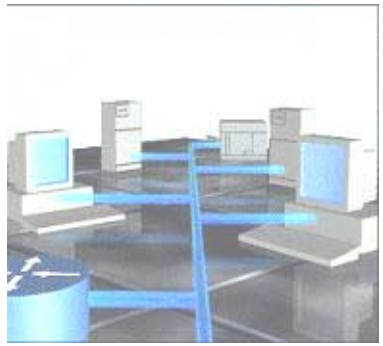
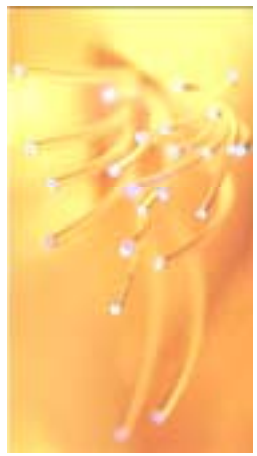
TERADYNE





Introducing the Teradyne FLEX Test System

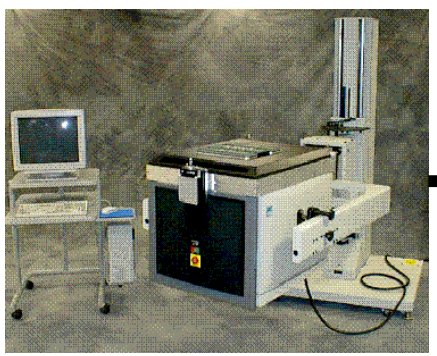
and it differences to J750

Because technology never stops

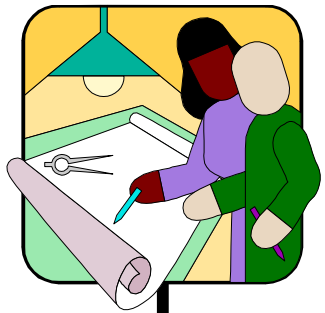
Introducing the *FLEX*

Integrating Teradyne's Strengths

- Analog instrumentation performance/breadth
- 3 generations of mixed-signal test architectures



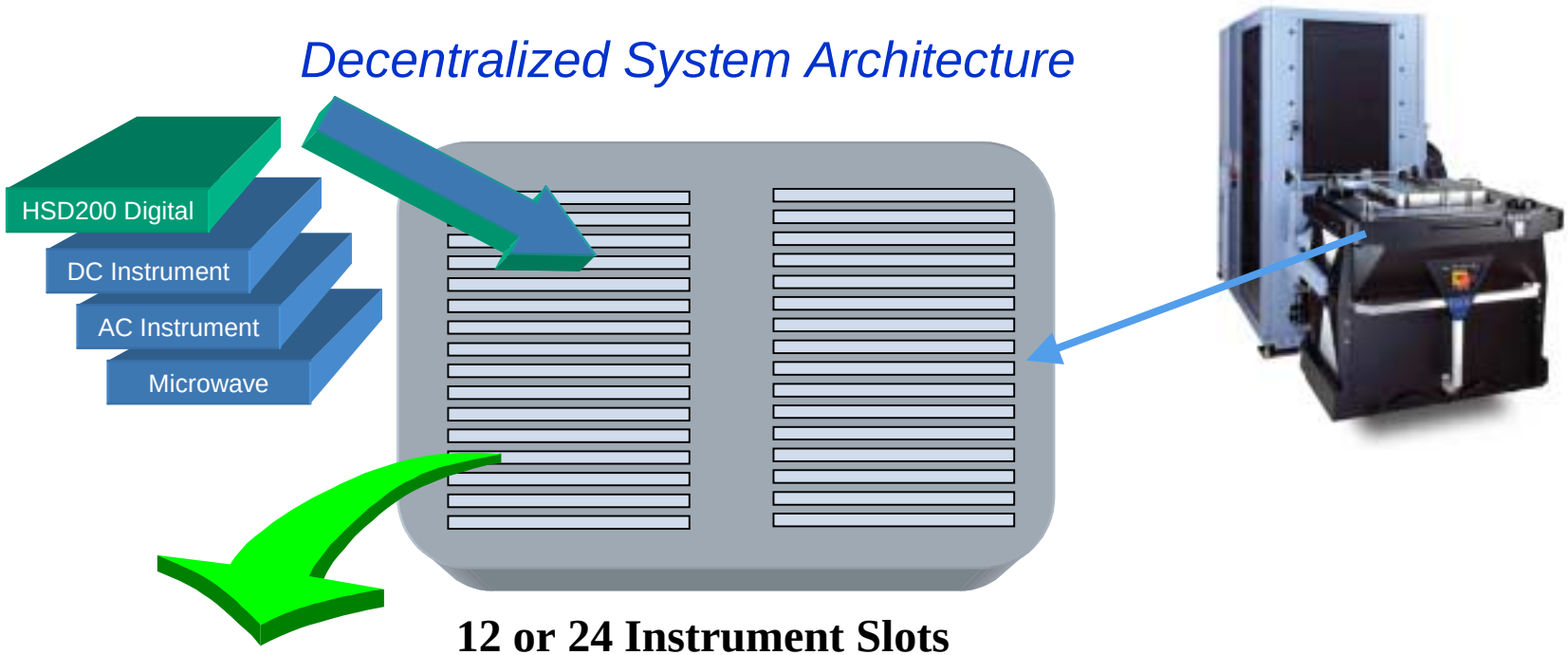
- Low cost, CMOS-based design
- IG-XL software ease-of-use
- High instrument density



- Breakthrough R&D
- Applications expertise

- **Breakthrough in mixed-signal SOC economics**
- IG-XL software for ease-of-use, compatibility
- Analog instrumentation breadth and performance
- 4th generation mixed-signal architecture

Universal Slot Test Head



Universal Slot Test Head – ***Scalable Performance***

Air Cooled slots for optimal economics

Cable Connect DIB for flexible configuration of signal delivery

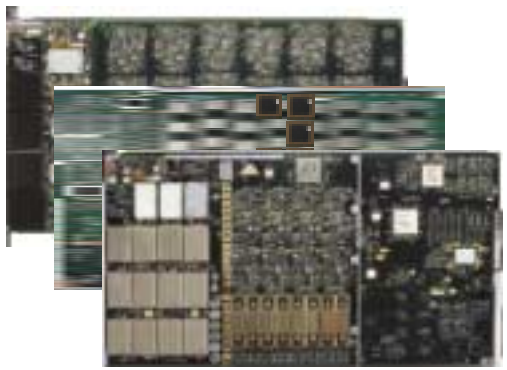
Direct Access to the Sync-Link and Background DSP Architecture

IG-XL Vertical Sliced Instrument Software

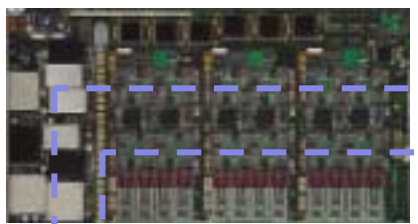
FLEX is highly configurable

Universal slot test head

High density single board instruments



48 ch	200 MHz digital
24 ch	25 V digital, 75 V PMU
8 ch	octal op amp loop
20 ch	30 V / 200 mA dynamic DC
6 ch	15 A dynamic DC
4 ch	75 V / 2 A dynamic DC
4 ch	90 V dynamic DC
4 ch	15 MHz, source and capture
4 ch	VHF AC source & capture
2 ch	Low jitter 1 GHz clock
11 ch	6G Microwave



Future capability
- High density device power supply
- High density digital
- Open Architecture designed instruments

High density instruments and universal slot test head key to field reconfigurability

J750 tester

64 Channels per Board

100 MHz

512/1024 I/O Pins

4 / 16 Meg Per Pin Vector Memory with integrated Scan

Flexible Pattern and Timing Architecture

x32 True Parallel Test

Full suite of instruments:

- ⇒***SCAN***
- ⇒***Converter Test Option***
- ⇒***Memory Test Option***
- ⇒***High Voltage Drivers***
- ⇒***Mixed Signal Option***

J750 and FLEX Instrumentation comparison

J750	FLEX

❑ Digital
• 64 channels digital
• Maximum 16 slots (max. 1024 channels)
• Build-in option
  • digital signal source/capture (DSIO)
  • memory test option (MTO)
  • scan option
	❑ Digital
	• 48 channels digital
	• Maximum 24 slots (max. 1152 channels)
	• Build-in option
	  • digital signal source/capture (DSSC)
	  • memory test option (MTO)
	  • scan option

❑ DC and Power • DPS - 8 ch 1A VI • APMU - 64 ch 35V HV digital	❑ DC and Power • DC30 - 20 ch 30V/200mA VI, TMS/meter • DC75 - 4 ch 75V/2A VI, TMS/meter • DC90 - 4 ch 90V/10A pulsed VI, TMS/meter • HVD - 24 ch 25V HV digital, 75V PPMU • HexVS - 6 ch 6V/15A, merge to 90A
❑ Mixed Signals Instrument • Mixed Signal Options (MSO) • Converter Test Options (CTO)	❑ Mixed Signals Instrument • Baseband (BBAC) • Very High Frequency (VHFAC) • Microwave RF instrument

High Speed Digital

J750

- Digital channel
  - **Channels per board** – 64 channels
  - **Maximum Large vector memory** – 16 Meg
  - **Maximum board per tester** – 8 /16
  - **Maximum channels per tester** – 512/1024
  - **Maximum vector rate** – 100Mhz
  - **Pin Level**
    - **vil range** - -1 to + 6V
    - **vih range** - 0 to 7.1V
    - **vol range** - 0 to +5V
    - **voh range** - 0 to +5V
  - **Driver Specification**
    - **min pulse width (3V)** - 3ns
    - **rise/fall time (3V)** - 1.9ns
    - **Edge accuracy** - ± 500 ps
  - **Per Pin Measurement Unit**
  - **High Voltage pin**
    - 4 pins per board (0 to +16V)

FLEX

- Digital channel
  - **Channels per board** – 48 channels
  - **Maximum Large vector memory** – 64 Meg
  - **Maximum board per tester** – 24
  - **Maximum channels per tester** – 1152
  - **Maximum vector rate** – 200Mhz
  - **Pin Level**
    - **vil range** - -1 to + 6V
    - **vih range** - -1 to 6V
    - **vol range** - -1 to + 6V
    - **voh range** - -1 to + 6V
  - **Driver Specification**
    - **min pulse width (3V)** –2.2ns
    - **rise/fall time (3V)** - 1.5ns
    - **Edge accuracy** - ± 250 ps
  - **Per Pin Measurement Unit**
  - **High Voltage pin**
    - 2 pins per board (0 to +20V)

High Speed Digital -MTO

J750

- Memory Test Option (MTO)

  per board

  - **50 MHz** execution rate
  - **8M 48-bit word Capture Memory**
  - Algorithmic Pattern Generator
  - 2 X 16-bit address generators (X+Y)
  - 2 data generators:
    -(2) 1-bit and (1) 16-bit
  - 2 Scramble RAMs
  - Topological inversion
  - 512K x 16 Fail Map Memory

FLEX

- Memory Test Option (MTO)

  per board

  - **100MHz** execution rate
  - **24M 64-bit word Capture Memory**
  - Algorithmic Pattern Generator
  - 4 X 16-bit address generators (X+Y)
  - 4-bit Z address generator
  - 2 data generators:
    -(2) 1-bit and (1) 32-bit
  - 2 Scramble RAMs
  - Topological inversion
  - 1M x 32 Fail Map Memory

High Speed Digital -Scan

J750

- Scan Option
  - **Max. number of chains per board** - 16
  - **Chain**; 2 channels (1 Drive/1 Compare)
    Drive 0 or 1
    Compare L, H. or X
  - **Scan Chain Depth (16M LVM/Board)**
    1 Chains/64-channel board 256M
    16 Chains/64-channel board 16M
  - **Maximum Scan Data Rate** 50MHz

FLEX

- Scan Options
  - **Max. number of chains per board** - 24
  - **Chain**; 2 channels (1 Drive/1 Compare)
    Drive 0 or 1
    Compare L, H. or X
  - **Scan Chain Depth (64M LVM/Board)**
    1.5 Chains/48-channel board 1.54G
    24 Chains/48-channel board 128M
  - **Maximum Scan Data Rate** 200MHz

High Speed Digital – Power Supply

J750

- Digital Power Supply (DPS)

- **Digital Power Supply**
  - 8 Channel V/I per board
  - 0V to 10V 1A per channel
  - Max 4 board per tester
  - Max 32 power supply per tester

FLEX

- DC and Power Supply
- **Power Supply - DC30**
  - 20 Channel V/I with Meter per Channel
  - +/- 30V, 100mA or +/-10V, 200mA per channel
  - Functional DC source and measurement

- **Per-Pin Power Resource DC75**
  - 4 Channel V/I with Meter per Channel
  - +/- 75V, 350mA to +/-6V, 2A per channel
  - Functional DC source and measurement

- **Per-Pin High Power Resource DC90**
  - **4** Floating V/I with Meter per Channel
  - 25V 20A or 180V 500mA pulsed
  - Functional DC source and measurement

- **Per-Pin High Power Resource HexVS**
  - 6 High Current Voltage Sources with Meter per Channel
  - 5.5V 15A, Merge able to 90 A @ 3.6V
  - Current Profiling
  - Fast current transition response

High Speed Digital – Mixed Signal Option

J750

- Mixed Signals Instrument
- **Mixed Signal Options (MSO)**
  - **4 Sources and 4 Captures per board**
  - **Source**
    16 Meg source memory
    LF to 20 KHz (SINAD 100dB)
    HF to 23 MHz (SINAD 52 dB)
  - **Capture**
    32 Meg capture memory
    LF to 20 KHz (SINAD 100dB)
    MF to 6 MHz (SINAD 74 dB)

Converter Test Option (CTO)

- **8 instruments per board**
- **Max. 4 board per tester (32 instr max.)**
- **Voltage range** - 0 to 6V and 0 to 3V ranges
- 14 bit accuracy (16 bit resolution)
- 2 Reference voltage sources
- Pattern Generator controlled
- Optimized for Linearity testing of A/Ds

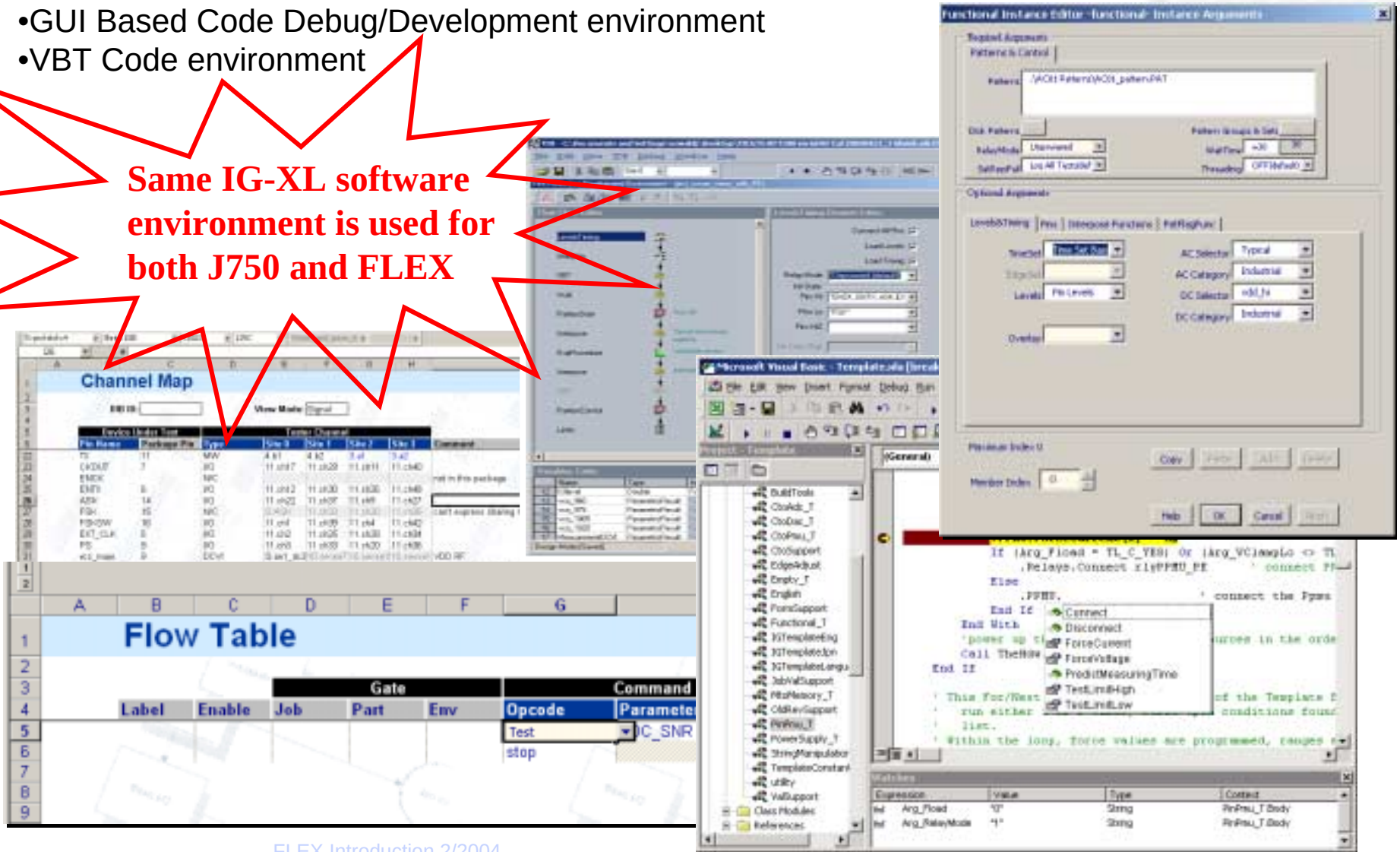
FLEX

- Mixed Signals Instrument
- **Boardband AC (BBAC)**
  - **2 AWGs and 2 digitizers per board**
  - Bandwidth - 15MHz
  - -154 dB/Hz noise floor
  - -120 dB THD, -114 dB SNR
  - PPMU per channel
  - Single-ended or differential
- **VHFAC**
  - **2 AWGs and 2 digitizers per board**
  - **Sources**
    400MS/s Sampling Rate
    8M sample Waveform Memory
    -75dB Harmonics and Spurs @ 1Mhz
  - **Digitizer**
    - DC to 32.5 MHz, 14 bits
    - DC to 62.5 MHz, 12 bits
    - Under sampling: DC to 300MHz
    - -75dB Harmonics and Spurs @ 1Mhz
    - 1 Mega-sample capture memory

Software - IG-XL

- Excel Spreadsheet based environment
- GUI Based Code Debug/Development environment
- VBT Code environment

Same IG-XL software environment is used for both J750 and FLEX



Software – OS platform and IG-XL version

J750

IG-XL version
Latest release IG-XL 3.40.11

OS software
Offline
- Windows NT
- Windows 2000 (V3.30.00 or higher)
- Windows XP (V3.40.09 or higher)

Online
- Windows NT
- Windows 2000 (V3.40.00 or higher)
- Windows XP (V3.40.09 or higher)

Microsoft office
- Office 97
- Office 2000 (v3.40.00 or higher)
- Office XP (v3.40.09 or higher)

FLEX

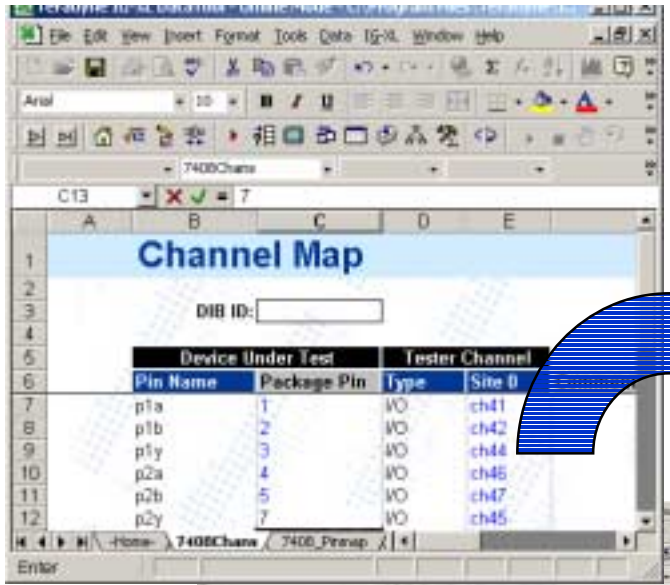
IG-XL version
Latest release IG-XL 5.00.60

OS software
Offline
- Windows 2000
- Windows XP

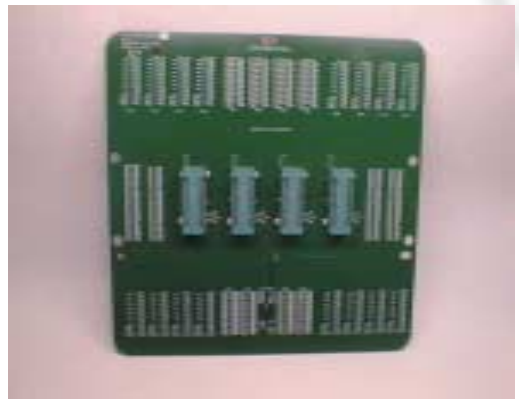
Online
- Windows 2000
- Windows XP

Microsoft office
- Office 2000
- Office XP

Software – channel map differences

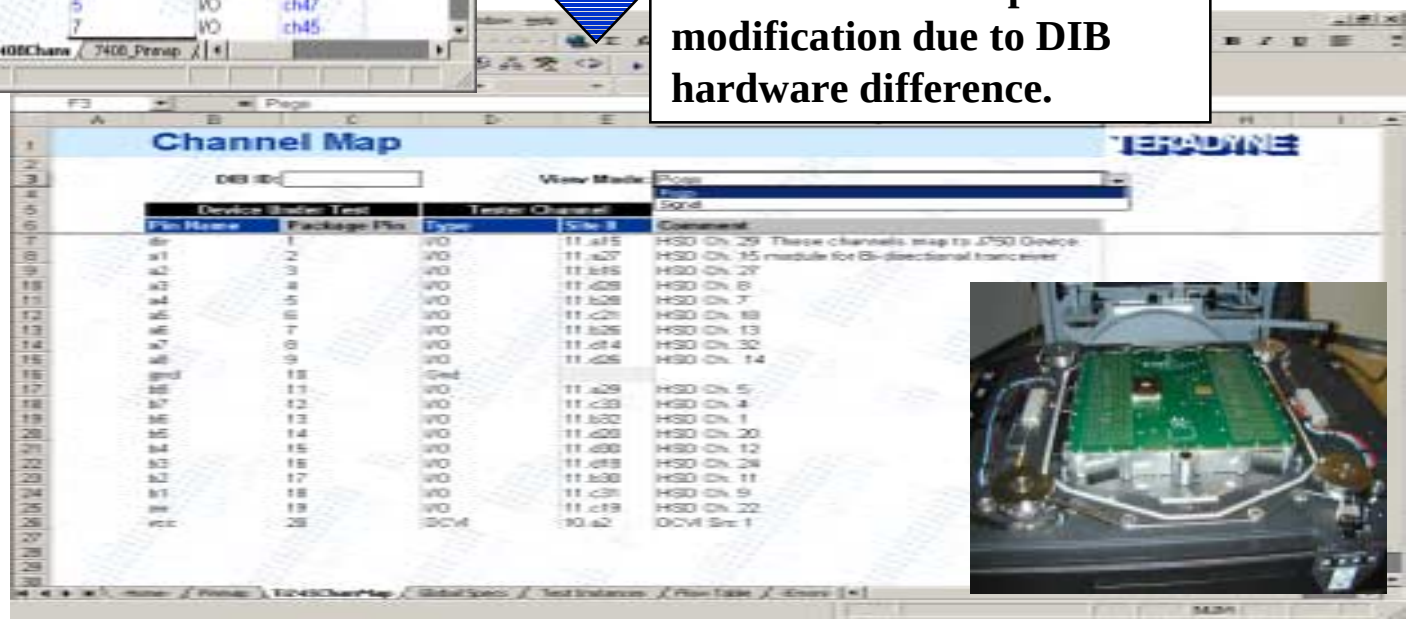


J750



Minor channel map modification due to DIB hardware difference.

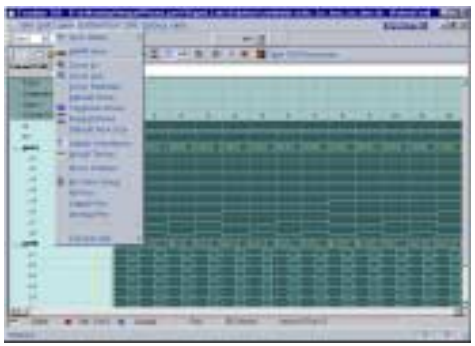
FLEX



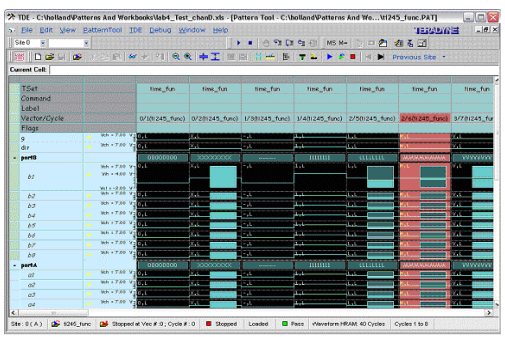
Software - IG-XL (FLEX Debug tools)

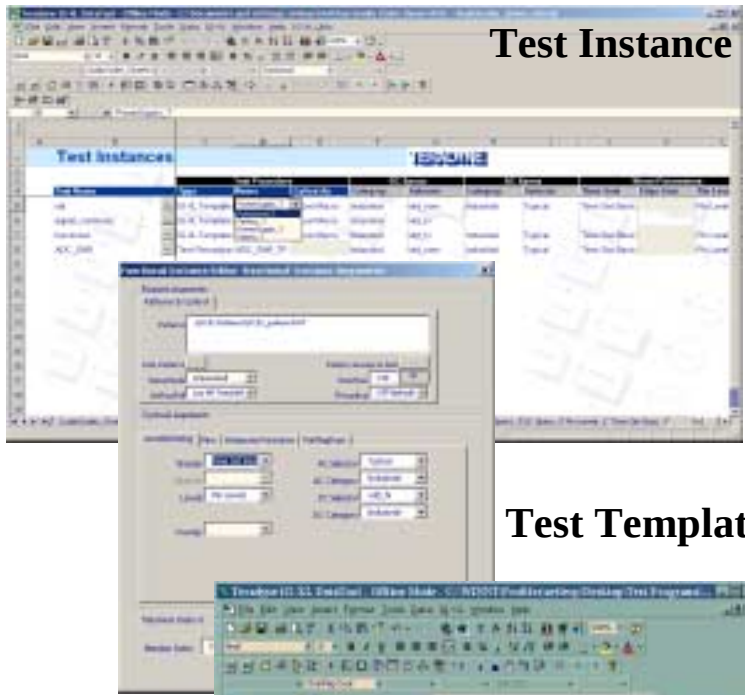
More extensive debug tools available on FLEX

Pattern Tool II



HRAM Pattern Tool





Test Debug Environment

VBA Debug