**IFR-1900 CSA**

In addition to the 2 GHz RF generator, the IFR-1900 CSA also provides full audio/data generator capabilities, full level control and measurement facilities and precision power control features for enhanced sensitivity and high accuracy testing needs. Analog paging encoding/decoding, DTMF, tone coded squelch, digital squelch, AM modulation/demodulation along with two separate AF generators and cross band duplexer gives added test versatility in a variety of wireless systems.

**Software Options Make Complex Testing Simple**

As with every IFR test set, you get the advantage of IFR applications engineering support. Our comprehensive portfolio of application software options are designed to automate and expand the functionality of your instrument.

Plus, on-going software support means that you can easily upgrade your IFR-1900 CSA when test and service requirements change.

AC1009W - EasySpan™ is a Windows-based software utility which extracts spectrum analyzer and tracking generator traces from the IFR-1900 CSA.

AC1017 - AutoCell-Series II is a comprehensive program for FCC compliance testing of Lucent Series II cell sites.

AC1019 - EasySweep™ is a swept measurement utility designed to test antennas and transmission lines.

AC1020D - AutoCell NTD provides automated testing of Northern Telecom cell sites.

AC1021 CeiScan™ cellular utility software simplifies combiner alignment, monitoring RF levels and base stations on DAMPS, NT400 or PCS cellular channel sets.

AC1027 - AutoCell-882/884 is an autotest program for performing acceptance tests on Ericsson 884/882/882D/882M/882DM base stations.

Dynamic IQ Constellation Display

**Simplifies Analysis**

The IFR-1900 CSA provides you with a dynamic constellation display for precise RF modulation analysis of DQPSK digitally modulated waveforms from 10 MHz to 2010 MHz. This unique IFR-1900 CSA feature gives you a near real time display for testing and troubleshooting, an ability that points out the cause of the trouble in digital radios.

**Complex Functionality Made Easy**

Even with its elaborate capabilities, the IFR-1900 CSA was developed to execute complex tests simply and with minimal operator training.

Using field-proven front panel and user man-machine interfaces, the IFR-1900 CSA gives you the performance and ease-of-use features that reduces your testing and training time.

Its test macro command programming language (TMAC) can be easily configured to perform automatic base station testing and remote terminal, single and multimode, single and multiband equipment. This powerful capability allows you to create and save simple “one button” test routines for future use. This flexibility means you can create and execute complex and repeatable routines no matter what your level of expertise.

A new color VGA display gives IFR-1900 CSA users vivid screen clarity. Extensive use of softkeys reduces your complex cellular / PCS parametric and protocol tests to fast, simple and manageable routines.

**Specification**

**RF Signal Generator**

<table>
<thead>
<tr>
<th>(T/R) AND DUPLEX CONNECTOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency Range: 10 MHz to 2010 MHz</td>
</tr>
<tr>
<td>Resolution: 100 Hz</td>
</tr>
<tr>
<td>Accuracy: Same as Master Oscillator</td>
</tr>
<tr>
<td>Range: -127 dBm to +10 dBm into 50 Ω (T/R Connector: -30 dBm maximum with reverse power present)</td>
</tr>
<tr>
<td>Resolution: 0.1 dB</td>
</tr>
</tbody>
</table>

**Audio Frequency Counter**

| Frequency Range: 10 Hz to 200 kHz (in 4 decade ranges) |
| Accuracy: Same as Master Oscillator |
| Resolution: 0.1 Hz (1 Hz to 2 kHz) |
| Resolution: 1 Hz (>2 kHz to 20 kHz) |
| Resolution: 10 Hz (>20 kHz to 40 kHz) |
| Waveform: Sine or Square |

**AF Signal Generators**

<table>
<thead>
<tr>
<th>AF Generators: #1 and #2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Range: 10 Hz to 40 kHz</td>
</tr>
<tr>
<td>Resolution: 0.1 Hz</td>
</tr>
<tr>
<td>Accuracy: 0.1%</td>
</tr>
<tr>
<td>Waveforms: Sine, Square, Triangle, Ramp, Pulse</td>
</tr>
</tbody>
</table>

**Software Options**

AC1019 - EasySweep™ is a swept measurement utility designed to test antennas and transmission lines.

AC1027 - AutoCell-882/884 is an autotest program for performing acceptance tests on Ericsson 884/882/882D/882M/882DM base stations.

**Performance and Ease-of-use**

As with every IFR test set, you get the advantage of IFR applications engineering support. Our comprehensive portfolio of application software options are designed to automate and expand the functionality of your instrument.

Plus, on-going software support means that you can easily upgrade your IFR-1900 CSA when test and service requirements change.
RF Counter

**Frequency Range**
10 MHz to 2010 MHz

**Accuracy**
Same as Master Oscillator

**Resolution**
1 Hz (±10 kHz to ±10 kHz)
10 Hz (±10 kHz to ±150 kHz)

**Minimum Level**
-60 dBm (ANT connector)

**RF Frequency Error Meter**

**Frequency Digital Meter Range**
0 Hz to ±150 kHz

**Bar Graph Meter Range**
0 to ±100 kHz (in 4 decade ranges)

**Accuracy**
Same as Master Oscillator ± LSD

**Resolution**
1 Hz (±1 Hz to ±10 kHz)
10 Hz (±10 kHz to ±150 kHz)

**Minimum Level**
-60 dBm (ANT Input Port)

**RF Power Meter**

**Frequency Range**
100 MHz to 2010 MHz

**Input Level**
0.05 mW to 50 W RMS (<900 MHz, 1–2–5 sequence, 4 decade)
0.05 mW to 20 W RMS (>900 MHz, 1–2–5 sequence, 4 decade)

**Resolution**
1 %

**Accuracy**
±5% (+5 W and <50 W, at Typical Operational Ambient Temperature)

**Low Level Power Meter**

**Frequency Range**
Same as standard RF power meter

**Input Level**
-40 dBm to -10 dBm

**Accuracy**
12% typical

**Receiver**

**Frequency Range**
10 MHz to 2010 MHz

**Sensitivity**
<80 dB for 10 dB SINAD
(1 kHz rate, 6 kHz Dev, FM 2, ANT Input Port)

**Demodulation Output Level**
(FM): 5 Vp–p ±15 % (at full scale into 600 Ω)
(AM): 40 mV RMS ±15 % (5 kHz, into 600 Ω)
(SSB): 11.5 V RMS ±15 % (Beat tone, into 600 Ω)

**Receive IF Output Signal Frequency**
88 MHz to 90 MHz

**IF Bandwidth**
8.5 MHz

**FM Deviation Meter**

**Deviation Range**
±100 Hz to ±100 kHz

**Resolution**
100 Hz (20 kHz ranges)
1 kHz (>20 kHz ranges)

**Accuracy**
±5% ±2 counts + source residual FM (300 kHz IF, <15 kHz rate)

**Modulation Rate**
10 Hz to 40 kHz

**Carrier Range**
100 MHz to 2010 MHz

**Minimum Carrier Level**
-60 dBm (ANT Input Port)

**PM Deviation Meter**

**Deviation Range**
0 Rad to 10 Rad (Peak)

**Resolution**
0.01 Rad (deviation ≤5 Rad)
0.1 Rad (deviation >5 Rad)

**Carrier Range**
100 MHz to 2010 MHz

**Minimum Carrier Level**
-60 dBm (ANT Input Port)

**AM Deviation Meter**

**Modulation Range**
1 % to 90 %

**Resolution**
1 %

**Accuracy**
±0.5 % of full scale ±1 count + source residual AM (30 % to 90 %)

**Signal Frequency**
88 MHz to 90 MHz

**Signal Level**
0.1 VRMS to 30 VRMS (SINAD/BER input)

**Error Vector Magnitude (EVM) Meter**

**Input Range**
NT 400 Channels
Cellular 800 MHz Channels
POTS 1900 MHz Channels

**Minimum Carrier Level**
-60 dBm (ANT Input Port)

**Distortion Meter**

**Distortion Range**
1 % to 20 %

**Resolution**
0.1 %

**Accuracy**
±0.5 % distortion ±1 count (1 % to 10 %)
±2 % distortion ±1 count (>10 %)

**Spectrum Analyzer**

**Range**
10 MHz to 2010 MHz

**Frequency Span Range**
1 kHz/Div to 1000 MHz/Div plus Zero Scan
(10 divisions in a 1-2-5 sequence)

**Accuracy**
±5% of Span Width

**Reference Accuracy**
See Master Oscillator

**Display**
LOG, 10 dB/Div and 2 dB/Div

**Vertical Resolution**
Full Scale/256

**Resolution Switching Error**
<0.1 % (–1 count)

http://www.ifrinternational.com
Overall Accuracy
- 4 dB (10 MHz to 400 MHz) (normalized)
- 5 dB (>400 MHz to 2010 MHz) (normalized)
- 2 dB Log Linearity

Input Attenuator
- 0 dB, 20 dB, 40 dB (User selectable, ANT Input Port)
- 40 dB, 60 dB, 80 dB, (User selectable Pwr <2 W, T/R Port)
- 60 dB, 80 dB, 100 dB, (User selectable, Pwr >2 W, T/R Port)

Bit Error Rate (BER)
- 1x10^-3 to 1x10^-1

Data Rates
- 75, 150, 300, 600, 1200, 2400, 4800 bps & 16 kbps

Data Pattern Size
- 100 to 100,000 bits

Data Pattern Type
- Random, Fixed and User Defined

Input/Output (I/O)

IEEE 488.1-1987 Internally Assigned GPIB Addresses
- System Control Processor (GPIB Address=4)
- TDMA Control Processor (GPIB Address=5)
- RS-232 (Asynchronous) SCSI-1 External Video Port
- Operation Mode, VGA Compliant

Frequency Reference Ports
- BNC Input for External 10 MHz Sync
- BNC Output of Internal 10 MHz Sync

Dedicated Printer Port
- 25-Pin D-Sub, Centronics Compatible

IQ Output Interface
- BNC Connector

TDMA Timeslot Sync
- BNC Connector

Master Oscillator

Frequency Standard
- 10 MHz (Nominal)

Temp Stability
- ±0.01 ppm (0 to 50°C)

General Characteristics

Dimensions
- 188 mm (7.4 in) H, 478 mm (18.8 in) W, 635 mm (25 in) D (with bail handle and front panel cover in place)

Weight
- Less than 21.8 kg (48 lb)

Operating Temperature Range
- 0 to 50°C

POWER REQUIREMENTS

Line
- 105 - 130 to 210 - 260 VAC
- 50 to 60 Hz @ 200 W Maximum

DISPLAY

Type
- Color, Active Matrix LCD

Size
- 96 mm (3.8 in) wide, 86 mm (3.4 in) high

Resolution
- 640 pixel x 480 pixels.

Versions & Accessories

When ordering please quote the full ordering number information.

Ordering Numbers | Versions
--- | ---
1900 | IFR-1900 CSA Service Monitor
1900-C | IFR-1900 CSA Service Monitor with Certificate of Calibration

Accessories
- AC510 Paging Encoder for Flex, GSC and NEC D3
- AC1009W EasySpan for Windows (Waveform Transfer)
- AC1017 AutoCell-Series II (Lucent Series II)
- AC1019 EasySweep (Swept Antenna Measurements)
- AC1020D AutoCell-NTD (Northern Telecom Cell Sites)
- AC1021 CellScan
- AC1027 AutoCell-882/884 (Ericsson)
- AC1036 TIA/EIA-136 Conformance Software
- AC1048 SSD Update & Authentication Test
- AC1201 Telescoping Antenna
- AC3403 TMAC Users Manual
- AC4103 Return Loss Bridge Kit(5 MHz to 2 GHz) (Includes AC1019)
- AC8645 Microphone
- AC9153 Soft Padded Carrying Case

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