

# Pegasus Application

## SMT8036

SUNDANCE MULTIPROCESSOR TECHNOLOGY LTD.

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## Revision Record

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# 1 Comments

This Pegasus Application is working on **Windows 2000**.

The [SMT6300](#) from Sundance should be installed on the machine on which the application is going to run.

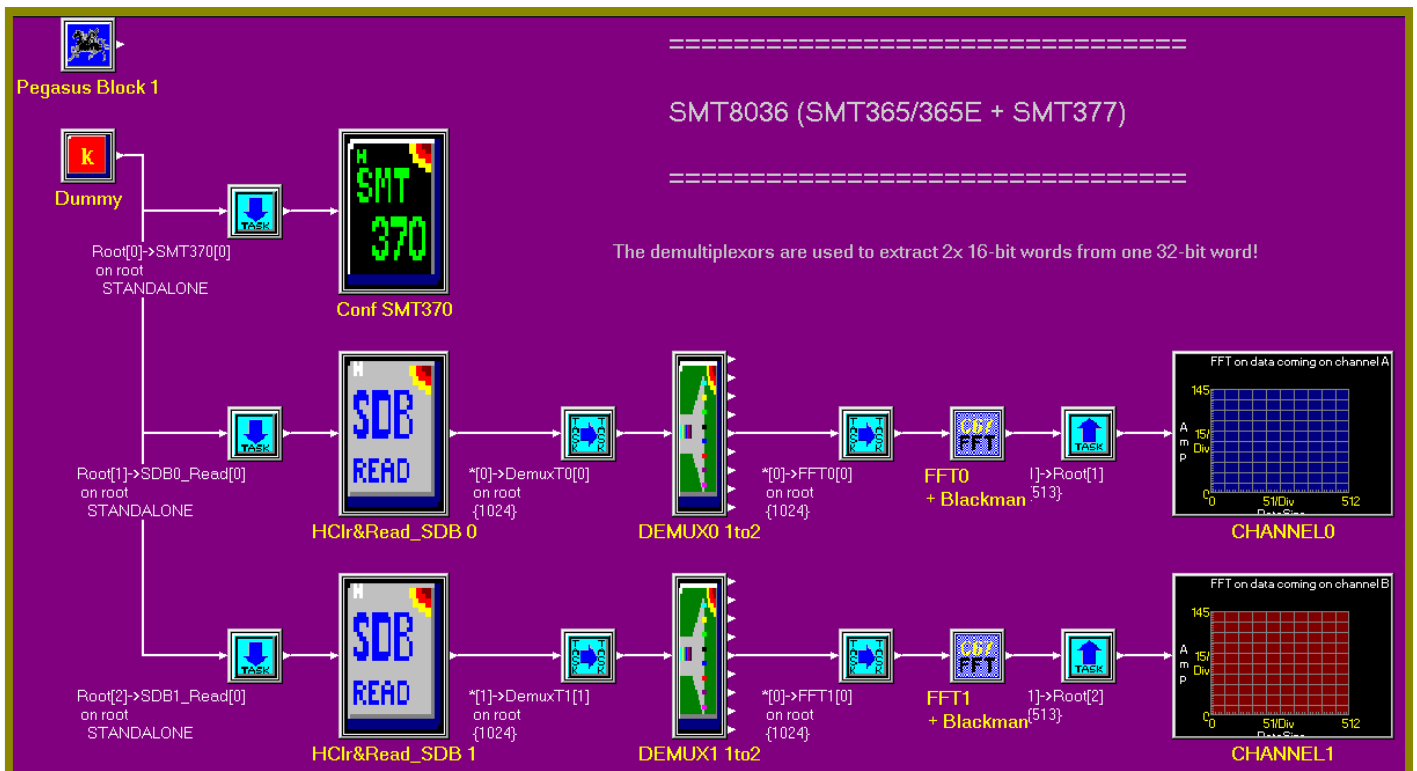
# 2 Pegasus Application: description

The following Pegasus application is implemented on a [SMT365](#). During the initialisation the [SMT370](#), which are FPGA board, are configured. Then a signal is send to the [SMT370](#) used as a pattern generator.

On the [SMT370](#) the DACs output the signal to the ADCs. Then the signal goes to the [SMT365](#) via the SHB.

The [SMT365](#) read continuously the data on which a 10-point FFT is performed for each 1024 samples received. Then the data is sent to the PC where the result of the FFT is displayed in real time on the screen.

The **Figure 1** represents the block diagram of this Pegasus Application.



**Figure 1: Block diagram of the Pegasus Application**

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### 3 Hardware Installation

The hardware configuration is the one for the SMT8036 system. For more information see the [SMT8036 User Manual](#).

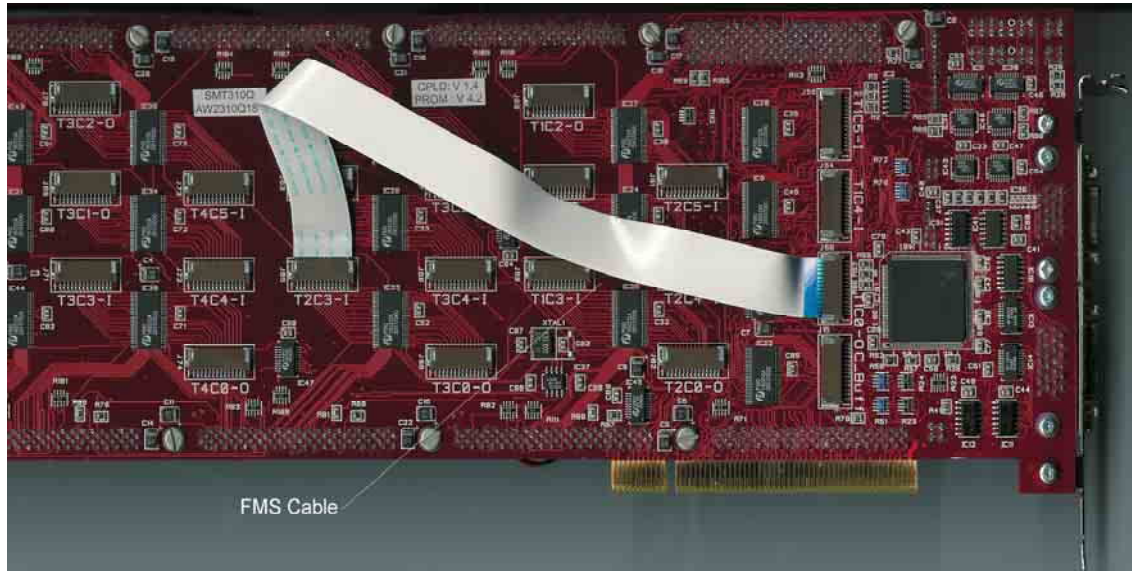


Figure 2: ComPort connection, T1C0<->T2C3

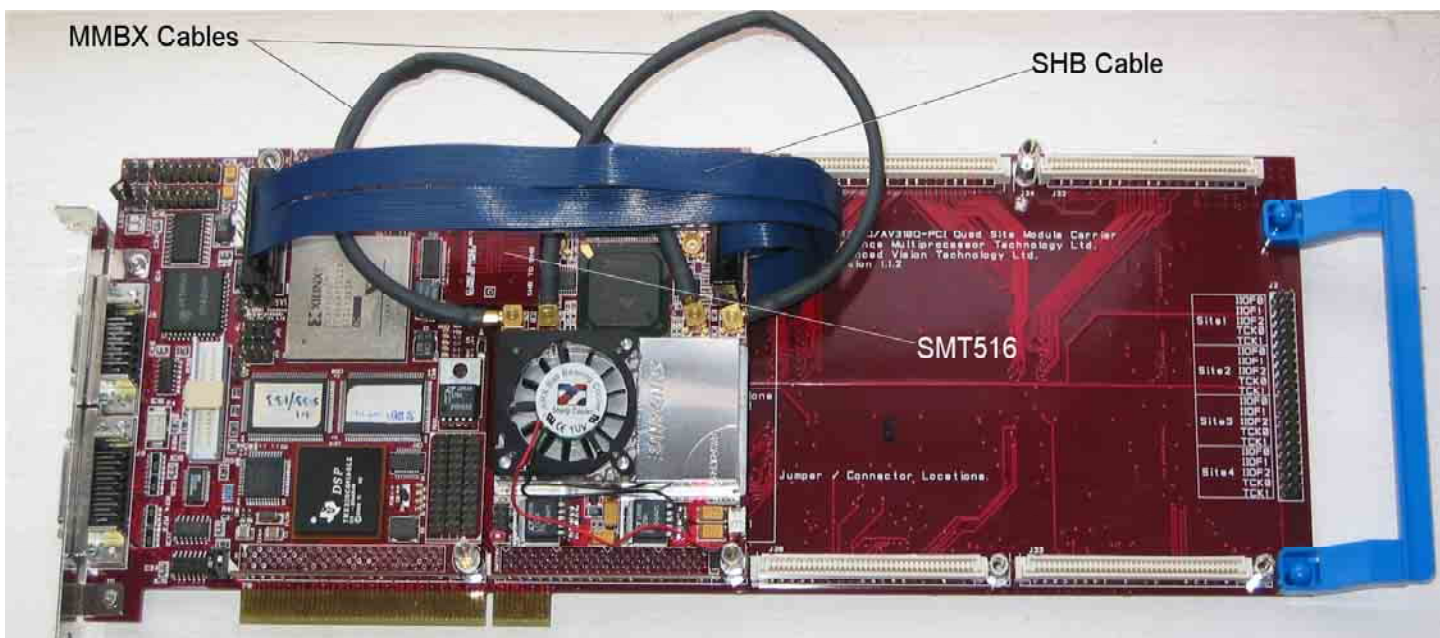
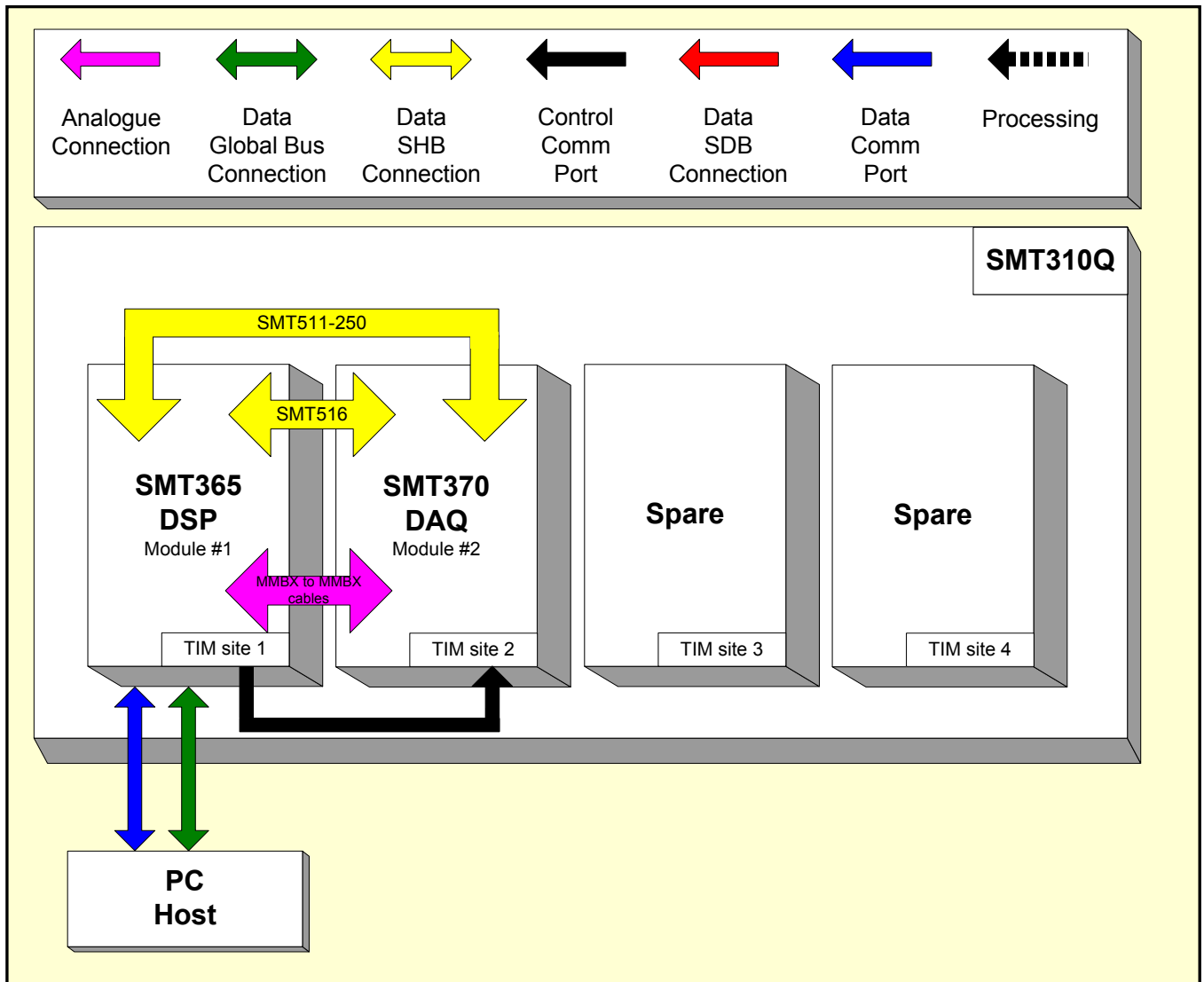


Figure 3: SHB connections: SHBB (365) <-> SHBA (370)  
 SHBA (365) <-> SHBB (370);  
 DAC and ADC connections: J12 <-> J10  
 J13 <-> J9.

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## Architecture

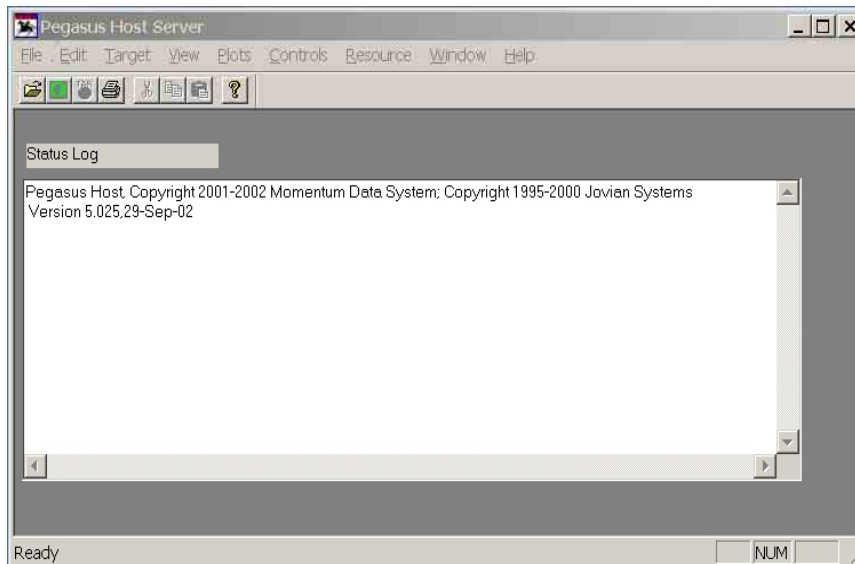
The following diagram shows the architecture of the SMT8036 system:



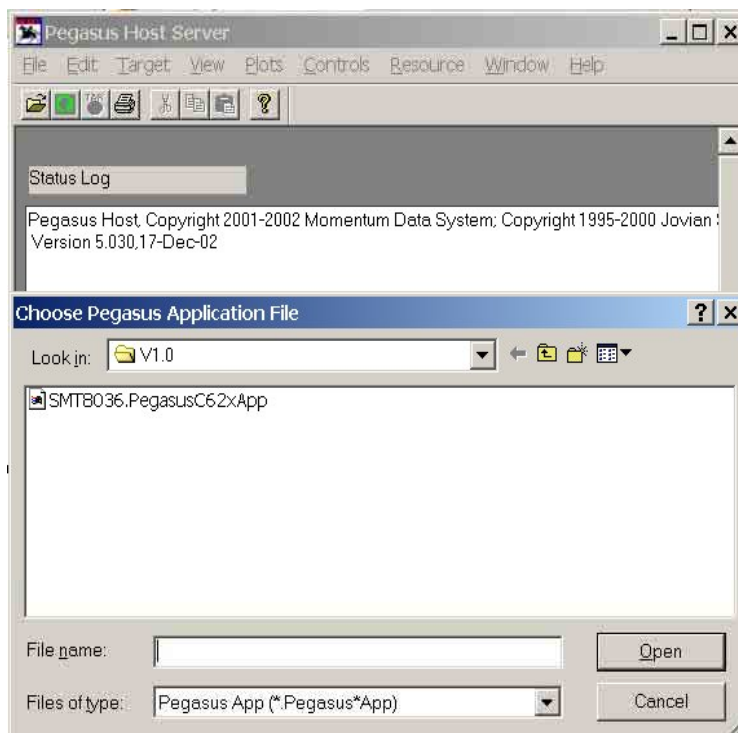
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## 4 Software Installation.

1. Unzip SMT8036V1\_0.zip in a folder MyFolder (for example) in your drive directory.
2. Go in \\MyFolder and open **PegHost.exe**. A window named "Pegasus Host Server" should open



3. Go in **File** -> **open** and browse to \\MyFolder\SMT8036.PegasusC62xApp



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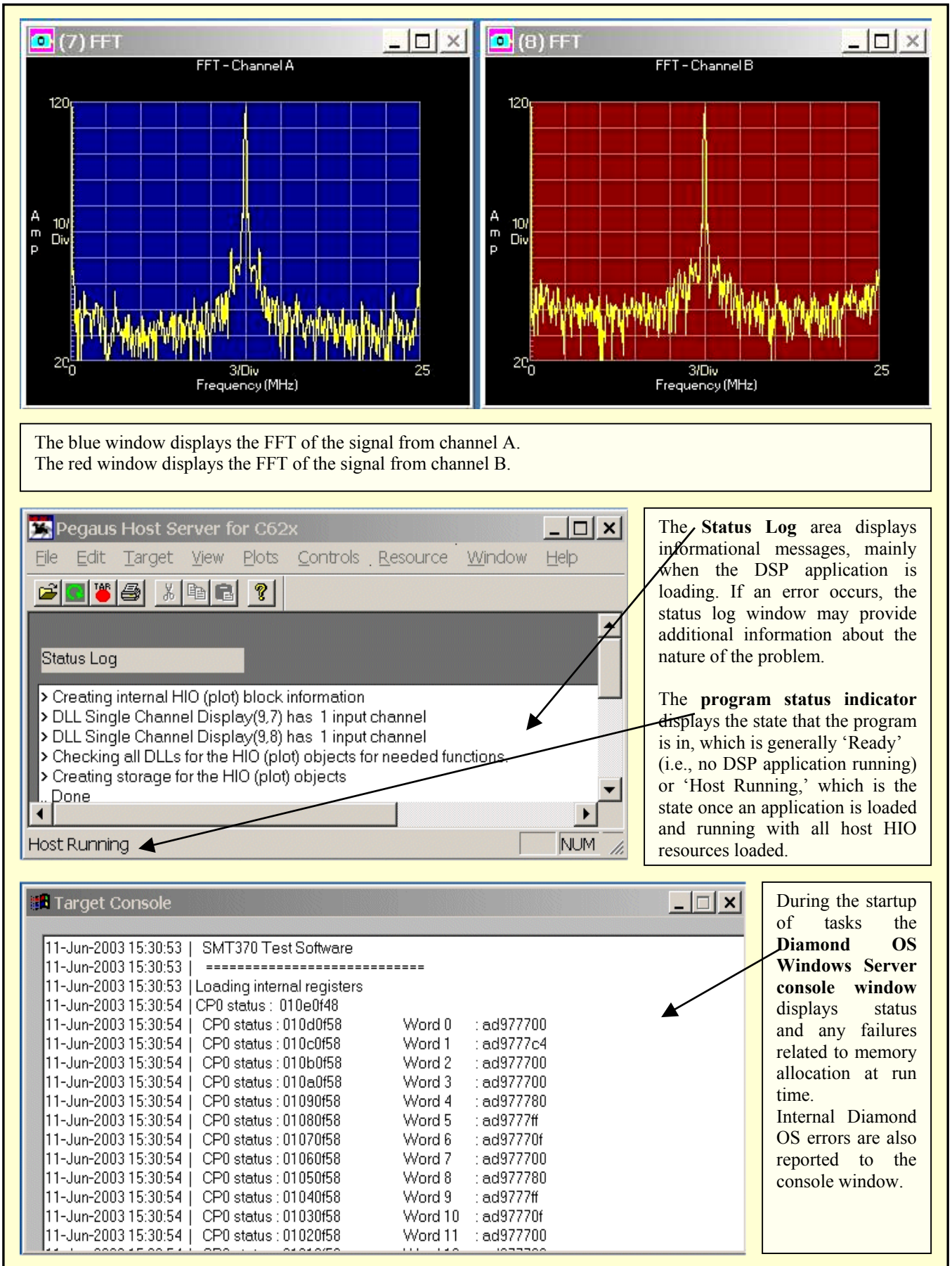
Now several display windows should open.  
Automatically you should have a nice layout of the application.  
If it's not the case go to **View** -> **restore** and browse to  
\\MyFolder\SMT8036.PegView.

## 5 Pegasus Application.

Once the Pegasus Application is launched something similar to the *Figure 4* should appear on your screen.

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The blue window displays the FFT of the signal from channel A.  
The red window displays the FFT of the signal from channel B.

The **Status Log** area displays informational messages, mainly when the DSP application is loading. If an error occurs, the status log window may provide additional information about the nature of the problem.

The **program status indicator** displays the state that the program is in, which is generally 'Ready' (i.e., no DSP application running) or 'Host Running,' which is the state once an application is loaded and running with all host HIO resources loaded.

During the startup of tasks the **Diamond OS Windows Server console window** displays status and any failures related to memory allocation at run time. Internal Diamond OS errors are also reported to the console window.

**Figure 4: The Pegasus Application running**

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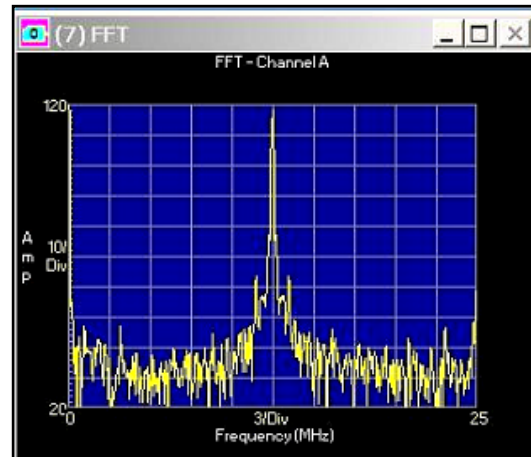
## Comments:

Once the application is running you can double click on the display windows and change the settings.

For example there are six possible modes within the Single Channel Display block:

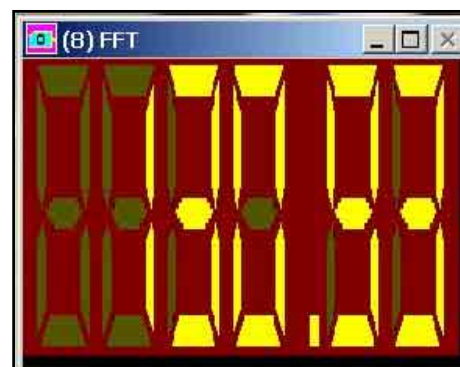
### **Connected Mode:**

In this mode a data sample is plotted and then a line is drawn to the next data sample. If the shape option is specified, the chosen shape is drawn in the proper position and a line is drawn to the shape.



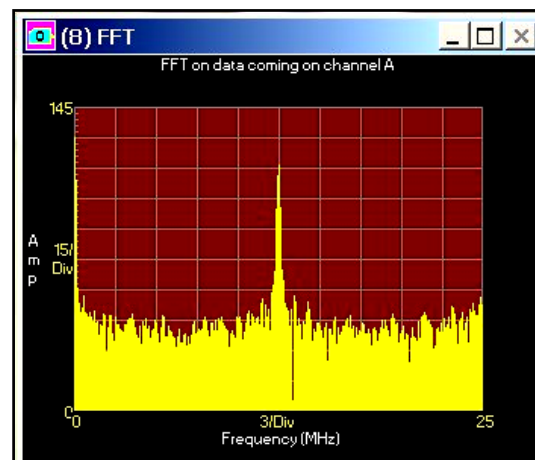
### **Digital mode:**

In this mode, a single data point of the input frame of data is displayed in a digital format. The block's FrameOffset parameter allows you to select which data sample is displayed.



### **Discrete mode:**

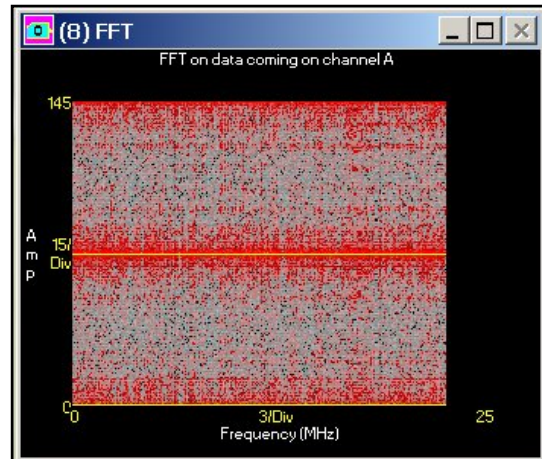
In this mode the data is plotted as with the Connected Mode, but additionally a vertical line is drawn to the X-axis. If shape option is specified, the chosen shape is drawn in the proper position and on the X-axis in the same horizontal position.



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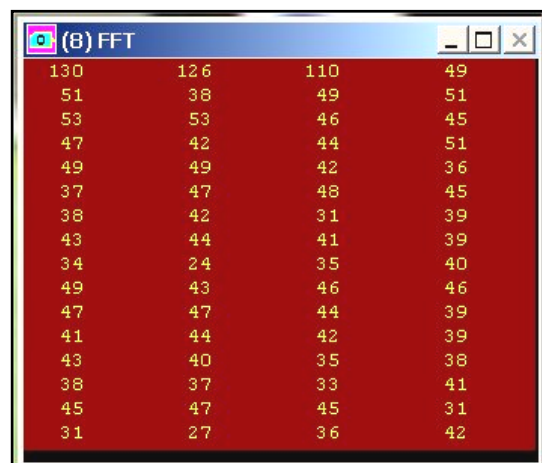
**Spectrogram mode:**

In this mode the data is plotted vertically, one pixel wide, and is assigned a display colour based upon the amplitude of the signal.



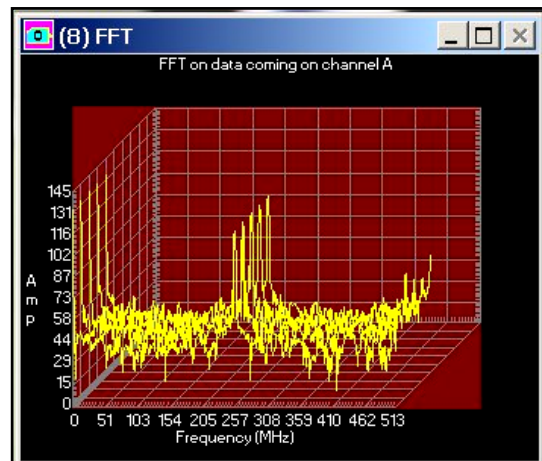
**Text Mode:**

In this mode the data is displayed numerically in the specified text format. Only the data that fits in the specified region will be displayed. You can size the window as required.



**Waterfall mode:**

In this mode several frames of data are displayed on the same graph such that a time history of the data is recorded. An angle offset can be applied to the data to allow for optimal viewing.



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