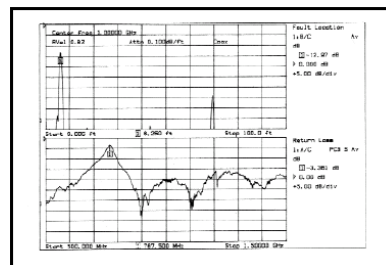
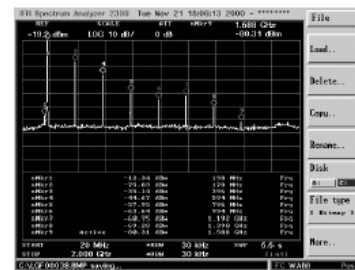




BLUE STAR LIMITED.
Test and Measuring Instrument Department
(TMID)

Product Range Catalog for
Aeroflex (earlier Marconi) Instruments



1. Analog and Digital Signal Generator
2. Radio Communication Test Set
3. RF - Microwave Counters, Power meter
4. Spectrum Analyzer
5. Network Analyzer and System Analyzer

1. SIGNAL GENERATORS:

IFR's Comprehensive range of Signal Generator covers a wide variety of applications. The range includes low cost AM/FM Signal Generators, Digital Modulation including TETRA and innovative two source and three source units.

2023A/B & 2025 9KHz to 2.51GHz Signal generators



- 2023A 9KHz to 1.2GHz
- 2023B 9KHz to 2.05GHz
- 2023B 9KHz to 2.51GHz

Features: -

- Comprehensive Modulation facilities AM, FM, DCFM, Pulse, 2FSK and 4FSK
- High power and SINAD measurement option
- Linear and logarithmic sweep mode
- Optional fast pulse modulation

These lightweight and compact general purpose signal generators offer comprehensive, simple to use modulation facilities AM/FM from an internal sine, triangle, square or external source together with pulse modulation.

Flexible user programmable frequency sweep capabilities and output level control from -137dBm to $+13\text{dBm}$ (optionally $+25\text{dBm}$), together with a class beating phase noise performance makes these generators ideally suited to demanding receiver and IF measurements in a wide range of application.

2030 Series – 10KHz to 5.4GHz

- 2030 10KHz to 1.35GHz
- 2031 10KHz to 2.7GHz
- 2031 10KHz to 5.4GHz
- 0.1Hz frequency resolution
- 0.1Hz to 500KHz modulation oscillator
- Wideband FM with 10MHz bandwidth

- Single, Dual, Composite and dual composite modulation modes
- Comprehensive sweep capabilities

The 2030 series of high performance signal generators offers great flexibility with combinations of frequency, phase amplitude and pulse modulation with three models covering frequency range 10KHz to 5.4GHz

2040 Series – 10KHz to 5.4GHz Low noise Signal generators

- Low phase noise : -140dBc/Hz at 1GHz (typically -145dBc/Hz)
- Low residual FM noise : 0.3Hz RMS at 1GHz
- Low spurious signal: -90dBc
2040 10KHz to 1.35GHz
2041 10KHz to 2.7GHz
2042 10KHz to 5.4GHz
- Comprehensive sweep and modulation capabilities

The 2040 series of low noise signal generators features excellent noise characteristics and low spurious signals for critical measurements. Microprocessor control coupled with a large screen display provides ease of use via menu driven displays. Remote programming via GPIB, and easy recall of extensive stored setting information, provides high test productivity in ATE systems and production applications.

2050 Series - 10KHz to 5.4GHz Digital and Vector Signal Generator

- Digital and Vector Modulation
- PSK, FSK, QAM, GMSK
- Precision I and Q modulation to 10MHz (1dB BW)
2050 10KHz to 1.35GHz
2051 10KHz to 2.7GHz
2052 10KHz to 5.4GHz
- Envelop control for RF bursts
- NADC, PDC, GSM plus others
- Variable data rate control
- External data/ burst inputs

The 2050 series of Signal generators are designed to meet the needs of modern digital

Radio technologies. They combine comprehensive analog modulation, pulse modulation or IQ vector modulation. In digital mode, an internal DSP is available to generate complex formats including FSK, PSK, GMSK, and QAM. Data rates and filter characteristics are selectable to suit the application. Common modulation formats are pre-programmed and retrievable with a single keystroke. In IQ vector mode the precision modulator delivers 10MHz bandwidth (1dB) with better than 1% error, making 2050 the ideal choice for demanding applications.

2026 – 10KHz to 2.4GHz Multi source Signal Generator



- Two or three high quality RF signal generators in one unit
- Ideal for inter modulation and receiver characterization
- Application specific test modes simplify measurement procedures
- User defined frequency and amplitude tracking between sources
- Adjustable carrier phase for peaking of three tone inter modulation or testing IQ modules
- +24dBm maximum output

The 2026 offers up to three fully featured RF signal generators in one unit providing a unique solution for complex tests on receivers, components and systems.

Its built in combiner and switched routing eliminates many of the uncertainties introduced by connecting together separate signal generators. The ability to select standard in built or user defined tests from the display menu via soft keys is ideal for use in R&D and manufacturing.

Each internal source has AM, FM, DCFM, phase, 2FSK, 4FSK and pulse modulation capabilities. These sources can be independently or combined with other sources.

2050T – Digital and Vector Signal Generator for TETRA

- Advanced digital mode
- <-70dBc adjacent channel power
- Internal modulator provides $\Pi/4$ DQPSK vector modulation with excellent linearity
- Simulates TDMA bursts, produces power ramps with over 80dB of dynamic range
- Built-in data source generates PRBS modulation
- Burst control
- Excellent vector accuracy
- Baseband IQ output
- IQ vector modulation

IFR 3410 series- Digital and vector signal generator

- Wide frequency coverage
 - 250 kHz to 2 GHz (3412)
 - 250 kHz to 3 GHz (3413)
 - 250 kHz to 4 GHz (3414)
 - 250 kHz to 6 GHz (3416)



- Fast RF frequency and level settling for high speed testing
- High performance vector modulation for improved component test
- Optional dual channel arbitrary waveform generator (ARB)
- Low adjacent channel power for receiver selectivity and amplifier linearity testing
- Fast GPIB response to maximize ATE system performance
- Wide bandwidth FM and AM modulation capability
- Simple to use touch panel interface
- RF optimization modes - Auto, Low Noise, Low ACP and Higher Power
- Optional Differential I/Q outputs for simplified component test interfacing
- Optional high speed pulse modulation capability
- Compact and lightweight package
- ICQ creator RF waveform creation software

2. RADIO COMMUNICATION SERVICE MONITOR

2945B Communication Service Monitor



- Rugged light weight package
 - Full Span Spectrum analyzer with 'Live' look and listen facility
 - Tracking generator with full offset tracking
 - Accurate power measurement to 150W
 - 50KHz Digital Storage Oscilloscope with anti aliasing
 - Transient and harmonic analysis
- The 2945A Communication Service Monitor is the lightest, most rugged service monitor available with a full performance spectrum analyzer as standard. For field work 2945A provides an excellent combination of instruments for all types of maintenance work.

2965A 100KHz to 1GHz Radio Test Set

- Fast and accurate radio testing
High performance, full span spectrum analyzer
- Tracking generator with variable level offset tracking
- FFT analyzer for audio and modulation signal
- 500KHz Digital Storage Oscilloscope
- Accurate broad band power meter from 1mW to 150W
- Selective power meter with 2 μ V sensitivity
- Supports all major analog cellular standards

3920: Analog and Digital Radio Test Platform



- 1 GHz Frequency Range Standard
- 2.7 GHz Frequency Range available (with option 392XOPT058)
- New digital multimeter
- New front panel USB Port
- High performance AM/FM analog duplex features
- TETRA mobile, base station and DMO tests
- P25 parametric analysis
- Remote site monitoring application
- HPD® (High Performance Data) base and mobile simulation
- Spectrum analyzer/tracking generator
- New Auto Test II operation
- Color display
- GPIB, Ethernet, USB and RS-232 interfaces
- Software upgradeable in the field
- HP/Agilent 8920B remote emulation

2966A/ 2967 GSM Radio Test Set

- All GSM versions in one unit (2967)
- Power, power profile, frequency and phase noise measurement for normal and access bursts
- Full range of BER measurements for receiver testing, E-GSM supported
- Manual/ auto modes of operation
- Spectrum analyzer from 100KHz to 1GHz and 1.3GHz to 2.2GHz
- Digital and analog in one unit
- Manual Go/No go and fully programmable testing

3: SPECTRUM ANALYZER:

2399C: 1KHz to 3GHz portable Spectrum Analyzer



- 1KHz to 3GHz fully synthesized frequency range
- light weight portable and rugged construction at < 9.4Kg
- Comprehensive marker facility
- Wide input range +30dBm to -110dBm
- Optional full tracking generator
- Semi automated measurements
- USB 2.0 interface
- User friendly MMI reduces risk of operator error
- Auto tune facility
- AM/FM demodulation
- GPIB as standard
- AC/DC operation (optional)

Comprehensive Marker System:

The marker system in Aeroflex spectrum analyzer allows up to maximum of 9 markers to be displayed on the screen at any one time. The marker table shows the frequency and level of each marker selected thus allowing multiple signals to be evaluated simultaneously.

2394: 1KHz to 13GHz

2395: 1KHz to 26.5GHz

A spectrum analyzer with outstanding performance and a user friendly visual interface simplifying many complex measurements

- 9 kHz to 13(26.5) GHz fully synthesized frequency range
- Lightweight, portable and rugged construction at 12 kg

- Excellent TFT color display
- Comprehensive marker facility
- Wide input signal range +30dBm to -110dBm
- Semi-automated measurements
- USB 2.0 interface
- Extremely user friendly MMI reduces risk of operator error
- Tune facility
- GPIB as standard
- AM/FM demodulation

3280 : 3Hz to 26.5 GHz High performance Spectrum Analyzer

- 3 Hz to 26.5 GHz frequency range

3281: 3 Hz to 3 GHz

3282: 3 Hz to 13.2 GHz

3283: 3 Hz to 26.5 GHz



- High level accuracy ± 0.15 dB up to 3 GHz
- Digital IF offers resolution bandwidths from 5 MHz to 1 Hz
- Low DANL of <-150dBm/Hz
- +18dBm third order intermodulation performance
- Excellent LO phase noise <-115 dBm/Hz, 1 GHz/10 kHz offset
- Large TFT, 26.4 cm (10.4 inch) color display
- Marker readout via up to 9 selectable markers
- Windows XP™ operating system
- Comprehensive data interfaces -CD ROM, USB, LAN
- Optional tracking generator

Spectrum Analyzers

The NEW 3250 Series compact, digital spectrum analyzers...



- High accuracy and reliability
- Powerful RF performance, phase noise - 115 dBc/Hz, DANL -145 dBm/Hz
- Standard 30 MHz I/Q demodulation bandwidth
- Remote control via LAN, GPIB, RS-232C
- S/W extension based on Windows® XP OS
- 7" wide touch panel display
- Portability based on light and compact design
- Removable hard disk
- Optional battery

| | |
|------|-------------------|
| 3251 | 1 kHz to 3 GHz |
| 3252 | 1 kHz to 8 GHz |
| 3253 | 1 kHz to 13.2 GHz |
| 3254 | 1 kHz to 26.5 GHz |

- 14 bit ADC with 85.6 MHz sampling frequency
- Dynamic range over 80 dB
- 32 M samples data with 128 mb memory
- Standard FFT, spectrogram, digital modulation analysis
- Save I/Q data file
- Digital modulation analysis like PSK (8, 16, 64), QAM (4, 8, 16, 32, 64, 128, 256), BPSK, QPSK.

4. POWER METERS

6960B: RF/Microwave power meter with GPIB

A precision Power Meter with comprehensive GPIB facilities for ATE requirements and standard bench applications



- Extensive frequency coverage 30 kHz to 46 GHz

- Wide dynamic range: -70dBm (100pW) to +44dBm (25 W)
- Fast response on GPIB of 25 ms
- Auto averaging with manual override
- Both 50 ohm and 75ohm sensors
- Low sensor VSWR reduces measurement uncertainty
- Sensor linearity correction for improved accuracy
- Maximum hold facility
- Optional DC operation
- Proven high reliability

6970: Handheld RF/ Microwave Power meter

The 6970 RF Power Meter provides precision microwave power measurements in a hand held, portable battery-powered package. A wide range of user features, including duty cycle, relative power measurements and limit checking makes the 6970 Power Meter highly versatile.



- Hand-held for portability
- Battery powered for field use
- Wide frequency range 30 kHz to 46 GHz
- Analog bar graph
- Excellent accuracy traceable to National Standards
- Power levels from -70dBm (100pW) to +44dBm (25 W)
- Internal power reference
- Audible Pass/Fail limits alarm
- Rugged case
- Four digit display

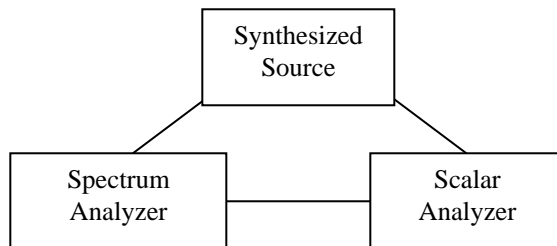
Blue Star Limited 414/2 Sahas Veer Savarkar Marg Mumbai 400 025 Tel: 022-6666 4000

Email id: swapnilpimpale@bluestarindia.com

5: Microwave Test Instruments:

Microwave System Analyzer 6840 series

RF and Microwave System analyzer 6840 series provide an integrated solution to component and subsystem testing



- Integrated synthesized source, scalar and spectrum analyzer
- 3 GHz, 8.4 GHz, 20 GHz, 24 GHz and 46 GHz frequency versions
- Precision scalar network measurements with high dynamic range
- Spectrum analyzer with full range tracking generator
- Offset tracking on network measurements
- Group Delay option
- FM option
- Complete solution to comprehensive component and subsystem characterization
- Real time transmission line Fault Location with 0.1% accuracy
- EEPROM corrected scalar detectors for accurate measurements
- Applications interface allows guided and automatic testing
- Modular design for rapid service USB 2.0 interface for results storage

The range covers five frequency bands in various convenient combinations of source and spectrum analyzer frequencies, enabling for example the harmonic content of microwave radios to be measured.

6841: 1 MHz to 3 GHz Scalar Analyzer with 4.2GHz Spectrum Analyzer

6842: 10 MHz to 8.4 GHz Scalar Analyzer with 20 GHz Spectrum Analyzer

6843: 10 MHz to 20 GHz Scalar Analyzer with 20 GHz Spectrum Analyzer

6844: 10 MHz to 24 GHz Scalar Analyzer with 24 GHz Spectrum Analyzer

6845: 10 MHz to 46 GHz Scalar Analyzer with 46 GHz Spectrum Analyzer

6846: 10 MHz to 8.4 GHz Scalar Analyzer with 24 GHz Spectrum Analyzer

6847: 10 MHz to 20 GHz Scalar Analyzer with 26.5 GHz Spectrum Analyzer

6848: 1 MHz to 3 GHz Scalar Analyzer with 20GHz Spectrum Analyzer

6820 RF and Microwave Scalar Analyzer

6820 series Microwave Scalar Analyzers for fast and accurate testing in field and factory

- Precision scalar network measurements
- 3 GHz, 8.4 GHz, 20 GHz, 24 GHz and 46 GHz frequency versions
- Low noise synthesized signal source with optional step attenuator
- FM option
- Real time transmission line Fault Location with 0.1% accuracy
- EEPROM corrected scalar detectors for accurate measurements
- Applications interface allows guided and automatic testing
- Modular design for rapid service USB 2.0 interface for results storage

The 6820 series of scalar analyzers covers the most commonly required frequency bands in 5 versions. A comprehensive range of accessories is available to support each of these units.

6821 1 MHz to 3 GHz Scalar Analyzer

6822 10 MHz to 8.4 GHz Scalar Analyzer

6823 10 MHz to 20 GHz Scalar Analyzer

6824 10 MHz to 24 GHz Scalar Analyzer

6825 10 MHz to 46 GHz Scalar Analyzer

Phase Noise Measurement System



- PN9000 targets all high end projects combining references, VCOs, DROs etc
 - mmW external mixers to extend coverage up to 140GHz
 - Offers different technique depending on DUT frequency
 - Measures Phase Noise very close to the carrier
 - Modular architecture, easy for future upgrade
- 0.01Hz to 500MHz offset analysis with different options