On)</td>
</tr>
</tbody>
</table>

**RF POWER METER (BROADBAND RF POWER INTO T/R PORT)**

<table>
<thead>
<tr>
<th>Display Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 43 dBm (0 to 20 W)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Minimum Input Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.10 W/+20 dBm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Maximum Input Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 W/43 dBm for 10 minutes at +25° C or until thermal alarm sounds</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Resolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.01 W/0.1 dBm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td>±1 dB; 0.5 dB Typical</td>
</tr>
</tbody>
</table>

**FM DEVIATION METER**

<table>
<thead>
<tr>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>500 Hz to ±100 kHz</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Modes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peak+, Peak-, (Peak+ - Peak-)/2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Resolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Hz</td>
</tr>
</tbody>
</table>

**AM PERCENT METER**

<table>
<thead>
<tr>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>5% to 100%</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Modes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peak+, Peak-, (Peak+ - Peak-)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Resolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>1%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td>±5% of reading, 1 kHz rate, 30% to 90% modulation, 3 kHz LPF; 2% Typical</td>
</tr>
</tbody>
</table>

**ANT-CABLE TEST**

<table>
<thead>
<tr>
<th>Frequency Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.0 MHz to 1000.0 MHz</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Span Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.0 MHz to 998 MHz</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Start Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.0 MHz to 990.0 MHz</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Stop Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.0 MHz to 1000.0 MHz</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Frequency Resolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.1 MHz</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Markers</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Immunity to Interfering Signal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Typically -30 dBm</td>
</tr>
</tbody>
</table>

**SWR MEASUREMENT**

<table>
<thead>
<tr>
<th>VSWR Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.00 to 20.00</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Resolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.02</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>VSWR Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td>±10% of SWR readings (calibrated) &lt;300 MHz</td>
</tr>
<tr>
<td>±20% of SWR readings (calibrated) =300 MHz</td>
</tr>
</tbody>
</table>

**RETURN LOSS (RL) MEASUREMENT**

<table>
<thead>
<tr>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0 to -50.0 dB</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Resolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.01 dB</td>
</tr>
</tbody>
</table>
CABLE LOSS MEASUREMENT

Range
0.0 to -50.0 dB

Resolution
0.01 dB

DTF MEASUREMENT

Measurement Range
3 ft to 328 ft
1 m to 100 m

Return Loss Range
0.0 to -50.0 dB

Cable types

Velocity
0.00 to 1.00, automatically selected by cable type

Loss
0.00 to 100.00 dB per 100 ft, automatically selected by cable type

Est. Length
40, 80, 200 or 400 ft
12.2, 24.4, 61 or 121.9 m

AUDIO METERS

AUDIO INPUT (AUDIO IN)

Source
BNC Input on front panel

Frequency Range
300 Hz to 10 kHz

Level Range
0.2 Vp-p to 5 Vp-p

SINAD METER (WITH 1 KHZ AUDIO)

Measurement Sources
Audio in, demod

Audio Frequency
1 kHz

Display Range
0 to 40 dB

Resolution
0.1 dB

Accuracy
±1.5 dB from 8 to 40 dB; ±1.0 dB Typical

DISTORTION METER

Measurement Sources
Audio in, demod

Audio Frequency
1 kHz

Reading Range
0% to 100%

Resolution
0.1%

Accuracy
±10% from 1% to 20%

AUDIO FREQUENCY COUNTER

Range Demod
FM
15 Hz to 20 kHz (IF BW set appropriately for received modulation BW)

AM
100 Hz to 10 kHz (IF BW set appropriately for received modulation BW)

Range Audio Input
15 Hz to 20 kHz

Audio Input Level
10 mV p-p to 5 V p-p

Resolution
0.1 Hz

Accuracy
± 1 Hz

AUDIO FREQUENCY LEVEL METER

Measurement Sources
Audio in, DVM

Frequency Range
200 Hz to <5 kHz

Input Level
Audio in 10 mV rms to 3 V rms (x1)
1 V rms to 30 V rms (+10)
DVM 10 mV rms to 3 V rms (x1)
1 V rms to 30 V rms (+20)

Display Unit Resolution
Volts 0.001 V
mV 0.001 mV
dBuV 0.001 dBuV
dBm 0.001 dBm
Watts 0.001 W

Accuracy
±5%; ±2% Typical; Audio In
**SPECTRUM ANALYZER**

**FREQUENCY**

Range
- 2 MHz to 1 GHz

Resolution
- 1 Hz

Accuracy
- Same as timebase

Span
- 10 kHz to 5 MHz in 1, 2, 5 sequence

**EFFECTIVE RBW**

Range
- 19 Hz to 25 kHz (Effective RBW calculated based on FFT window type and Span)

**POWER BANDWIDTH**

Offset Range
- 0 to ±2.495 MHz

Bandwidth Range
- 1 kHz to 5 MHz in a 1, 2, 5 sequence (maximum bandwidth is the selected span)

Power Bandwidth Display Range
- -137 dBm to +43 dBm

Power Bandwidth Display Resolution
- 0.001 dBm

Power Bandwidth Accuracy
- ±3 dB (> -50 dBm into T/R, > -90 dBm into ANT or > -110 dBm into ANT with RF Amp On)

Displayed Average Noise Level (DANL)
- -120 dBm (Typical, 10 kHz span) -140 dBm with pre-amp enabled

**OSCILLOSCOPE (OPTIONAL)**

Source
- DVM, Audio In, Demod

Traces
- One

Markers
- Two

Trigger Type
- Auto, Norm

Edge
- Rising, Falling

Level
- -100 to +100 V

Horizontal Range
- 0.5 ms/div to 0.1 sec/div

Accuracy
- 3% of full scale

Vertical

Range
- FM demod
  - 0.1 kHz to 50 kHz/div in a 1, 2, 5 sequence

AM demod
  - 5, 10, 20, 50%/div
  - DVM and Audio in
  - 10 mV to 10 V/div in a 1, 2, 5 sequence

Accuracy
- 10% of full scale

Coupling:
- DVM Input: AC, DC and GND
- Audio in: AC

Input Impedance
- DVM Input: 1 MΩ
- Audio in: 150 Ω, 600 Ω, 1 KΩ, High Z, Div by 10

Bandwidth
- 5 kHz

**TIMEBASE**

Temperature Stability
- ±0.15 ppm at 25°C

Aging
- 1 ppm/year standard

Warm-up time
- 3 min.
### ENVIRONMENTAL/PHYSICAL

#### Overall Dimensions

231 mm x 285 mm x 70 mm (W x L x D)
9.1 in. x 11.2 in. x 2.8 in.

#### Weight

8.3 lbs. (3.75 kg); 12 lbs. (5.4 kg) with accessories and softbag

#### Temperature

**Storage:** -51°C to +71°C storage

**Note:** Battery must not be subjected to temperatures below -20°C, nor above +60°C

**Operation:**

- **3550 - DC only Operation:** 0°C to +50°C (battery removed, contingent upon applied RF power over time²).
- **3550R - DC only Operation:** -20°C to +55°C (battery removed, contingent upon applied RF power over time²).
- **3550 Battery Operation:** 0°C to +40°C (typical based on internal temperature rise and usage of the instrument²).
- **3550R Battery Operation:** -20°C to +40°C (typical based on internal temperature rise and usage of the instrument²).

**Note:** Battery to be charged at temperatures between 0°C and +45°C

#### Altitude

- **3550R – 4600 M**

#### Humidity

90% max. (non-condensing)

#### Shock, Functional

- **3550 - 20 G**
- **3550R - 30 G**

#### Vibration

- **3550 - Random 10 - 100 Hz (MIL-PRF-28800F Class 3)**
- **3550R - Random 10 - 500 Hz (MIL-PRF-28800F Class 2)**

#### Water

- **3550R – Blowing Rain and Drip Proof**

#### Explosive Environment

- **3550 – MIL-PRF 28800F, Class 2**
- **3550R – MIL-PRF 28800F, Class 2**

#### Dust Resistance

- **3550 – MIL-PRF 28800F, Class 2**
- **3550R – MIL-PRF 28800F, Class 2**

#### Solar Radiation

- **3550R – MIL-PRF28800F, Class 2**

### COMPLIANCE

#### EMC

```
Emissions
MIL-PRF 28800F
EN61326: 1998 class A
EN61000-3-2
EN61000-3-3
```

#### Immunity

```
MIL-PRF-28800F
EN61326: 1998
UL 6101-1
CSA
```

### SAFETY

#### Standard

UL 61010-1

### AC INPUT POWER (AC TO DC CONVERTER/CHARGER UNIT)

#### AC Input Voltage Range

100 to 240 VAC, 1.5 A max., 47 Hz - 63 Hz

#### Operating Temperature

0°C to +40°C

#### Storage Temperature

-20°C to + 85°C

#### EMI

EN55022 class B, EN61000-3-2 Class D

### DC INPUT POWER

#### DC Input Voltage Range (DC INPUT CONNECTOR)

11 VDC to 32 VDC

#### DC Power Input, Max. (DC INPUT CONNECTOR)

55 W

#### DC Power Input, Nominal (DC INPUT CONNECTOR)

25 W

#### DC Fuse Requirement (DC INPUT CONNECTOR)

5A, 32VDC, Type F

### BATTERY

#### Battery Type

Lithium Ion (Li Ion) battery pack

**Note:** Battery must not be subjected to temperatures below -20°C, nor above +60°C

#### Battery Operation Time

4.5 hours continuous use with 40% backlight, duty cycle 80% transmitter and 20% Receiver tests.

#### Battery Charge Time

4 hours

**Note:** Battery to be charged at temperatures between +0°C and +45°C only
VERSIONS AND ACCESSORIES

Versions
3550 Touch Screen Radio Test System
3550R Touch Screen Radio Test System - Ruggedized

3550 Supplied Accessories
External DC Power Supply

REGIONAL KITS FOR 3550
90603 US
90890 China
90889 International

REGIONAL KIT ACCESSORIES
Case, Soft-Sided Carrying
Power Cable (AC)
Short-Open-Load VSWR Calibrator
Cable (TNC) (M-M) (48 in)
2 X Cable (BNC) (M-M) (48 in)
5 X Adapter (BNC-F to TNC-M)
2 X Fuse, Spare (5 A, 32 VDC, Type F)
Case, Accessory
Power Cable (DC supply - cigarette lighter)
Getting Started Manual (Paper)
Operation/ICW Manual (CD)
Antenna (BNC) (50 MHz)
Antenna (BNC) (150 MHz)
Antenna (BNC) (450 MHz)
Antenna (BNC) (800 MHz)
Flash Drive, 1 GB USB
Aeroflex Combo Stand and Cover

OPTIONS
35XXOPT01 Spectrum Analyzer
35XXOPT02 Oscilloscope
35XXOPT07 P25 Test
35XXOPT08 Tracking Generator
35XXOPT09 dPMR Test
35XXOPT33 NXDN Test
35XXOPT34 DMR Test

Optional Accessories
AC27002 Attenuator (20 dB/50 W), Adapter (N-F to BNC-F), Adapter (N-M to TNC-M)
AC27003 Attenuator (20 dB/150 W), Adapter (N-F to BNC-F), Adapter (N-M to BNC-F)
AC27005 Battery, Spare
AC0826 Tripod
AC24006 Tripod, Dolly, Stand

For the very latest specifications visit www.aeroflex.com
1 – “Specifications” describe product performance over the specified operating temperature range and frequency range are covered by the product warranty. “Typical” numbers are specified at ambient room temperature (23°C) and describes a characteristic that 95% of product exhibit (± 2 standard deviations) with a 95% confidence level at room temperature (23°C). Typical characteristics are not covered by product warranty.

2 – Use reason when working with RF test instruments. All thermal ratings are dependent upon applied RF power. The 3550 will alarm once the internal temperature of the 3550 exceeds predetermined limits. Applying power continuously in high ambient temperature conditions will result in a heat build-up within any instrument. The 3550 is rated for 20 W (43 dBm) for 10 minutes at +25°C or until thermal alarm sounds. Exceeding these conditions will result in thermal shutdown.