

# Product Capabilities

## PXI

### RF Modular Instruments (PXI)

The Aeroflex 3000 Series expands PXI's speed and modularity into the realm of general-purpose wireless testing. Multi-standard testing in a single box solution is now achievable with no compromise in performance.

The in-built flexibility of the PXI approach allows the 3000 Series to support a variety of application areas. It is particularly suited to modern cellular and wireless data communications and critical testing in a high volume manufacturing environment. The modules are categorized into groups: stimulus, response and signal conditioning which are combined with test software to produce fast, accurate test solutions - that are future-proof and cost effective.

The PXI Studio software application enables the 3000 Series to be used for GSM/EDGE, UMTS/HSUPA, LTE (FDD), CDMA 2000 and 1xEV-DO, WiMAX, WLAN and Bluetooth device testing.



### 3010/3011 PXI RF Synthesizers

The 3010/3011 RF synthesizer modules are high performance frequency synthesizers. Using Aeroflex patented technology, the modules provide 1 Hz frequency resolution combined with excellent phase noise performance and frequency agility all in a single width 3U module.

### 3020 Series PXI Digital RF Signal Generators

	3020A	3020C	3025	3025C	3021C	3026C
Frequency Range	250 MHz to 2.7 GHz	1 MHz to 3 GHz	76 MHz to 6 GHz	1 MHz to 6 GHz	100 kHz to 3 GHz	1 MHz to 6 GHz
Resolution	1 Hz, 2 Hz above 3 GHz					
Frequency Settling Time (list mode 3010 option 01 fitted)	250 $\mu$ s	250 $\mu$ s <20 $\mu$ s below 85 MHz	250 $\mu$ s	250 $\mu$ s <20 $\mu$ s below 85 MHz	250 $\mu$ s <20 $\mu$ s below 85 MHz	250 $\mu$ s <20 $\mu$ s below 85 MHz
Level Range < 3 GHz	-120 to + 5 dBm	-120 to + 6 dBm	-120 to + 5 dBm	-120 to + 6 dBm	-121 to + 17 dBm	-121 to + 17 dBm
Level Range > 3 GHz	NA		-120 to 0 dBm	-120 to + 1 dBm	NA	-121 to + 17 dBm
Resolution	0.01 dB					
Level settling Time (list mode)	250 $\mu$ s typ	< 3 ms below 3 GHz, < 4 ms above 4.5 GHz				
List Mode	128 addresses for level, frequency and modulation					
Level Accuracy	0.3 dB typ, 1.0 dB above 3 GHz					
Phase Noise (50 MHz)	NA	-143 dBc/Hz (@20 kHz offset)	NA	-143 dBc/Hz (@20 kHz offset)		
Phase Noise (2 GHz)	-115 dBc/Hz (@20 kHz offset)					
Phase Noise (5 GHz)	NA		108 dBc/Hz (@20 kHz offset)		NA	108 dBc/Hz (@20 kHz offset)
Modulation Modes	Analog AM/FM, Digital, Vector (option 01)					
Signal Bandwidth	28 MHz	90 MHz using int/ext digital 25 MHz with vector modulation (option 1 fitted)	28 MHz	90 MHz using int/ext digital 25 MHz with vector modulation (option 1 fitted)		
Dual AWG IQ sample memory	32 Msamples sample rate variable to 66 Ms/s	128 Msamples sample rate variable to 200 Ms/s	32 Msamples sample rate variable to 66 Ms/s	128 Msamples sample rate variable to 200 Ms/s		
Triggering	PXI, Star, LVDS, TTL					
IQ Data Interference	64 way SCSI 5 (VHDCI)					
Differential Analog Outputs	I+, I-, Q+, Q- with bias, level and option control (option 01 fitted)					
Slots Occupied	2			3		
Slot Type	PXI 1	PXI Hybrid	PXI 1	PXI Hybrid		

The high-performance 3020 Series signal generator modules can be used for both continuous wave (CW) and digital signal generation for device testing and characterization up to 6 GHz with an RF output level ranging from -120 dBm to +17 dBm. The IQCreator<sup>®</sup> signal generation application enables the design of digital modulation and other complex waveforms. Comprehensive modulation capability is provided including internal analog AM/FM, digital and IQ vector modulation modes.

#### Aeroflex PXI Products

- 3010/3011 PXI RF Synthesizers
- 3030A PXI 3 GHz RF Digitizer
- 3030C PXI 3 GHz Wideband RF Digitizer
- 3035 PXI 6 GHz RF Digitizer
- 3035C PXI 6 GHz Wideband RF Digitizer
- 3020A PXI 2.7 GHz RF Signal Generator
- 3020C PXI 3 GHz RF Signal Generator
- 3021C PXI High Power 3 GHz RF Signal Generator
- 3025 PXI 6 GHz RF Signal Generator
- 3025C PXI 6 GHz RF Signal Generator
- 3026C PXI High Power 6 GHz RF Signal Generator

# A passion for performance.

## 3030 Series PXI RF Digitizers

	3030A	3035	3030C	3035C
Frequency Range Lower	330 MHz		0.25 MHz	
Frequency Range Upper	3 GHz	6 GHz	3 GHz	6 GHz
Resolution	1 Hz	1 Hz 2 Hz above 3 GHz	1 Hz	1 Hz 2 Hz above 3 GHz
Frequency Settling Time	250 $\mu$ s			
Max RF Input Level	+ 22 dBm (8 dB RF atten)		+ 30 dBm (10 dB RF atten)	
RF Input Attenuation	0 to 28 dB in 4 dB steps		0 to 31 dB in 1 dB steps	
Level Accuracy	<3 GHz 0.45 dB, 0.3 dB typ >3 GHz 1.0 dB		<500 MHz <0.6 dB, 0.3 dB typ <3 GHz 0.45 dB, 0.3 dB typ >3 GHz 1.0 dB	
Level Settling Time (List Mode)	250 $\mu$ s			
List Mode	128 registers for frequency and level			
Phase Noise (2 GHz)	-116 dBc/Hz (@20 kHz offset), -138 dBc/Hz (@10 MHz offset)			
Spectral Density	-145 dBm/Hz typ -150 dBm/Hz		-140 dBm/Hz typ	
A to D Bandwidth	36 MHz		90 MHz	
A to D Resolution	14 bits		13 bits	
Max Sample Rate	103.76 Ms/s		250 Ms/a	
Sample Memory	128 Msamples		256 m Samples	
SFDR	-75 dBc			
IMFDR	-75 dBc			
Data Out 16 bit IF or 14 bit I and Q	64 way SCSI 5			
Triggering	PXI, LVDS, TTL			
Slots Occupied	2		3	
Slot Type	PXI I		PXI Hybrid	

The 3030 Series RF Digitizers can be used to provide wideband high dynamic range data acquisition of RF signals up to 6 GHz with up to 90 MHz instantaneous bandwidth. The 3030 Series offers high linearity, low noise and excellent level accuracy performance, ideal for the analysis of WLAN, WMAN and 2G/3G cellular radio signals. Supporting the RF digitizer are a variety of measurement applications providing spectrum and vector signal analysis of common system personalities.

## 3060 Series PXI RF Combiners



### PXI Systems

Aeroflex PXI 3000 Series modules and software components can be configured as part of complete test systems. With the addition of Aeroflex custom application software development services and full system integration and support, complete turnkey test systems can be supplied.

The table to the right illustrates how PXI 3000 Series modules and options may be used as essential building blocks in PXI system development.

Application	Module Type Required					Required Options	Minimum No. PXI Slots
	3010	3011	3020 Series	3030 Series	3060 Series		
GSM/EDGE Transceiver Test	●	●	▼◆	▼◆	●	100	7
UMTS MS Transceiver Test	●	●	▼◆	▼◆	●	101	7
CDMA2000 Mobile Transceiver Test	●	●	▼◆	▼◆	●	102	7
1xEVDO Mobile Transceiver Test	●	●	▼◆	▼◆	●	102	7
WLAN IEEE 802.11a/n Test	●	●	★▲	★▲	●	103	7
WLAN IEEE 802.11b/g Test	●	●	▼◆	▼◆	●	103	7
WiMAX MP01-MP05 Test	●	●	▼◆	▼◆	●	104	7
WiMAX MP06-MP12 Test	●	●	★▲	★▲	●	104	7
Bluetooth® Wireless Technology Test	●	●	▼◆	▼◆	●	106	7
LTE FDD Test	●	●	▼◆	▼◆	●	107	7
TD-SCDMA Test	●	●	▼◆	▼◆	●	109	7

3020A	▼	3030A
3020C/21C	◆	3030C
3025	★	3035
3025C/26C	▲	3035C

### Aeroflex PXI Products

- 3060 PXI RF Combiner 2.7 GHz
- 3065 PXI RF Combiner 6 GHz
- 3000/3000B
- 3001B/3001C PXI Controller Module
- GSM/EDGE Measurement Suite
- UMTS/HSUPA Uplink Measurement Suite
- LTE FDD Measurement Suite
- CDMA2000/1xEV-DO Reverse Link Measurement Suite
- WLAN Measurement Suite
- WiMAX OFDMA Measurement Suite
- Bluetooth Measurement Suite

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