

**EasySpan II provides user friendly application software for IFR spectrum analyzers and communications equipment.**



- **Moves trace on spectrum analyzer's display to a PC as an image or data**
- **Save images/traces in BMP, GIF, PCX, JPEG and more**
- **Compatible with IFR's new 2399 spectrum analyzer plus many other IFR instruments**
- **Up to five markers can be placed on a live or stored trace**
- **Remote front panel communication**
- **Allows the ability to draw limit lines for control of trace storage and alarms**
- **Includes measurements - Level, VSWR, Insertion Loss, Carrier to Noise, Field Strength, Cable Fault**
- **Applications allow test routines to be written for automated test sequences**
- **Capable of storing GPS (Global Positioning Satellite) information**
- **Database engine compatible with Microsoft™ Office 97 and 2000**
- **RS-232 operation does not require GPIB commands or special PC cards**
- **A common modem allows simple remote operation**

EasySpan II (AC1109W) is an exclusive spectrum analyzer software application that can be used in conjunction with numerous IFR instruments. It is compatible with the 7550, 8000, 900, 1800, 2390, 2398 and IFR's popular 2399 (9 kHz to 2.9 GHz) spectrum analyzers and 1600, 1900 and COM-120B/C test sets.

#### **The Basics of EasySpan II**

The EasySpan II for Windows software package operates on a PC in a Windows (including Office 97 and 2000 formats) environment that enables extracting spectrum analyzer data/traces from IFR Test Equipment. The software serves as an excellent documentation tool for many applications.

#### **Operation**

EasySpan II allows traces displayed on the screen of an IFR Spectrum Analyzer to be extracted to a PC for evaluation and/or storage. Multiple waveforms can be extracted and linked together, allowing EasySpan II to store one waveform encompassing the desired frequency span up to the entire frequency range of the instrument. Trace and scale offsets can be added to adjust any portion of a waveform to compensate for external devices. EasySpan II can also zoom in on a small part of the waveform and enlarge it for closer examination. Storing and retrieving trace and setup information in database format is easily accomplished. EasySpan II prints to Windows™ compatible devices and exports information to standard spreadsheet programs.

RS-232 adds simplicity and economical operation. Use the modem in your PC to contact a remote spectrum analyzer over the common wire line telephone system or even via a cellular phone. The spectrum analyzer at the remote site, connected to the phone via a modem, will respond as if it is in the same room.

Information that can be included with a displayed trace:

- *Instrument and serial number*
- *Time and date stamp*
- *Up to five markers and text*
- *Difference between marker one and two*
- *Instrument settings*
- *Unit and level indicators*

Images/Traces can be saved in various formats:

BMP  
GIF  
PCX  
JPEG  
MS Paint  
Paintshop  
csv/txt  
clipboard

You have to see it to believe it. Interference is a problem frequently difficult to find. EasySpan II gives you the ability to see or save problems as they appear, enabling the user to zoom in on it during future occurrences, no matter where the spectrum analyzer is located. Being able to react quickly equates to higher quality of service.

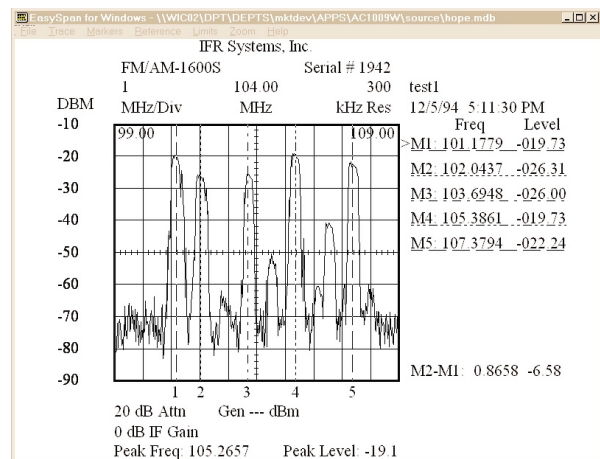
### Measurements

EasySpan II has a wide range of measurement capabilities. When combined with our standard return loss bridge (AC4101), it will evaluate the return loss and VSWR characteristics of antennas, transmission lines and other devices and systems.

- LEVEL
- VSWR (return loss bridge and optional tracking generator)
- RETURN LOSS (return loss bridge and optional tracking generator)
- INSERTION LOSS (optional internal tracking generator)
- CARRIER/NOISE
- CABLE FAULT (power splitter and optional tracking generator)
- FIELD STRENGTH (calibrated antenna)
- BANDWIDTH

### Markers

Up to five markers can be activated on any trace. Markers measure according to selected measurement function (default is amplitude Level and Frequency). A delta function displays the difference between markers one and two, enabling identification of harmonics, adjacent channels and intermodulation products. Markers can be moved to any point on a stored trace for evaluation after the trace has been saved. Comments can be applied to each marker of the trace for more accurate identification and printout purposes. A general comment section is also provided for describing trace parameters, surrounding conditions, weather, etc. in more detail.



### Limit Testing

Limit lines (including the ability to draw grid limits) and save features, automatically save traces with time and date stamping, verifying intermittent interference problems. Using EasySpan II, waveforms can be examined, stored and/or compared to a reference waveform. The number of stored waveforms is limited only by the size of available memory in the PC.

EasySpan II allows creation of limit line entry tables consisting of up to 60 points. The limit line table can be used in the current session or saved and recalled as needed. The limit lines can be applied later to previously stored traces. In addition to the limit table, a limit line can be drawn on the grid of EasySpan II that follows the grid and is not frequency and level dependant. Traces can also be manipulated to create limit lines.

Major EMI regulations are included. EasySpan II is supplied with limit lines for CISPR, FCC, VCCI and VDE conducted and radiated emissions.

EasySpan II can be instructed to store only traces that exceed an upper and/or lower limit line in the following modes:

- NORMAL - All traces that exceed the limit line/s are saved.
- CROSSING - The first trace to cross the limit line and the first trace to be compliant are saved.
- PEAK CROSSING - The first trace to exceed the limit line, the peak signal archived and the last trace to exceed the limit line are saved.

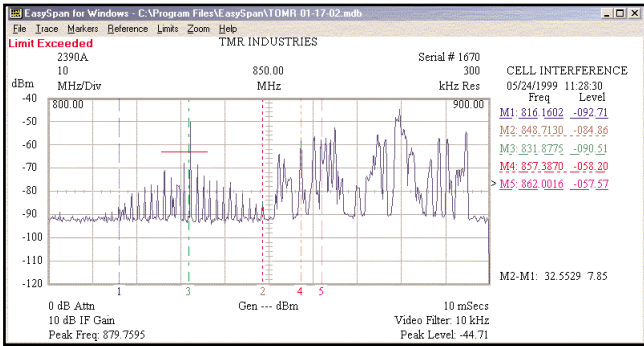
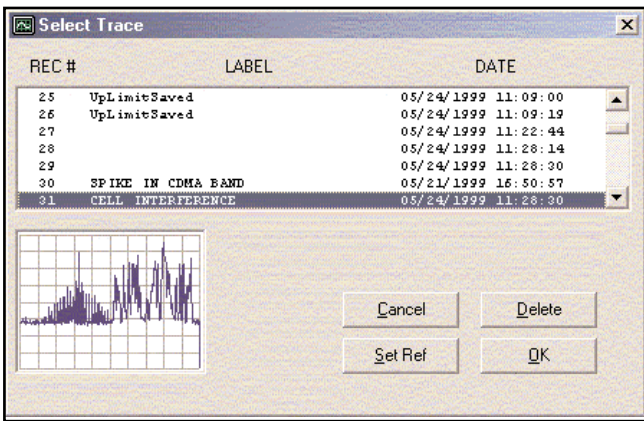


Figure 2 is of a trace of a failing cellular phone caused by improper installation. The limit line triggered the trace to be saved. Marker 3 displays its center frequency and M2-M1: displays its bandwidth (in excess of 32 MHz).

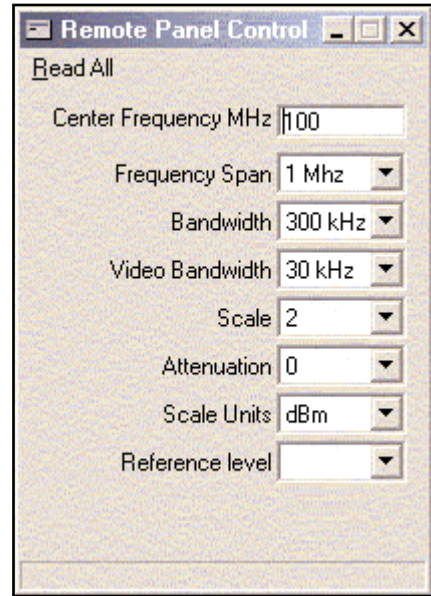
### Trace Storage and Recall

Traces are stored in a compact format of around 2 Kbits, allowing many to be saved on a hard drive for proper site evaluation. Stored traces are easily recalled and viewed in a thumbnail window before selection.



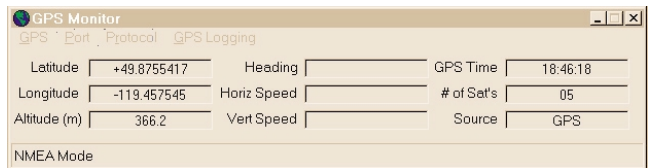
### Remote Front Panel

EasySpan II can communicate remotely with the instrument through direct connection or a modem using the RS-232 serial communication format. The instrument can be located around the world and when used with an auto-answer modem, will return the same trace information through telephone lines. A front panel control window allows remote instrument settings without writing text code in terminal mode. Set center frequency, span, bandwidth (RBW), video bandwidth, scale, input attenuation, scale units, and reference level with the use of the Remote Front Panel shown. For more intricate setups, the Terminal mode may be used.



### GPS Capabilities

A GPS receiver may be connected to your PC RS-232 port allowing EasySpan II to store GPS (Global Positioning Satellite) information with trace information. It allows the capture of location and signal strength data with a single operation, characterizing signal strength relative to a transmitter's location. It also automatically acquires traces that are triggered by distance traveled. The result is a powerful new tool to perform network coverage analysis and identify low signal level locations.



### Keyboard Shortcuts

Keyboard shortcuts make it easy to simplify and speed up operation. They provide easy manipulation of saved traces and markers for quick evaluation. With simple keystrokes one can move from previous to next trace, marker to peak, next peak, minimum peak, or even 5 markers to peaks.

### Applications

Applications are a way to add automation to a repetitive test sequence. Using simple text format they are easily written, including the spectrum analyzers and EasySpan II macro commands. Pictures of the setup and calibration procedures can be added to the application's sequence, ensuring correct setup and calibration, for repeatable results.

The sample application below sets up, calibrates and runs a simple insertion loss measurement of a 500 MHz filter. Lines with the # sign preceding the commands are EasySpan II macro commands. Other lines are standard spectrum analyzer commands.

```
#trace:plots:norm
#mark:all:off
#clr
syst:default
disp:anal
#wait 2
anal:inp:ant
anal:freq 500
anal:span 100000
anal:track 1
anal:track:lev -20
#promptimage insloss1.pcx
#trace:new:live
#ref:setref
#promptimage insloss2.pcx
#trace:new:live
#mark:mark1
#markermin
#trace:plots:insloss
```

#### Requirements

EasySpan II (a 32-bit application) operates on a PC equipped with the following: Windows 95 or greater, 8 MB of free hard disk space (program and support files), RS-232 Interface, CDROM.

Whatever the need, EasySpan II for Windows™ makes it easier to identify and characterize RF spectrum and/or device performance.

#### CHINA

Tel: [+86] (10) 6467 2823  
Fax: [+86] (10) 6467 2821

#### EUROPE NORTH

Tel: [+44] (0) 1438 742200  
Fax: [+44] (0) 1438 727601

#### EUROPE SOUTH

Tel: [+44] (0) 1438 742200  
Fax: [+44] (0) 1438 727601

#### FRANCE

Tel: [+33] 1 60 79 96 00  
Fax: [+33] 1 60 77 69 22

#### GERMANY

Tel: [+49] (8131) 29260  
Fax: [+49] (8131) 2926130

#### HONG KONG

Tel: [+852] 2832 7988  
Fax: [+852] 2834 5364

#### LATIN AMERICA

Tel: [+1] (972) 899 5150  
Fax: [+1] (972) 899 5154

#### SCANDINAVIA

Tel: [+45] 9614 0045  
Fax: [+45] 9614 0047

#### SPAIN

Tel: [+34] (91) 640 11 34  
Fax: [+34] (91) 640 06 40

#### UNITED KINGDOM

Tel: [+44] (0) 1438 742200  
Toll Free: [+44] (0800) 282 388 (UK only)  
Fax: [+44] (0) 1438 727601

#### USA

Tel: [+1] (316) 522 4981  
Toll Free: [+1] (800) 835 2352 (US only)  
Fax: [+1] (316) 522 1360

email **[info@ifrsys.com](mailto:info@ifrsys.com)**

web **[www.ifrsys.com](http://www.ifrsys.com)**

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