



NuStreams-P5G User's Manual

Foreword

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Contact Information

Xtramus Technologies

E-mail: sales@xtramus.com

Website: www.xtramus.com

Tel: +886-2-8227-6611

Fax: +886-2-8227-6622

Revision History

Date	Version	AP Version	History
2011/03/17	Ver 1.0		First draft version
2011/04/25	Ver 1.1		<ol style="list-style-type: none">1. Page 38&45, add notes so the readers can understand that this manual is for NuSet-MiniPG-Config/UG only.2. Page 39, add a note regarding to warning messages.
2011/09/13	Ver 1.1	Ver 1.0b023	<ol style="list-style-type: none">1. Change USM template.2. Change USM file name, removing NuStreams-P9A from the file name and set the version number to Ver 1.1.3. Remove all contents relating to NuStreams -P9A and rewritten the whole manual.4. Adding sections about NuSet-MiniPG-ST.

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1. NuStreams-P5G Overview

1.1. NuStreams-P5G General Description

NuStreams-P5G is a five-port Gigabit stand-alone **Switch/Residential Gateway (Broadband Router)** test device for testing switches and broadband routers (along with their switch ports) at wirespeed with its **1 LAN Port, 3 Switch Ports, and 1 WAN Port**. Also, **NuStreams-P5G** can also be connected to PC for accessing its simple and easy-to-use configuration utility.



Each of **NuStreams-P5G**'s **3 RUNs** contains **4 Tasks**. These Tasks allow users to simultaneously test **10M Full/Half, 100M Full/Half, and 1000M Full** with a single button. This innovative design can greatly reduce the time consumed when performing product tests.

With 3 different Test Types (**Router, Switch, and Router + Switch**) available, **NuStreams-P5G** can perform tests on switch/router, or combining each of these test subjects under "**Router + Switch**" Test Type, and test a broadband router's WAN/LAN performance at the same time.

NuStreams-P5G supports bi-direction LAN/WAN test packets with 253 IP addresses. Each IP has its own settings and transmitting/receiving counters, including independent statistics and calculations for latency and Serial Number. Also, both DUT and **NuStreams-P5G**'s IP addresses can be any IP of 256 IP addresses from Class C.

NuStreams-P5G comes with its own software. **NuSet-MiniPG** allows users to set DUT test criteria, upgrading **NuStreams-P5G** firmware/FPGA, and accessing detail test logs/statistics for further analysis.

In response to numerous 8-port Gigabit switches available in the market, two **NuStreams-P5Gs** can be cascaded in order to performing tests on 8-port switches.

With the ability to provide high reliable test results and the best cost/performance ratio, **NuStreams-P5G** is the best solutions available for router and switch tests.

1.2. Key Features of NuStreams-P5G

- Compact, lightweight, and portable 5-port Gigabit test device for testing network switches and routers
- Flexible WAN port connection for router tests:
 - Static IP
 - DHCP (Dynamic Host Configuration Protocol)
 - PPPoE (Point-to-Point Protocol over Ethernet)
- Supporting bi-direction LAN/WAN test packets with 253 IP addresses. Each IP has its own settings and transmitting/receiving counters, including independent statistics and calculations for latency, Serial Number, and VLAN Tags
- Both DUT and NuStreams-P5G's IP addresses can be any IP of 256 IP addresses from Class C
- Supports and can receive packet in PPP LCP, IPCP PAP formats
- Tests are performed automatically in a step-by-step manner, which makes NuStreams-P5G a more productive solution than traditional PC-based solutions
- Two NuStreams-5Gs can be cascaded to support 8-port Gigabit switch test
- Can be connected with external bar code reader
- NuStreams-P5G's hardware information, such as fan speed and system temperature, is available and can be checked
- LCD screen for displaying test results and related statistics

1.3. NuPAD Overview

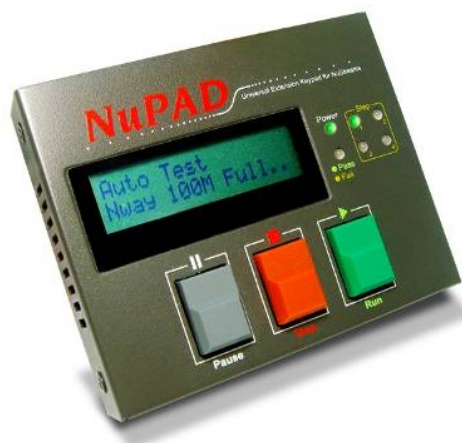
Built to be light and easy-to-handle, **NuStreams-P5G** is designed to meet the needs of production lines. However, considering the buttons on **NuStreams-P5G** might be too small to operate, an optional keypad **NuPAD** is available to solve this inconvenience.

NuPAD is an optional keypad with intuitive platforms and easy-to-use buttons, and can be connected to **NuStreams-P5G** in mass production line.

Although possessing no configuration functions, the lighter and smaller **NuPAD** provides 3 big, durable buttons (RUN 1~3) for users to operate the test procedure easily without touching configuration buttons on the top panel of **NuStreams-P5G**.

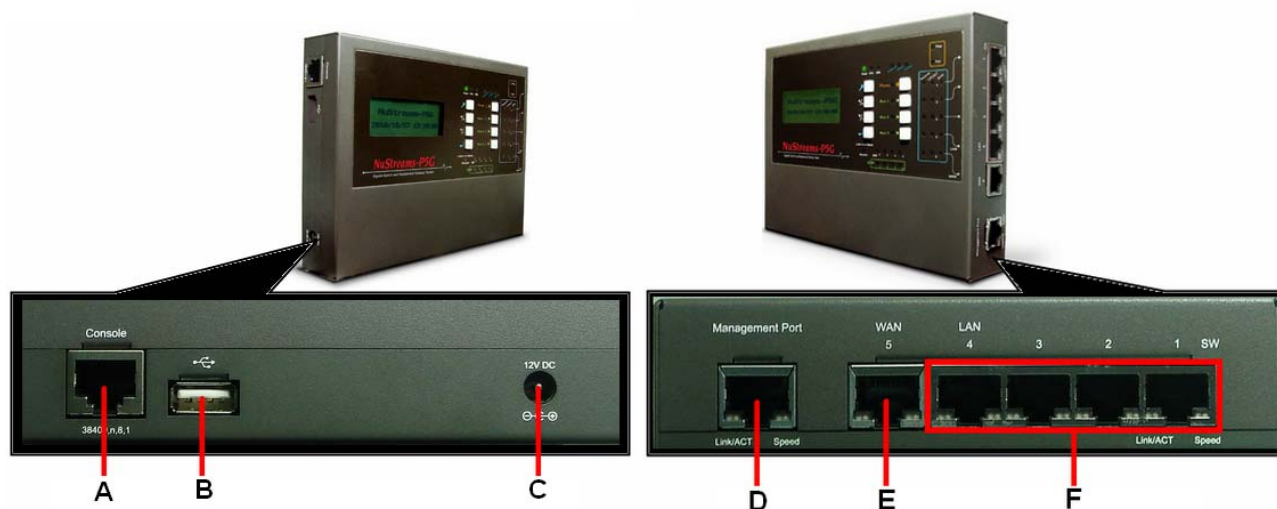
NuPAD Key Features

- Simple, easy to operate, performing tests fast
- Easy for maintenance. If NuPAD malfunctions, there's no need to fix/replace the NuStreams-P5G that's connected to it
- Intuitive Buttons for production crews to verify test results fast



2. NuStreams-P5G Function Overview

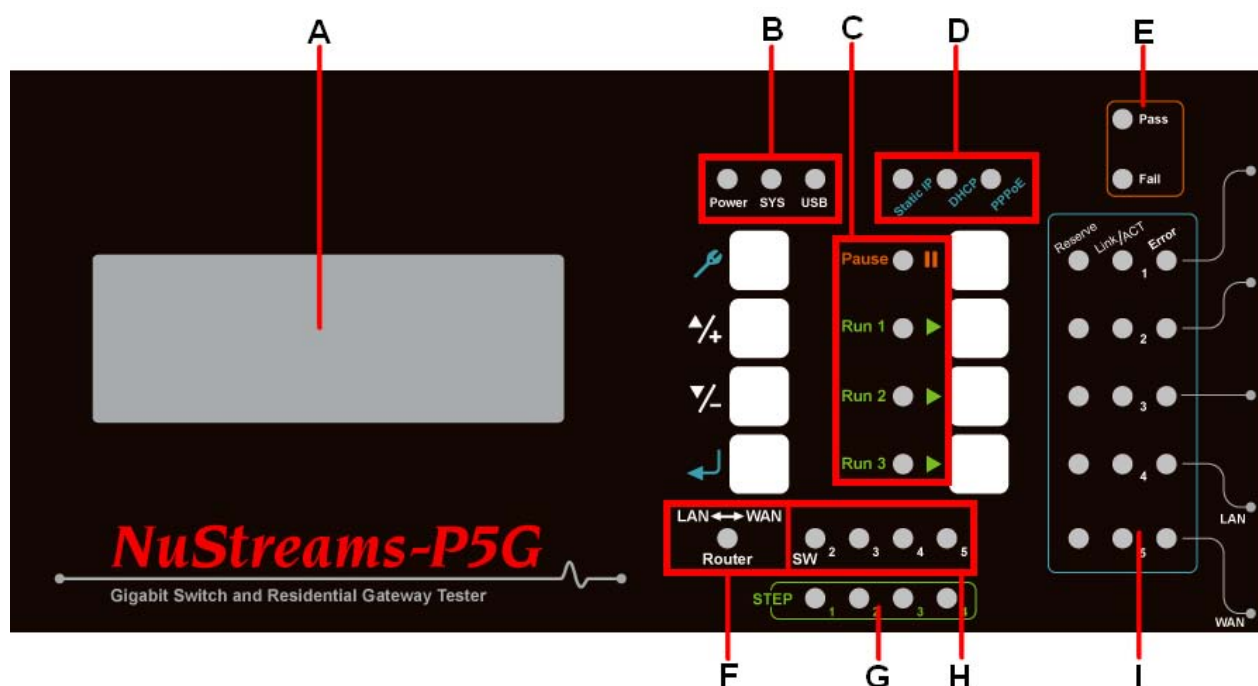
2.1. NuStreams-P5G Interface Ports



Ports Description		
A	Console Port	38400 bps RJ45 Console Port for connecting NuStreams-P5G and NuPAD
B	USB Port	Standard Type A USB Port
C	Power Jack	DC 12 V Power Jack
D	Management Port	100 Mbps RJ45 Management Port for connecting NuStreams-P5G and PC
E	WAN Port*	10/100/1000 Mbps Ethernet RJ45 WAN Port x 1
F	Switch Port 1~4	10/100/1000 Mbps Ethernet RJ45 Switch/LAN Ports x 4

*The WAN Port serves as Switch Port 5 when performing Network Switch Test.

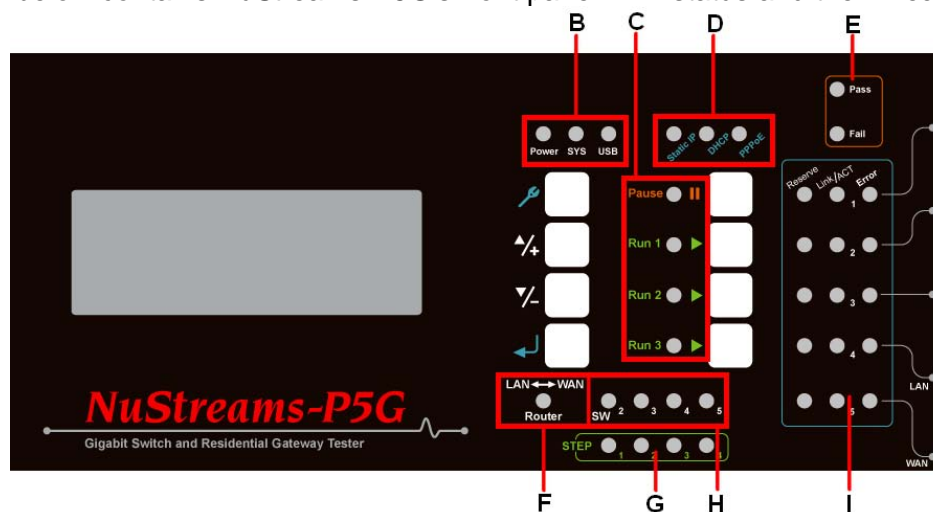
2.2. NuStreams-P5G Front Panel – LCD & LEDs



LCD & LEDs Descriptions			
LCD	A	LCD Display Screen	<ul style="list-style-type: none"> • Test Start Time • Test End Time • Packets Received • Error Packets • Packets Transmitted • Test Fail/Pass Throughput (packets/second) base on pre-defined allowable tolerance
	B	System Status	<ul style="list-style-type: none"> • Power • SYS • USB
LEDs	C	Test Status	<ul style="list-style-type: none"> • Pause: Current running test paused • Run 1/2/3: Test Task of Run 1/2/3 is running
	D	WAN Type	<ul style="list-style-type: none"> • Static IP • DHCP • PPPoE
	E	Test Status	<ul style="list-style-type: none"> • Pass: DUT Test Pass • Fail: DUT Test Fail
	F	Router (LAN ↔ WAN)	NuStreams-P5G is set to test Broadband Router .
	G	Test Step Status	Test starts from Step 1 to Step 4 1. Link Status Test 2. Auto Negotiation Connection Test 3. Test Starts 4. Test Finished
	H	Switch (SW 2~5)	NuStreams-P5G is set to test Switch . LED 2~5 indicates the number of ports used.
	I	LAN Ports (1~5) Status	<ul style="list-style-type: none"> • Reserve • Link/ACT • Error

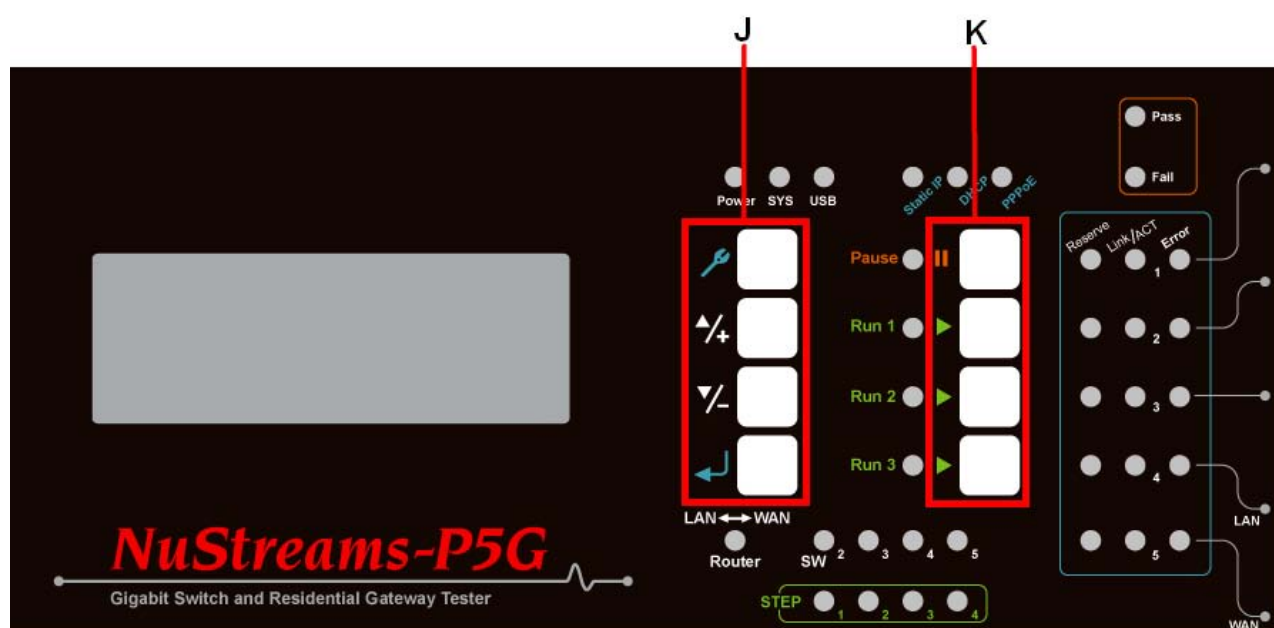
2.3. NuStreams-P5G Front Panel – LED Status









The table down below contains NuStreams-P5G's front panel LED status and their meanings.



LED			Status	Description
B	System Status	Power	Green ON	NuStreams-P5G is on
		SYS	Green OFF	NuStreams-P5G's CPU system down
			Green ON	NuStreams-P5G CPU system initializing
			Green Blinking	NuStreams-P5G's CPU system active and running
			Yellow ON	NuStreams-P5G is not starting properly
			Yellow Green Blinking	NuStreams-P5G is upgrading firmware
		USB	Green ON	NuStreams-P5G is connecting to PC via USB cable
C	Test Hotkey Status	Pause	Yellow ON	The current running test is paused
		Run 1	Green ON	All Tasks stored in Run 1 are running
		Run 2	Green ON	All Tasks stored in Run 2 are running
		Run 3	Green ON	All Tasks stored in Run 3 are running
D	WAN Type	Static IP	Green ON	DUT WAN connection is set to Static-IP
		DHCP	Green ON	DUT WAN connection is set to DHCP
		PPPoE	Green ON	DUT WAN connection is set to PPPoE
E	Test Status	Pass	Green ON	DUT test passed
		Fail	Red ON	DUT test failed
F	Router (LAN ↔ WAN)		Green ON	NuStreams-P5G is set to test Broadband Router
G	Test Step	Step 1	Green ON	Link Status Test
		Step 2	Green ON	Auto-Negotiation connection test
		Step 3	Green ON	Starting DUT tests
		Step 4	Green ON	Test complete, generating test results and report
H	Switch Port Number (2~5)		Green ON	NuStreams-P5G is set to test Switch . LED 2~5 indicates the number of ports used
I	LAN Port Status (1~5)	Reserve	Green ON	LAN Port is preserved for test
		Link/ACT	Green ON	LAN Port is connected to DUT
			Green Blinking	NuStreams-P5G is sending test packets via LAN Port
		Error	Yellow ON	Error occurred during test

2.4. NuStreams-P5G Front Panel – Buttons



Buttons Descriptions		
J	Configuration Buttons	 Enter the Main Menu(*) or return to the previous Menu
		 Move the select cursor up
		 Move the select cursor down
		 Execute the selected selection
K	Operation Buttons	 Pause the current running test
		 Start all Tasks set in Run 1. Up to 4 Tasks can be configured in Run 1 hotkey. Press this button to test ALL TASKS AT ONCE.
		 2 nd hotkey that works as Run 1
		 3 rd hotkey that works as Run 1

*Menu will be displayed on the LCD screen.

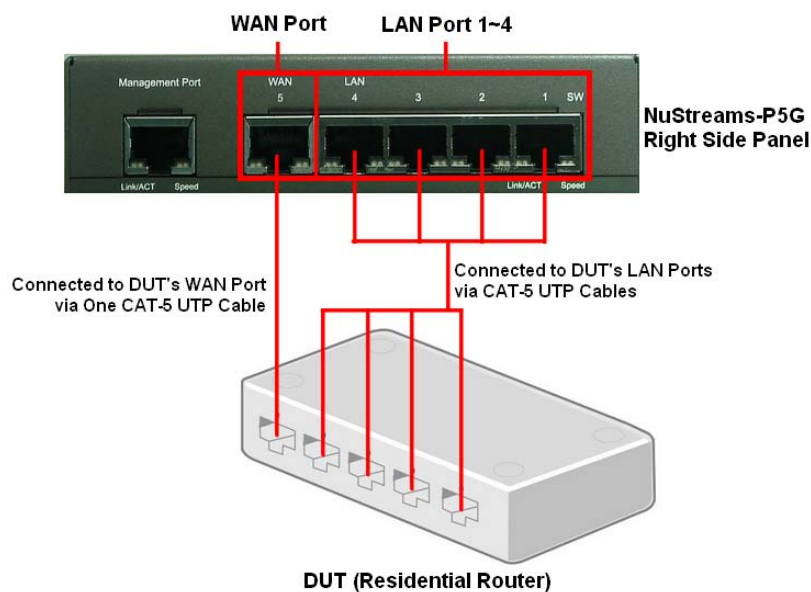
3. Hardware Installation of NuStreams-P5G

NuStreams-P5G can perform tests on **Residential Gateway (Broadband Router)**, **Switch**, or **Residential Gateway + Switch**. Each test has its own different test options and parameters.

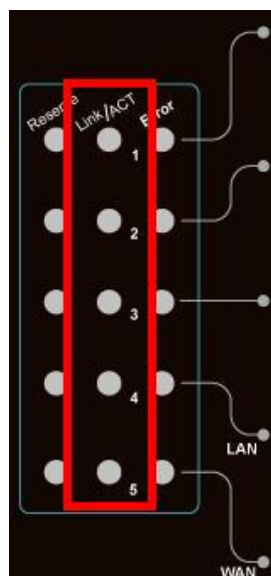
To perform tests on different DUTs mentioned above, you have to connect your NuStreams-P5G differently. Please see the installation structure mentioned in this chapter for more detail information.

3.1. Installation for Residential Gateway (Broadband Router) Test

While performing tests on **Residential Gateway (Broadband Router)**, both **WAN** and **LAN** ports of the DUT must be connected to NuStreams-P5G with CAT-5 UTP cables as shown in the figure down below:

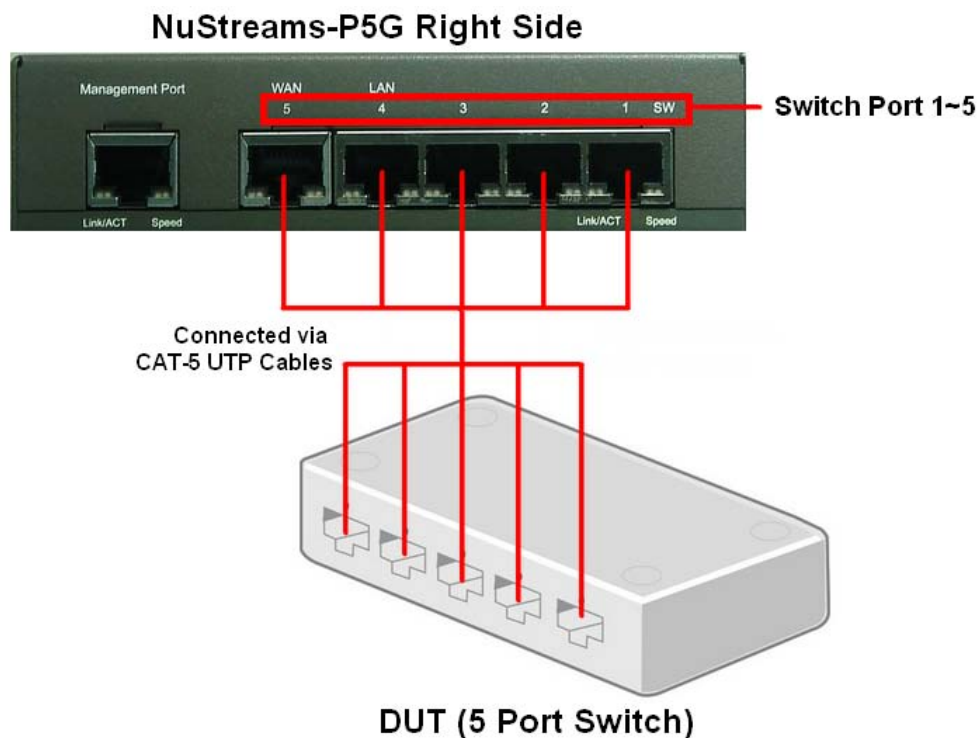


If NuStreams-P5G's WAN/LAN Ports and DUT's ports are connected via CAT-5 UTP cables correctly, the **Link/ACT LEDs** located on NuStreams-P5G's **LAN Port Status LED** will be **ON** accordingly.

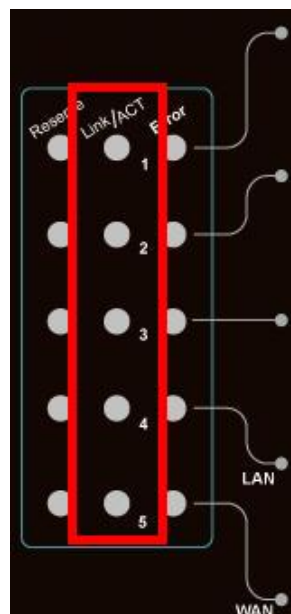


3.2. Installation for Switch Test

While performing tests on Switch, DUT **LAN** ports must be connected to NuStreams-P5G with CAT-5 UTP cables as shown in the figure down below:

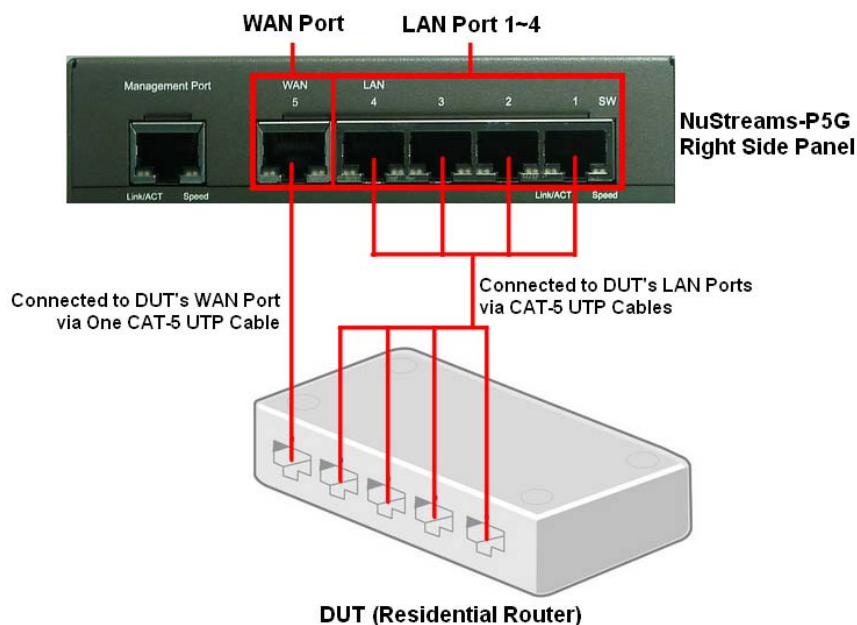


If both NuStreams-P5G's Switch Port 1~5 and DUT's ports are connected via CAT-5 UTP cables correctly, the **Link/ACT LEDs** located on NuStreams-P5G's **LAN Port Status LED** will be **ON** accordingly.



3.1.3. Installation for Residential Gateway (Broadband Router) + Switch Test

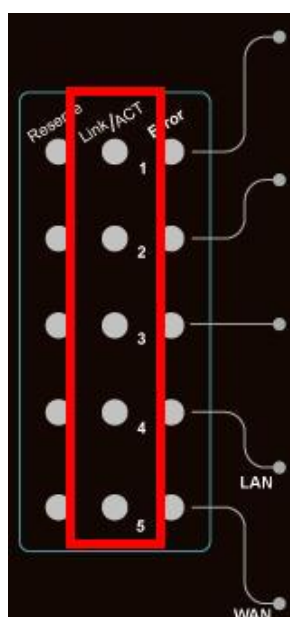
While performing tests on **Residential Gateway (Residential Router) + Switch**, both **WAN** and **LAN** ports of the DUT must be connected to NuStreams-P5G with CAT-5 UTP cables as the installation structure when performing tests on **Residential Gateway (Residential Router)** as shown in the figure down below:



Test options for **Residential Gateway (Residential Router) + Switch** and **Residential Gateway (Residential Router)** are very similar, with minor differences listed in the table down below:

DUT Type	Residential Gateway + Switch	Residential Gateway
LAN Port Select	✓	✗
Flow Control	✓	✗

If NuStreams-P5G's WAN/LAN Ports and DUT's ports are connected via CAT-5 UTP cables correctly, the **Link/ACT LEDs** located on NuStreams-P5G's **LAN Port Status LED** will be **ON** accordingly.





WAN LEDs



LAN LEDs

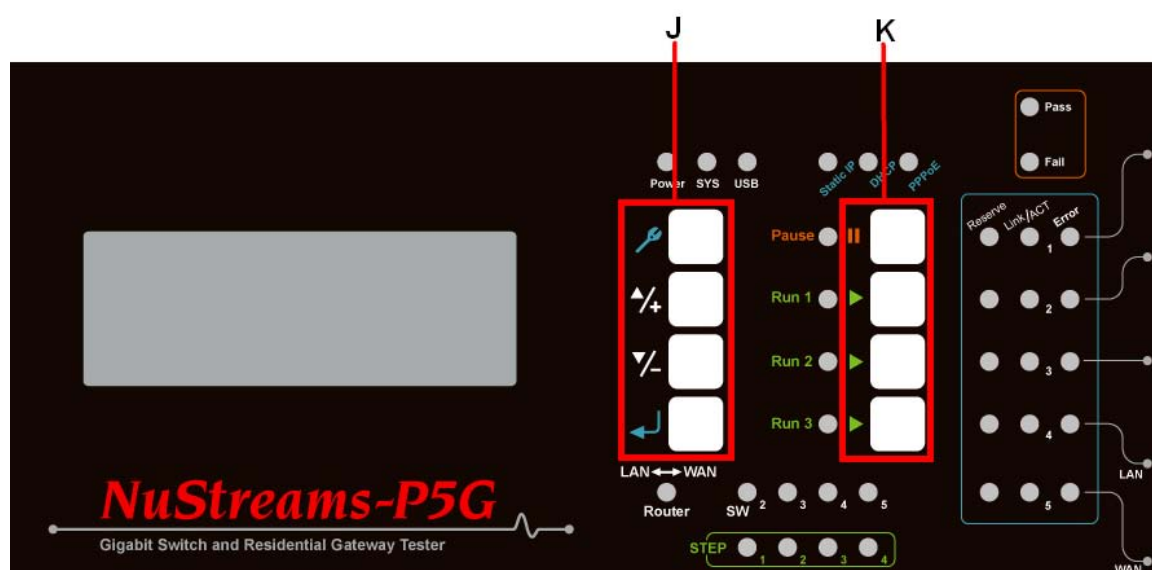
4. Making Settings with Front Panel Buttons & LCD









All parameters for DUT tests can be configured via control buttons located on the front panel. Also, configuring, testing, and system information are displayed and can be viewed on the LCD screen as well.

Before performing any tests, NuStreams-P5G should be connected to DUT properly according to DUT's type. Please refer to **3. Hardware Installation of NuStreams-P5G** for more detail information.

4.1. NuStreams-P5G Buttons Overview

With NuStreams-P5G's control buttons located on its front panel, all test parameters and system configurations can be set via these buttons.

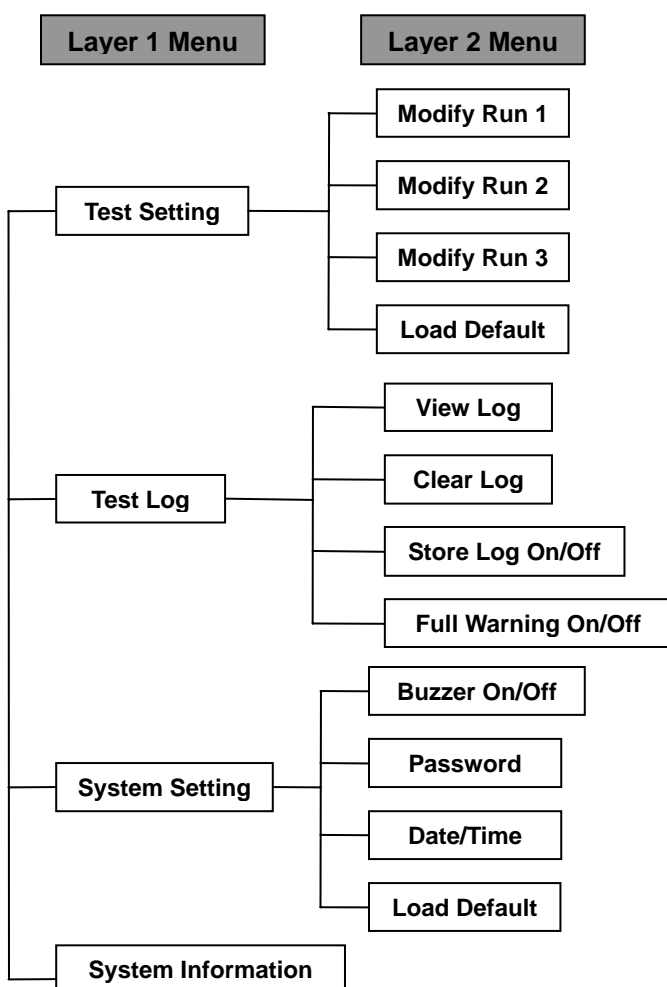


Buttons Descriptions		
J	Configuration Buttons	 Enter the Main Menu(*) or return to the previous Menu
		 Move the select cursor up
		 Move the select cursor down
		 Execute the selected selection
K	Operation Buttons	 Pause the current running test
		 Start all Tasks set in Run 1. Up to 4 Tasks can be configured in Run 1 hotkey. Press this button to test ALL TASKS AT ONCE.
		 2 nd hotkey that works as Run 1
		 3 rd hotkey that works as Run 1

*Menu and setting options will be displayed on the LCD screen.

4.2. NuStreams-P5G LCD Overview

All configuration options and system information can be viewed via NuStreams-P5G's LCD screen. All options and their functions contained in the menu are listed down below:








Layer 1 Menu	Layer 2 Menu	Description
Test Setting	Modify Run 1~3	You can configure test parameters for Run 1~3 under this menu. Each Run can hold up to 4 Tasks
	Load Default	Restore all parameters stored in Run 1~3 to default value
Test Log	View Log	View test logs generated after the tests are complete
	Clear Log	Delete all logs stored in NuStreams-P5G
	Store Log	Test reports will be stored automatically if this function is enable
	Full Warning	System will issue warnings when log storage memory is running out
System Setting	Buzzer	If enabled, system will buzz whenever a button is pressed
	Password	You can set new password for the system under this menu
	Date/Time	System date and time can be configured under this menu
	Load Default	Restore all system settings to default value
System Information	N/A	Display detailed system information

4.3. NuStreams-P5G Front Panel Functions – Basic Controls

The table down below shows NuStreams-P5G's basic controls.

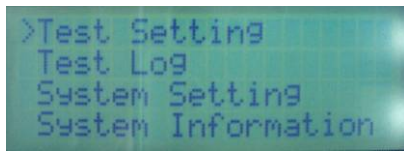
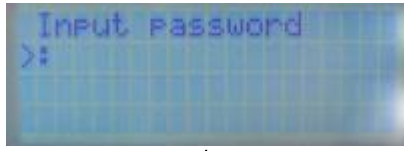
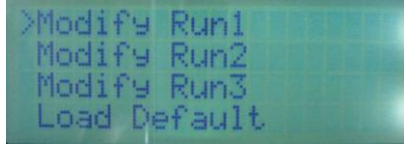
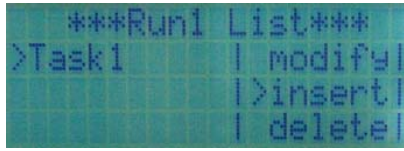
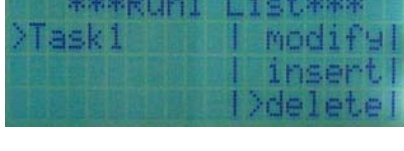
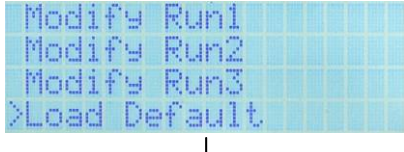
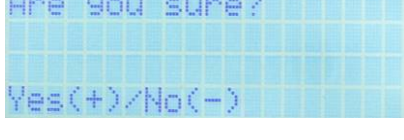
Basic Setting Controls





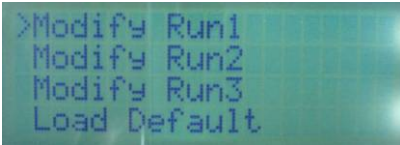






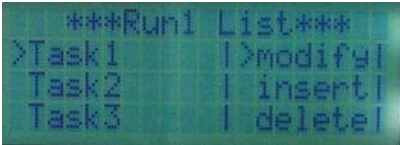

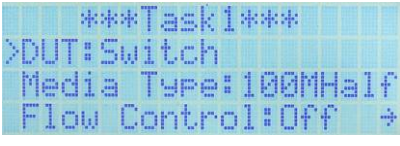
Function	Control Button Action	LCD Display
Entering Main Menu	Press  button to enter NuStreams-P5G's main menu.	<pre> NuStreams-P5G 2000/01/01 01:22:51 ↓ >Test Setting Test Log System Setting System Information </pre>
Back to Previous Menu	Press  button to go back to the previous menu.	<pre> >View Log Clear Log Store Log:On Full Warning:On ↓ Test Setting >Test Log System Setting System Information </pre>
Moving Selection Cursor	Press  to move the selection cursor up, or press  to move the selection cursor down.	<pre> >Test Setting Test Log System Setting System Information ↓ Test Setting >Test Log System Setting System Information </pre>
Entering Selected Option	Press  button to enter the menu option you chose.	<pre> Test Setting >Test Log System Setting System Information ↓ >View Log Clear Log Store Log:On Full Warning:On </pre>

Basic Test Performing Controls











Function	Control Button Action	LCD Display
Start All Tasks Set in Run 1~3	Press ► Run1 button to start all Tasks set in Run 1 , press ► Run2 button to start all Tasks set in Run 2 , and press ► Run3 button to start all Tasks set in Run 3 . All Tasks set in the Run will be performed at the same time after pressing ► Run1 , ► Run2 , or ► Run3 button.	
Pause	Press Pause button to pause the current running test. Press Pause button to resume.	
Stop All Running Tests & Exit	Press button to stop all running tests and exit.	

4.4. NuStreams-P5G Front Panel Functions – Test Setting







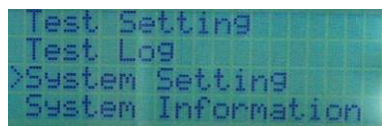
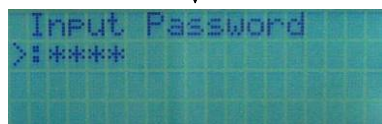




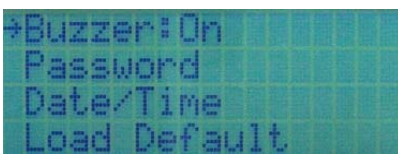



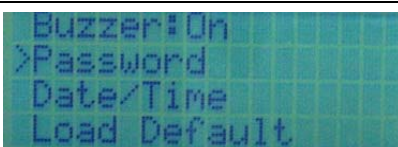
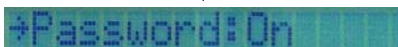










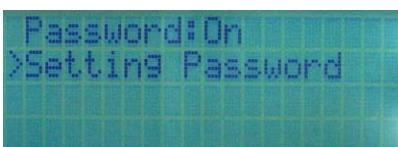
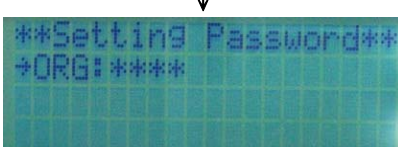
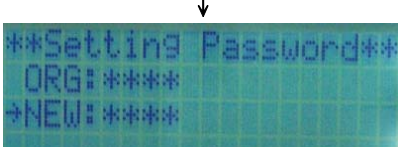




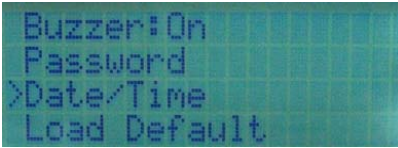

Function	Control Button Action	LCD Display
Entering Test Setting Menu	Move the cursor > to “ Test Setting ”, and press button. NuStream-P5G will prompt you to input the system password. The default password is . Press button after inputting the password to enter the test setting menu.	 ↓  ↓ 
Insert/Delete Tasks	<p>You can also insert or delete Tasks.</p> <p>To add a new task to the current Run, choose “insert” from “Run List” menu, and press button. A new task with default parameters will be added to that Run.</p> <p>To remove an existing task of the current Run, choose “delete” from “Run List” menu, and press button. The existing task you chose will be deleted.</p> <p>Each “Run” can contain up to 4 Tasks, while each Task is an independent test that can contain different test parameters.</p>	 
Load Default	<p>You can reset all settings stored in all 3 Runs and load the default test configurations here.</p> <p>To load default test configurations, choose “Load Default” from “Run List” menu, and press button.</p> <p>NuStreams-P5G will confirm if you really want to reset all test settings to default values. Press button to confirm, or press button to cancel.</p>	 ↓ 




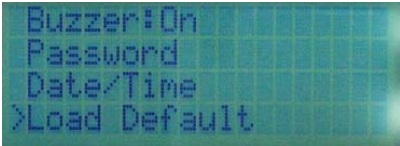
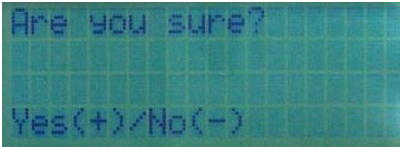
Function	Control Button Action	LCD Display
Modifying Test Parameters	Press  or  buttons to choose which “Run” you would like to modify. Press  button to start configuring the selected “Run”. Choose “Modify” and press  to start configuring parameters for the Task you’ve chosen.	
	Press  or  buttons to choose which parameter you would like to configure, and press  button to start configuring. Change parameter values with  or  buttons, and press  button to apply the changes.	
	Press  button again to save the settings you’ve made to the Task and go back to Run List menu.	
	NuStreams-P5G supports 3 test modes: Router , Switch , and Router + Switch . For detail test setting options, please refer to “5.3.5. Configuring Tasks with NuSet-MiniPG-Config”.	

4.5. NuStreams-P5G Front Panel Functions – Test Log





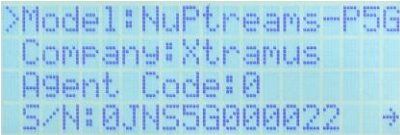
Function	Control Button Action	LCD Display
Entering Test Log Menu	Move the cursor > to “ Test Log ”, and press  button.	<pre> Test Setting >Test Log System Setting System Information </pre>
View Log	Choose “ View Log ” from “ Test Log ” menu list, and press  button.	<pre> >View Log Clear Log Store Log:On Full Warning:On </pre>
Delete Log	Choose “ Clear Log ” from “ Test Log ” menu list, and press  button. System will ask if you really want to delete all logs stored in NuStreams-P5G. Press  to confirm, or  to cancel.	<pre> View Log >Clear Log Store Log:On Full Warning:On </pre> <p style="text-align: center;">↓</p> <pre> Are you sure to delete all the logs? Yes(+)/No(-) </pre>
Log Auto-Save	Choose “ Store Log ” from “ Test Log ” menu list, and press  button. The select cursor “>” will be changed to “→” icon. Using  or  buttons to set Log Auto-Save function On or Off, and press  button to apply the changes. System will save all test logs automatically if this function is ON.	<pre> View Log Clear Log >Store Log:On Full Warning:On </pre> <p style="text-align: center;">↓</p> <pre> →Store Log:On </pre>
Warning when Memory Full	Choose “ Full Warning ” from “ Test Log ” menu list, and press  button. The select cursor “>” will be changed to “→” icon. Using  or  buttons to set Memory Full Warning function On or Off, and press  button to apply the changes. System will alert you when its log storing memory is about to full if this function is ON.	<pre> View Log Clear Log Store Log:On >Full Warning:On </pre> <p style="text-align: center;">↓</p> <pre> →Full Warning:On </pre>

4.6. NuStreams-P5G Front Panel Functions – System Setting

Function	Control Button Action	LCD Display
Entering System Setting Menu	Move the cursor > to “ System Setting ”, and press  button. NuStream-P5G will prompt you to input the system password. The default password is     . Press  button after inputting the password to enter the test setting menu.	 ↓ 
Buzzer	Choose “ Buzzer ” from “ System Setting ” menu list, and press  button. The select cursor “>” will be changed to “→” icon. Pressing  or  buttons to set Buzzer function On or Off, and press  button to apply the changes. System will make a buzz sound whenever you press a button if this function is ON.	
Password On/Off	Choose “ Password ” from “ System Setting ” menu list, and press  button. You can set the Password function On/Off by selecting Password: On/Off . Using  or  buttons to set Password function On or Off.	 ↓ 
Setting New Password	Choose “ Password ” from “ System Setting ” menu list, and press  button. You can change system password (Default Password:    ) under Setting Password menu. Password is a set of 4-button combination with  ,  ,  Run1,  Run2, and  Run3 buttons. Please input your old password under “ ORG: ”, and input your new password under “ New: ”.	 ↓  ↓ 
System Date/Time	Choose “ Date/Time ” from “ System Setting ” menu list, and press  button. You can adjust system date and time by pressing  or  buttons, and  button to apply the changes you’ve made.	 ↓ 

Function	Control Button Action	LCD Display
Load System Default Value	<p>Choose “Load Default” from “System Setting” menu list, and press  button.</p> <p>System will ask if you really want to set all system settings to default. Press  to confirm, or  to cancel.</p>	 

4.7. NuStreams-P5G Front Panel Functions – System Information

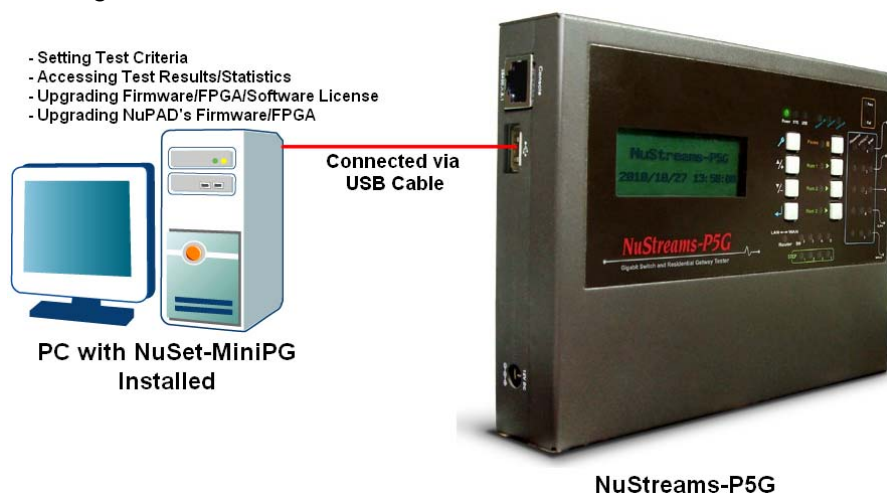
Function	Control Button Action	LCD Display
Entering System Information	Move the cursor > to “ System Information ”, and press  button.	
View System Information	You can browser NuStreams-P5G’s system information by pressing  or  buttons.	

5. NuSet-MiniPG



NuSet-MiniPG is a GUI (Graphic User Interface) configuration software that runs under Microsoft Windows environment.

By connecting NuStreams-P5G with PC to its USB Port with a USB cable, users can configure test parameters, download testing logs, and upgrade firmware/license. The figure down below is an example for connecting NuStreams-P5G to PC via an USB cable.



All test parameters can be configured with **NuSet-MiniPG**, including all the configurations that can be set by buttons located on NuStreams-P5G's panels.

Please note that NuSet-MiniPG and NuStreams-P5G's hardware driver must be installed on PC first. After installing NuSet-MiniPG, NuStreams-P5G's driver will be installed automatically.

NuSet-MiniPG contains five different utilities with different functions as listed in the table down below:

Utility	Description
NuSet-MiniPG-Config	Utility designed for setting test criteria and accessing test results/statistics.
NuSet-MiniPG-ST	Utility designed for testing network switch
NuSet-MiniPG-RT	Utility designed for testing residential gateway (router)
NuSet-MiniPG-RST	Utility designed for testing network switch and residential gateway (router)
NuSet-MiniPG-UG	Utility designed for upgrading NuStreams-P5G and NuPAD's firmware, FPGA and hardware license.

Also, please note that your PC, NuStreams-P5G's firmware and FPGA should meet the system requirements listed down below before installing NuSet-MiniPG.

OS	Windows 2000/Windows XP	Windows Vista/Windows 7
RAM	512MB RAM	1GB RAM
CPU	Pentium 1.3GHz or Higher	
HDD	10 GB Available Space	
Firmware	Version 0.9b064 or higher	
FPGA	Version 0.1b026 or higher	

* Note: Large amount of data will be generated while running NuSet-MiniPG. It is recommended to preserve enough available Hard-Disk space to store these data.

This user's manual will be focusing on NuSet-MiniPG-Config, NuSet-MiniPG-UG, and NuSet-MiniPG-ST only. As of September 14th, 2011, NuSet-MiniPG-RT and NuSet-MiniPG-RST are still not available.

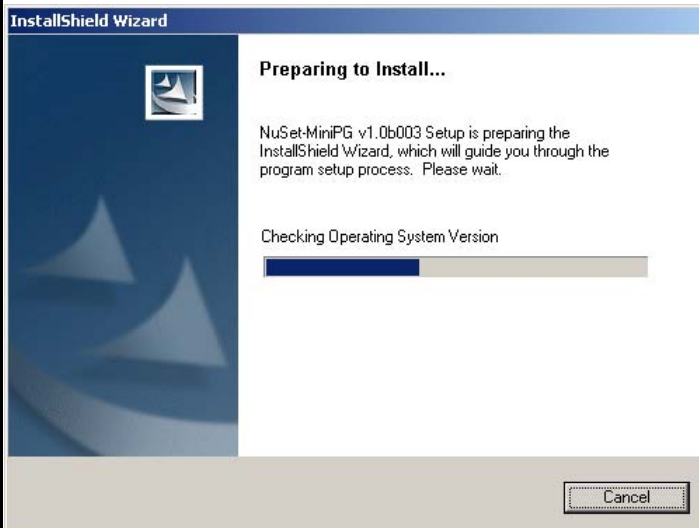
5.1. Installing/Uninstalling NuSet-MiniPG

Please follow the steps down below to install NuSet-MiniPG.

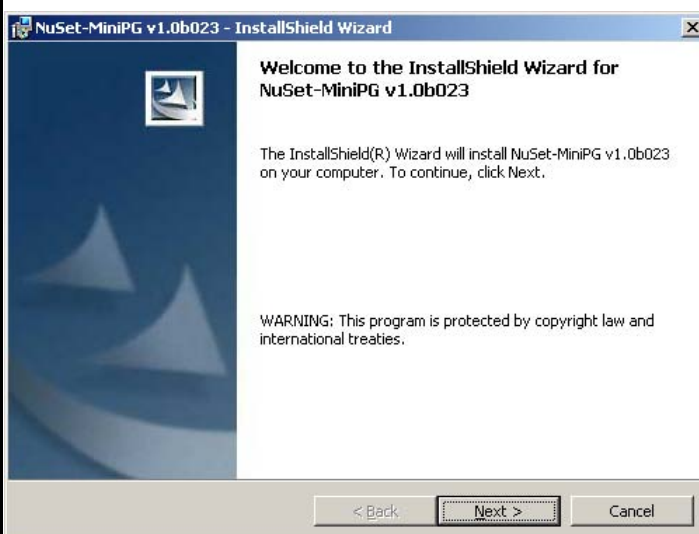
Installing NuSet-MiniPG



1. Double-click NuSet-MiniPG installation program and start the installation process*.



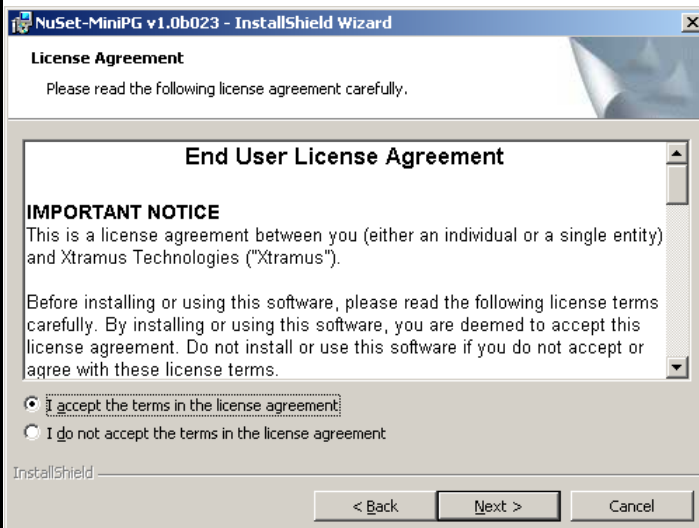
2. InstallShield Wizard is starting to install NuSet-MiniPG. If you would like to cancel installation, click "**Cancel**".



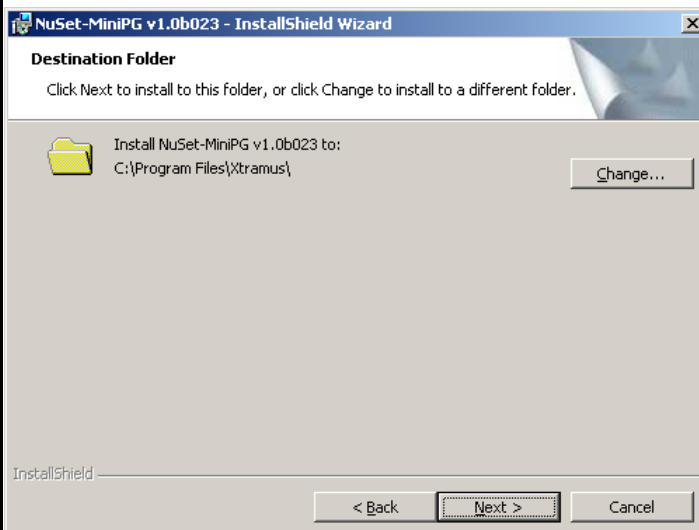
3. Click "**Next**" to continue installation.

***Note:** Due to different Operating Systems or system settings, warning messages might pop up when installing NuSet-MiniPG or driver for your device. When this occurs, please choose the options on these pop-up warning messages that allow you to continue installing NuSet-MiniPG or device driver.

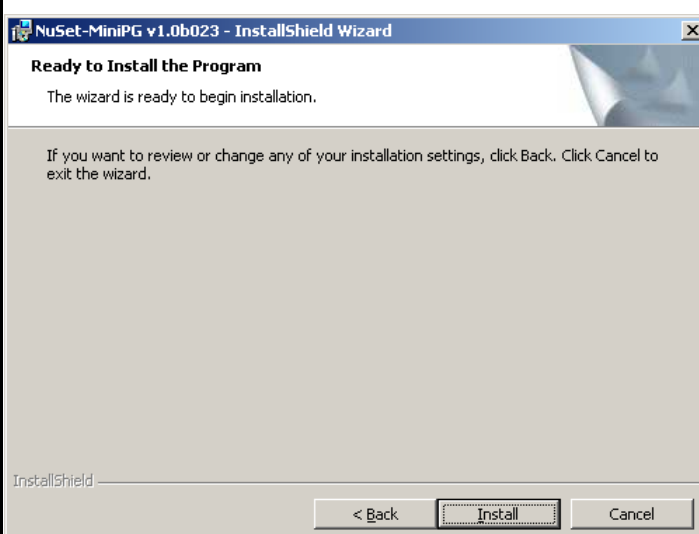
Installing NuSet-MiniPG



4. Click "**I accept the terms in the license agreement**", and click "**Next**" to continue.

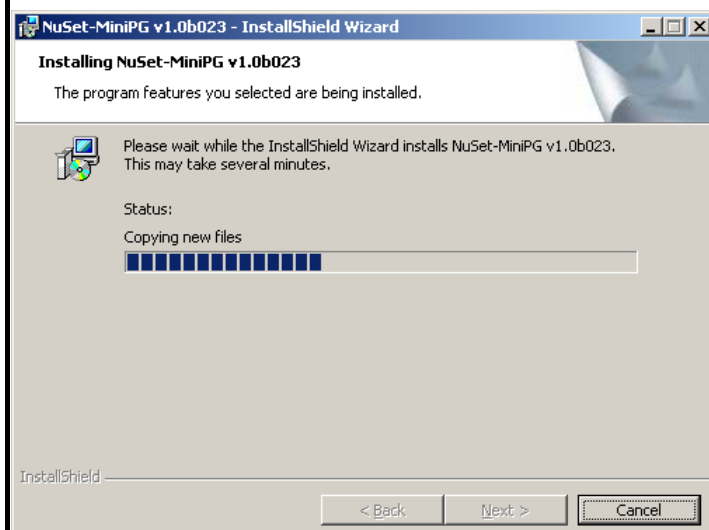


5. Click the **Change...** button to install the program to another folder, or click **Next** button to install the program into the default destination folder, and then continue next step. Click **Back** button to go back to the previous step to modify.

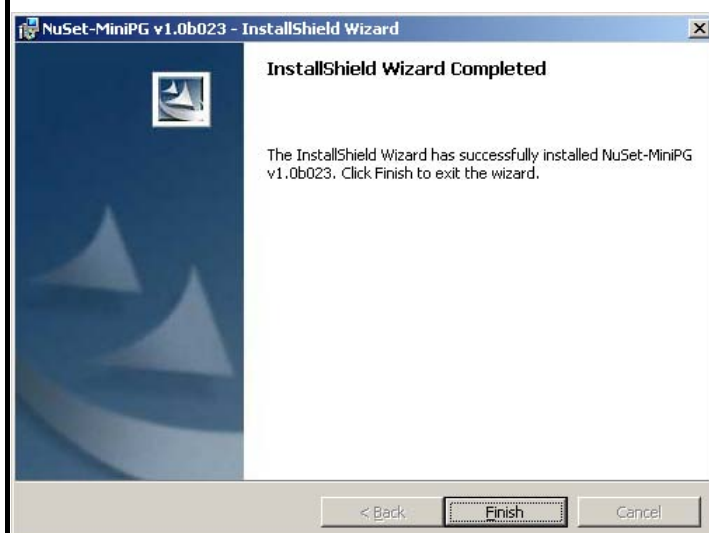


6. NuSet-MiniPG InstallShield Wizard will start installing momentarily. Click **Install** button to start installation.

Installing NuSet-MiniPG



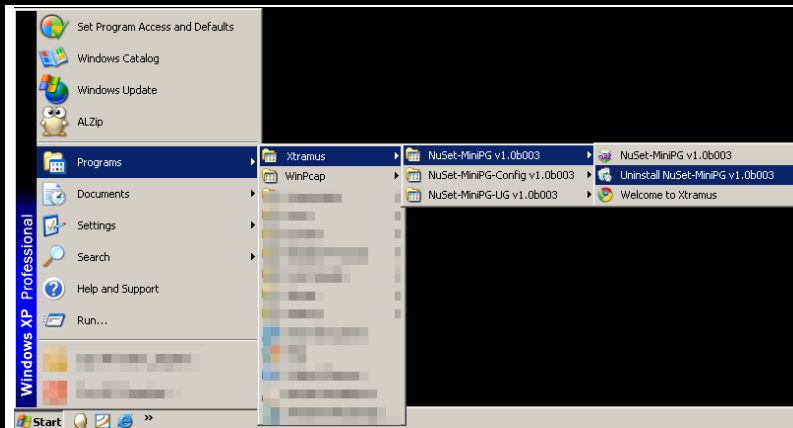
7. InstallShield Wizard is installing NuSet-MiniPG.



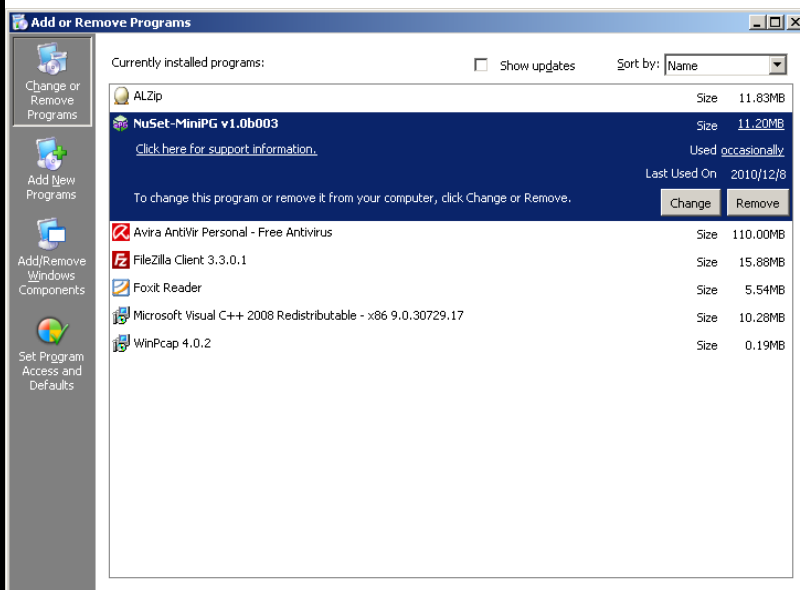
8. NuSet-MiniPG installation completes. Click **Finish** button to exit.

To uninstall NuSet-MiniPG, you can:

Uninstalling NuSet-MiniPG



- Click **Start** → **Programs** → **Xtramus** → **NuSet-MiniPG** → **Uninstall NuSet-MiniPG**.



- Go to the **Control Panel**, choose **NuSet-MiniPG** from installed program list, and click “**Remove**” to uninstall.

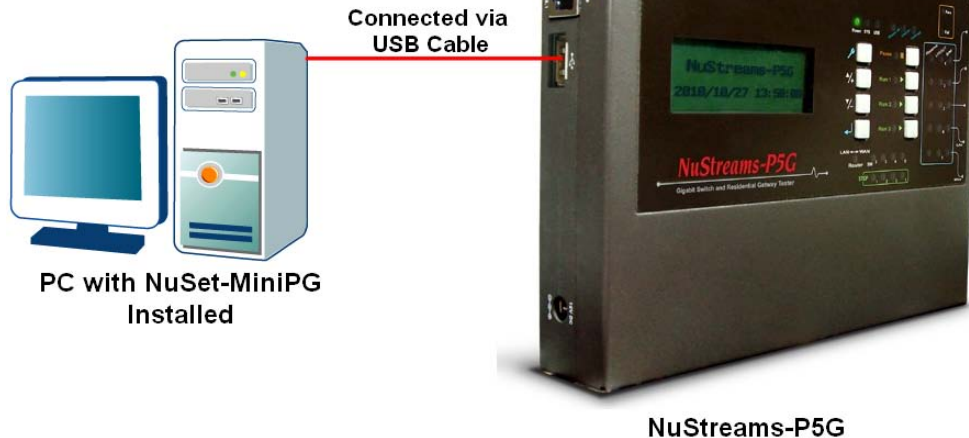
Please note that all of NuSet-MiniPG's components will be uninstalled.

5.2. NuSet-MiniPG Overview

5.2.1. Starting NuSet-MiniPG

Before starting NuSet-MiniPG, please be sure that your NuStreamsP5G is properly connected to your PC. The figure down below is an example for connecting NuStreams-P5G to PC via an USB cable.

- Setting Test Criteria
- Accessing Test Results/Statistics
- Upgrading Firmware/FPGA

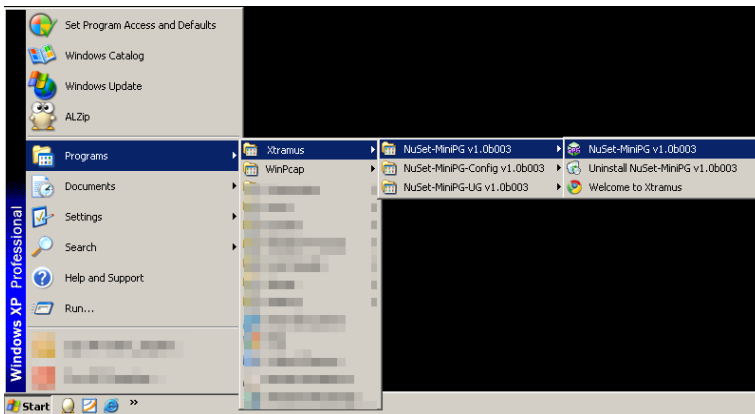


You can start NuSet-MiniPG by:

Starting NuSet-MiniPG



- Double-click NuSet-MiniPG icon located on your PC's desktop

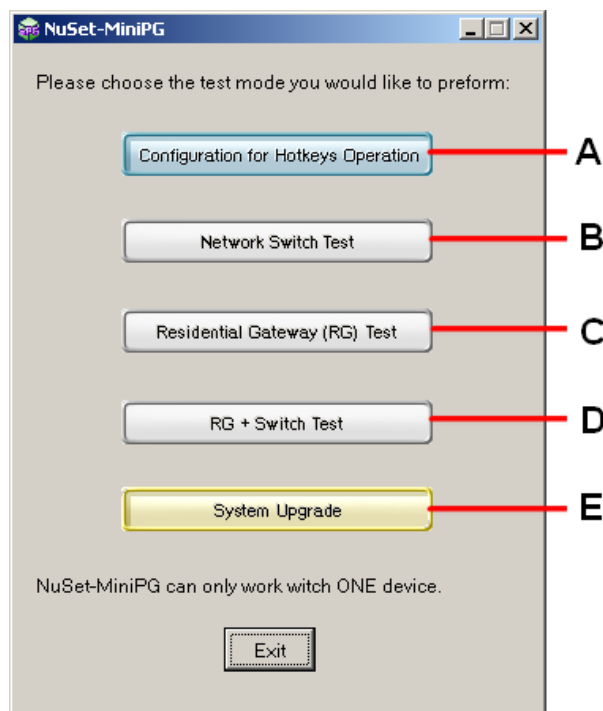


- Click **Start** → **Programs** → **Xtramus** → **NuSet-MiniPG** → **NuSet-MiniPG**.

If your PC is not connected with NuStreams-P5G, you can still run both NuSet-MiniPG-Config and NuSet-Mini-UG under **Demo Mode**. Almost all functions are available under **Demo Mode**. However, please note that **Demo Mode is for system demo purposes only**, and does not serve any testing purposes at all.

5.2.2. NuSet-MiniPG Overview

After starting NuSet-MiniPG as mentioned in “5.2.1. Starting NuSet-MiniPG”, a **NuSet-MiniPG Option Menu** will pop up as shown in the figure down below:

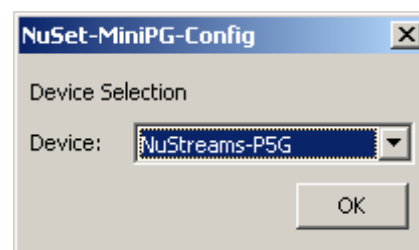


Utility		Description
A	NuSet-MiniPG-Config	Utility designed for setting test criteria and accessing test results/statistics.
B	NuSet-MiniPG-ST	Utility designed for testing network switch
C	NuSet-MiniPG-RT	Utility designed for testing residential gateway (router)
D	NuSet-MiniPG-RST	Utility designed for testing network switch and residential gateway (router)
E	NuSet-MiniPG-UG	Utility designed for upgrading NuStreams-P5G and NuPAD's firmware, FPGA and hardware license.
	Exit	Close NuSet-MiniPG.

*Only ONE utility can run at the same time, and NuSet-MiniPG can only work with ONE device.

You have to install different utilities in order to access different test modes listed on the **NuSet-MiniPG Option Menu**. Test modes without the proper utilities installed will be displayed as gray in color and cannot be accessed from the **NuSet-MiniPG Option Menu**.

When clicking an accessible option from NuSet-MiniPG Option Menu, a **Device Selection** window will pop up, and prompt you to choose the device that will be used for testing. Please choose Nustreams-P5G from the scroll-down menu, and click **OK**.



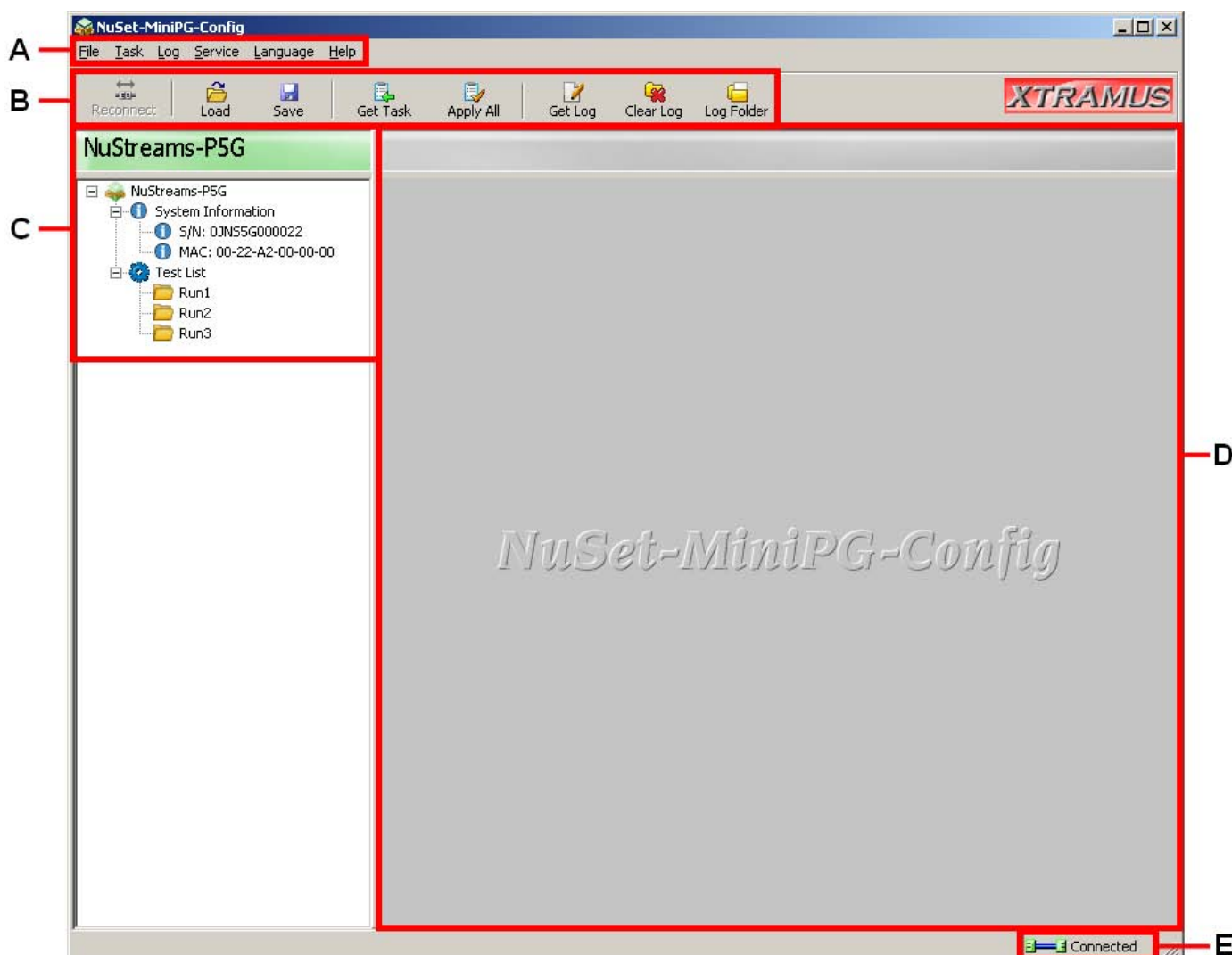
Note: Please note that this user's manual will be focusing on NuSet-MiniPG-Config, NuSet-MiniPG-UG, and NuSet-MiniPG-ST only. As of September 14th, 2011, NuSet-MiniPG-RT and NuSet-MiniPG-RST are still not available.

5.3. NuSet-MiniPG-Config Functions

5.3.1. NuSet-MiniPG-Config Functions Overview

Configuration for Hotkeys Operation

If you choose **Configuration for Hotkeys Operation** from **NuSet-MiniPG Option Menu**, NuSet-MiniPG-Config's main window will pop up as shown below:



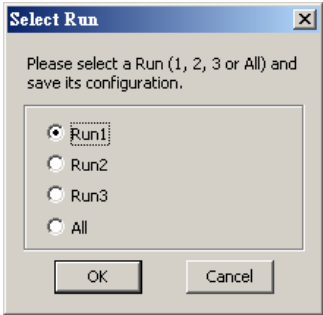
Function Descriptions		
A	Menu Bar	The Menu Bar allows you to access configuration files from your PC and NuStreams-P5G, manage test logs, and perform system maintenance.
B	Quick Launch Buttons	With a simple click of these Quick Launch Buttons, you can access configuration files from your PC/NuStreams-P5G and managing test logs.
C	Info/Run Select List	This section contains a selectable list of NuStreams-P5G's detailed system information and Test List.
D	Main Display Window	This section displays detailed system information or all test parameters you can configure for each Task in Run 1~3.
E	USB Connection Status	This icon shows the connection status between your PC and NuStreams-P5G.

5.3.2. NuSet-MiniPG-Config Function – Menu Bar

File Task Log Service Languages Help

The **Menu Bar** includes configuration options such as **File**, **Task**, **Log**, **Service**, **Language**, and **Help**.

5.3.2.1. Menu Bar – File

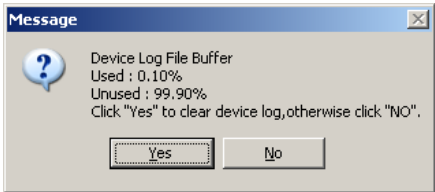
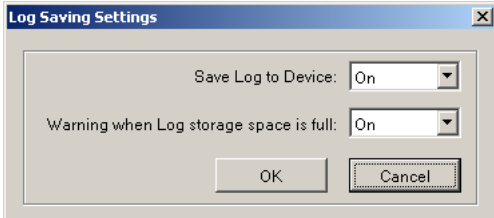
File	
Load Default Config. Profile	The system will load the default test settings for Run 1~3. All test parameters in Run 1~3 will be set to default value. However, loading test settings won't be saved to NuStreams-P5G until applied.
Load Config. Profile From	<p>You can choose to load test settings either from Existing Files, or Pre-defined Files for Network Products.</p> <ul style="list-style-type: none"> • Existing Files: NuSet-MiniPG-Config will load test settings which you saved previously. • Pre-defined Files for Network Products: NuSet-MiniPG-Config will load test setting samples for network products pre-defined by Xtramus. All these test settings are stored in “Default Config Profile” folder located under NuSet-MiniPG-Config's installation folder. These test settings are named by the format of A_B_C_D_E_F, which means: <ul style="list-style-type: none"> ➢ A: Name of the testing device. In here ➢ B: Type of the DUT (Chip or Model) ➢ C: Name of the Manufacturer ➢ D: DUT Model Name ➢ E: DUT Version ➢ F: Testing WAN type. <p>Please note that loading test settings won't be saved to NuStreams-P5G until applied.</p>
Save Configuration	<p>You can save all parameter changes through Run 1~3 you made to your PC. If you haven't saved the changes previously, a Select Run window will pop up and ask you which test setting (Run) you would like to save.</p> 
Save As...	The “ Save As... ” function is similar to the “ Save Configuration ”. The only difference is that you can save test settings (Run) with different file names.
Exit	Exit NuSet-MiniPG-Config.

5.3.2.2. Menu Bar – Task

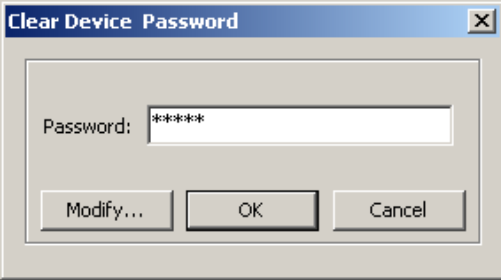
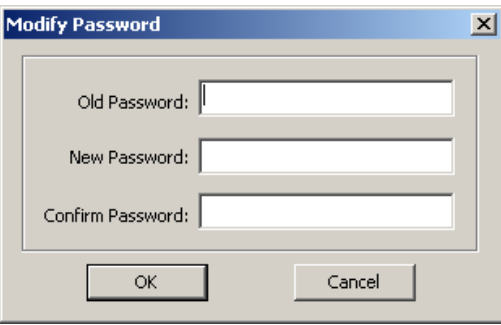
Task	
Get Task	This function allows NuSet-MiniPG-Config to access all test settings (Run) from NuStreams-P5G and show those settings in both Info/Run Select List and Main Display Window .
Add Task	As mentioned in sections above, each Run can hold up to 4 different Tasks. You can add new Tasks to each Run with this function. To add a new Task, click the Run you would like to add the new Task to from Info/Run Select List , then click Task → Add Task on the Menu Bar .
Delete Task	You can delete an existing Task with this function. To delete an existing task, click the Task you would like to delete from Info/Run Select List , and click Task → Delete Task on the Menu Bar .
Apply All	Apply and save all changes you've made to NuStreams-P5G.

*Please note that the connection (of USB cable) between PC and NuStreams- P5G must be connected at all time while getting/setting tasks.

5.3.2.3. Menu Bar – Log

Log	
Get Device Log	<p>Accessing test logs from NuStreams-P5G's memory and save these logs to a specific folder on your PC. After retrieving test logs from NuStreams-P5G, the log folder will pop up. Also, a message window contains detail information about system log file memory buffer will pop up. Click YES if you want to clear all stored logs or click NO to cancel.</p> 
Clear Device Log	Clear all test logs stored in NuStreams-P5G's memory.
Log Saving Settings	<p>Log saving settings can be configured here:</p> <ul style="list-style-type: none"> • Save Log to Device: If this function is ON, all test logs will be saved in its log file memory buffer. • Warning when Log storage space is full: System will issue a warning if the log file memory buffer is about to full. 
Show Log Folder	Show the file folder where test logs are stored.
Set Log Folder	Change where you would like to save test logs retrieved from NuStreams-P5G. You can create new folders for log-saving as well.

5.3.2.4. Menu Bar – Service

Service	
System Setting	<p>If NuStreams- P5G's password has been changed, you could reset it to default (⚡⚡⚡⚡) by "Clear Device Password" function.</p>
	<p>A "Clear Device Password" window will pop up when you choose this function from Menu Bar. Input "admin" in the "Password" column and click "OK". The password will be cleared and set to the default ⚡⚡⚡⚡.</p>  <p>The dialog box titled "Clear Device Password" has a "Password:" label followed by a text input field containing "*****". Below the input field are three buttons: "Modify...", "OK", and "Cancel".</p>
System Setting	<p>You can change NuSet-MiniPG's password (default: admin) by click the "Modify" button on "Clear Device Password" window. A "Modify Password" window will pop up. Input NuSet-MiniPG's old password under "Old Password" column, and type in the new password under both "New Password" and "Confirm Password" columns.</p>  <p>The dialog box titled "Modify Password" has three text input fields: "Old Password:", "New Password:", and "Confirm Password:". Below the input fields are two buttons: "OK" and "Cancel".</p>
	<p>If you forget NuSet-MiniPG's password, please uninstall NuSet-MiniPG, and re-install it again. NuSet-MiniPG's password will be set to "admin" after re-installation.</p>

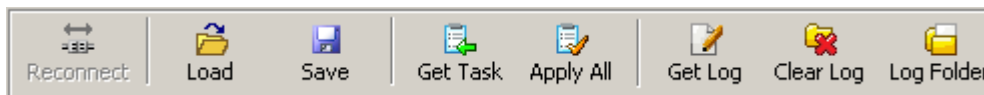
5.3.2.5. Menu Bar – Languages

Languages	
English Simplified Chinese	NuSet-MiniPG-Config has 2 different languages for its UI available. You can set the language of UI to either English or Simplified Chinese .

5.3.2.6. Menu Bar – Help





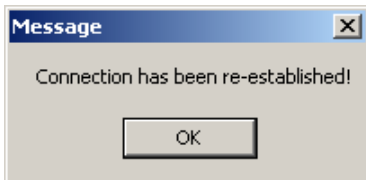
Help													
Xtramus Web	Access Xtramus Website (www.xtramus.com).												
System Requirements	<div><p>A “System Requirements” window will pop up and show the requirements for your PC and the FPGA/Firmware of NuStreams-P5G.</p><p>➤ OK: Click this button to exit the “System Requirements” pop-up window.</p></div> <div><div>System Requirements</div><div><div>Operation platform requirements</div><div><div>-- Microsoft(R) Windows 2000/XP/Vista/7</div><div>-- Pentium 1.3GHz or higher</div><div>-- 512MB of RAM for Windows 2000/XP, 1.0GB of RAM for Windows Vista/7</div><div>-- 10GB of available hard disk space</div></div><div>Xtramus instrument requirements</div><table><thead><tr><th>Module Name</th><th>FPGA</th><th>Firmware</th></tr></thead><tbody><tr><td>NuStreams-P5G</td><td>v1.0b003</td><td>v1.0b030</td></tr><tr><td>NuStreams-P9A</td><td>v1.0b002</td><td>v0.1b030</td></tr><tr><td>NuStreams-P6GW</td><td>v0.9b012</td><td>v0.1b013</td></tr></tbody></table><div>OK</div></div></div>	Module Name	FPGA	Firmware	NuStreams-P5G	v1.0b003	v1.0b030	NuStreams-P9A	v1.0b002	v0.1b030	NuStreams-P6GW	v0.9b012	v0.1b013
Module Name	FPGA	Firmware											
NuStreams-P5G	v1.0b003	v1.0b030											
NuStreams-P9A	v1.0b002	v0.1b030											
NuStreams-P6GW	v0.9b012	v0.1b013											
About NuSet-MiniPG-Config	An “ About ” window will pop up and show detailed system information.												

5.3.3. NuSet-MiniPG-Config Function – Quick Launch Buttons

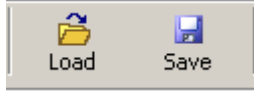
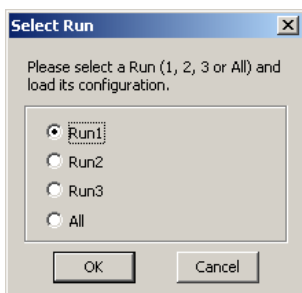
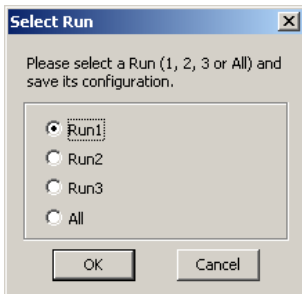


These Quick Launch Buttons allow you to reconnect NuStreams-P5G, access test setting files from your PC or NuStreams-P5G, or managing test log files.

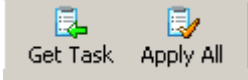
5.3.3.1. Quick Launch Buttons – Reconnect

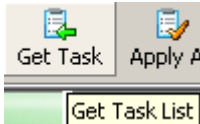

Reconnect	
<p>Reconnect</p> 	<p>If the USB connection between your PC and NuStreams-P5G is down, a “Disconnected” icon  will be shown in “USB Connection Status”.</p> <p>Press Reconnect button  to re-establish the connection between your PC and NuStreams-P5G. If the connection has been established successfully, a message window will pop up, and the “USB Connection Status” will be shown as “Connected” .</p> 

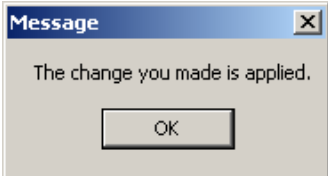
5.3.3.2. Quick Launch Buttons – Load & Save

Load & Save	
<p>Load & Save</p> 	<p>The Load and Save buttons allow you to load or save test settings from/to your PC, identical to “Load Config. Profile From Existing Files” and “Save Configuration” functions available in the Menu Bar mentioned in 5.3.1.1. Menu Bar – File.</p> <p>To load test setting files stored in your PC, click “Load” button, select which Run (or All 3 Runs) to apply the settings, and choose the path which the test setting file are located.</p>  <p>To save test setting on your PC, click “Save” button, select which Run (or All 3 Runs) to save, and choose where you would like to save the test settings.</p>  <p>Test setting files for each Run (Run 1~3) are named in the format of “*.run”, while test setting files for all runs are named in the format of “*.all”.</p>



5.3.3.3. Quick Launch Buttons – Get Task/Apply All

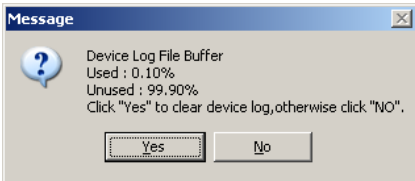
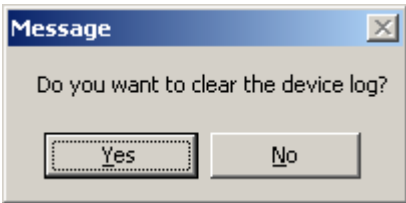
Get Task/Apply All	
<p>Get Task/Apply All</p> 	<p>By clicking Get Task button, you can load test settings from NuStreams-P5G, display all settings in Info/Run Select List and Main Display Window.</p> <p>On the other hand, Apply All button allows you to apply all the changes you've made to all Runs and save these settings to your NuStreams-P5G.</p> <p>To load test settings from NuStreams- P5G, click "Get Task" button. Settings will be displayed in Info/Run Select List and Main Display Window.</p> <p>To apply all the changes you've made with the utility software and save these settings to NuStreams-P5G, click "Apply All".</p> <p>Please note that the USB cable connection between PC and NuStreams-P5G must be connected at all time while getting/setting tasks.</p>

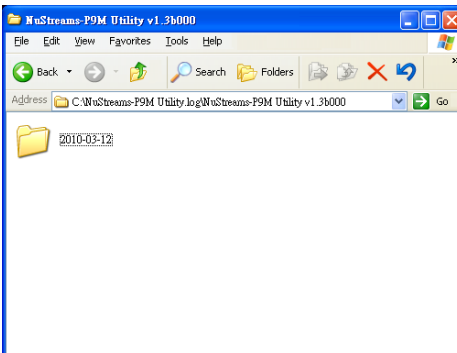





5.3.3.4. Quick Launch Buttons – Get Log/Clear Log/Log Folder

Get Log/Clear Log/Log Folder	
<p>Get Log/Clear Log</p> 	<p>Get Log and Clear Log buttons allow you to obtain test logs from NuStreams-P5G or clear all test logs stored in NuStreams-P5G, just like the "Get Device Log" and "Clear Device Log" on the Menu Bar.</p> <p>To get all test logs from NuStreams-P5G, click "Get Log" button. A window with NuStreams-P5G log memory space and log folder screen will pop up. Click Yes to clear all test logs in NuStreams-P5G, or click No to leave these test logs be.</p> <p>To clear all test logs stored in NuStreams -P5G's log memory, click "Clear Log" button, and click Yes.</p>
<p>Log Folder</p> 	<p>Click "Log Folder" button to open the folder where all test logs are stored on your PC. All log folders are named with the test date, and all logs are named with the test date and time.</p>

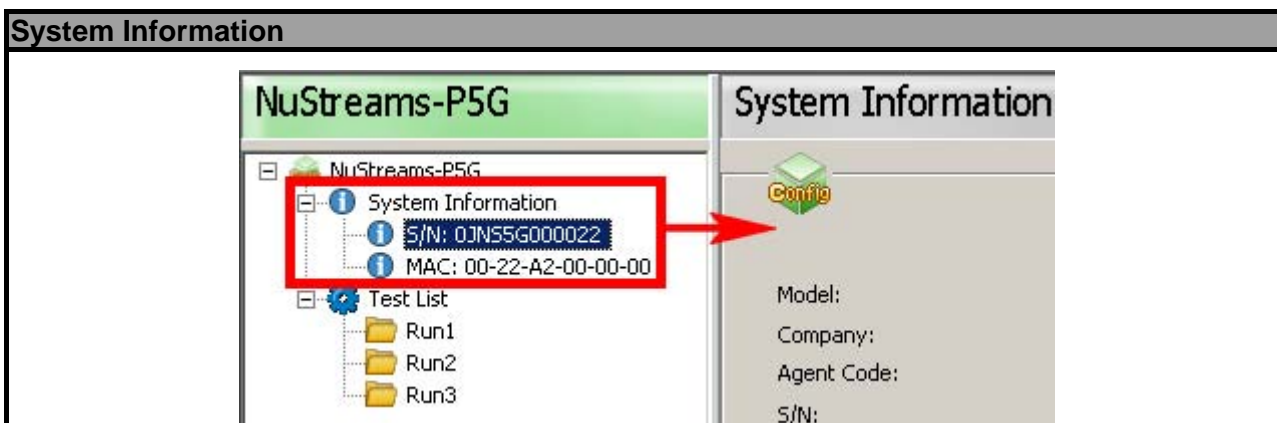





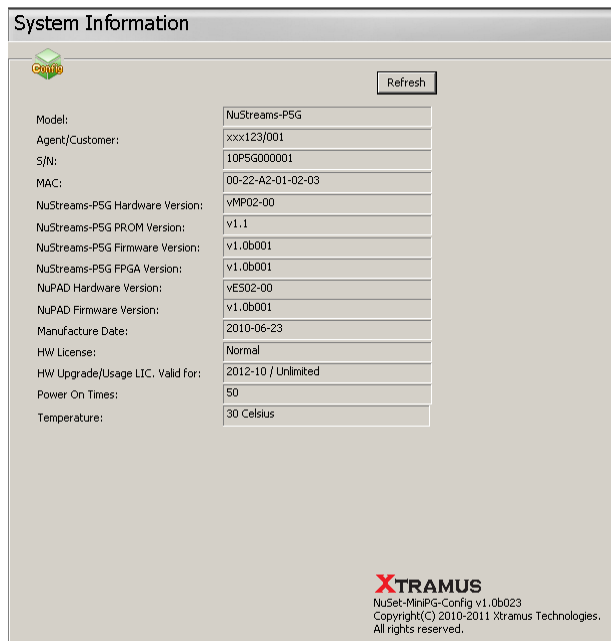
5.3.4. NuSet-MiniPG-Config Function – Info/Run Select List



The **Info/Run Select List** contains a list of selectable options. When selected, the **Main Display Window** will show the corresponding information/Run setting.



To show NuStreams-P5G's detailed system information, click "**System Information**" on the **Info/Run Select List**. A detailed System Information will display on the **Main Display Window** located in the **right side** of the **Info/Run Select List**.



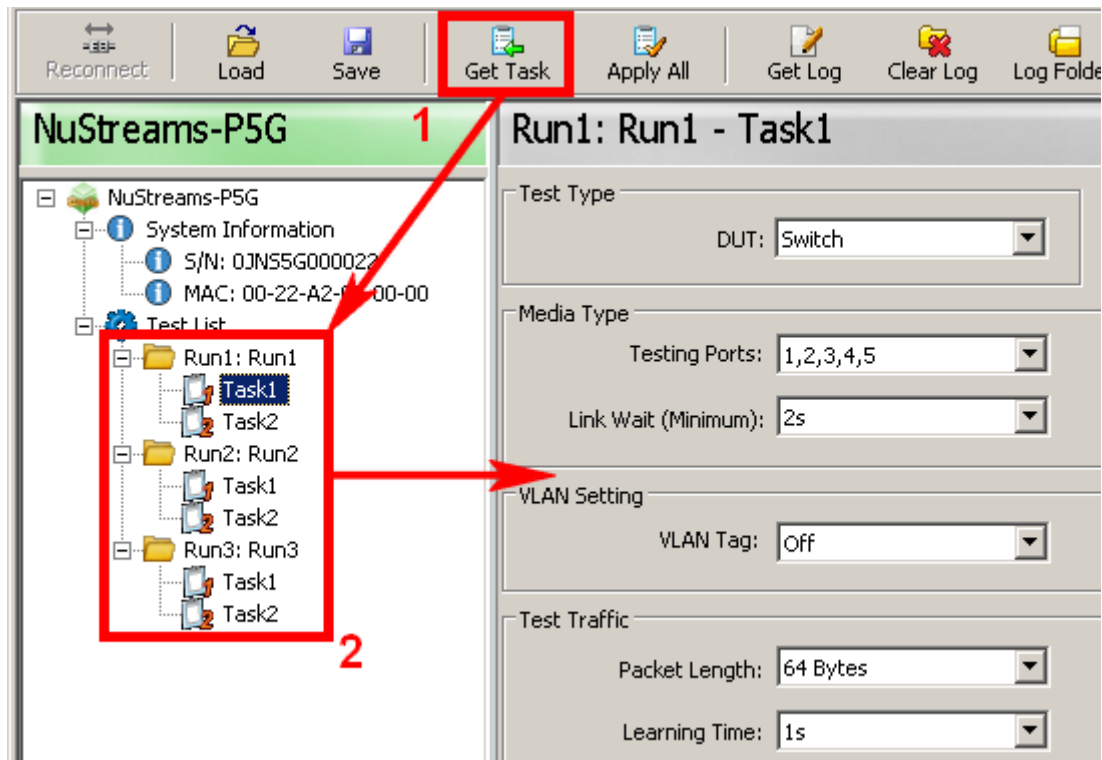
The **System Information** displayed on **Main Display Window** shows NuStreams-P5G and NuPAD's detail information and status.

- **Refresh:** Update the latest system information and status, press this button.

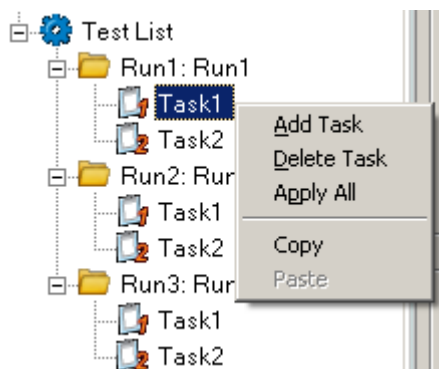
Test List

To access test settings stored in NuStreams-P5G, please click **Get Task** button located on the **Quick Launch Buttons** section so NuSet-MiniPG-Config can access and display all Runs stored in NuStreams-P5G.

Please note that the USB connection between PC and NuStreams- P5G must be connected **at all time** while getting/setting tasks.

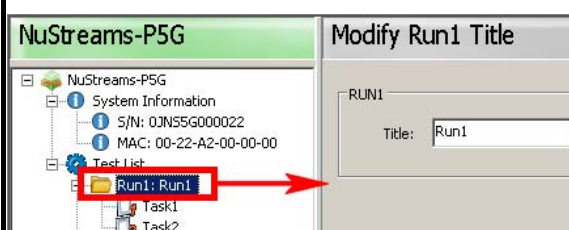


All test settings stored in NuStreams-P5G will be displayed under **Test List**. All parameters in each Task can be viewed or changed by the detailed configuration window displayed on the **Main Display Window**.



By right clicking a Task on **Test List**, you can **Add Task**, **Delete Task**, **Apply All**, **Copy**, or **Paste** Tasks.

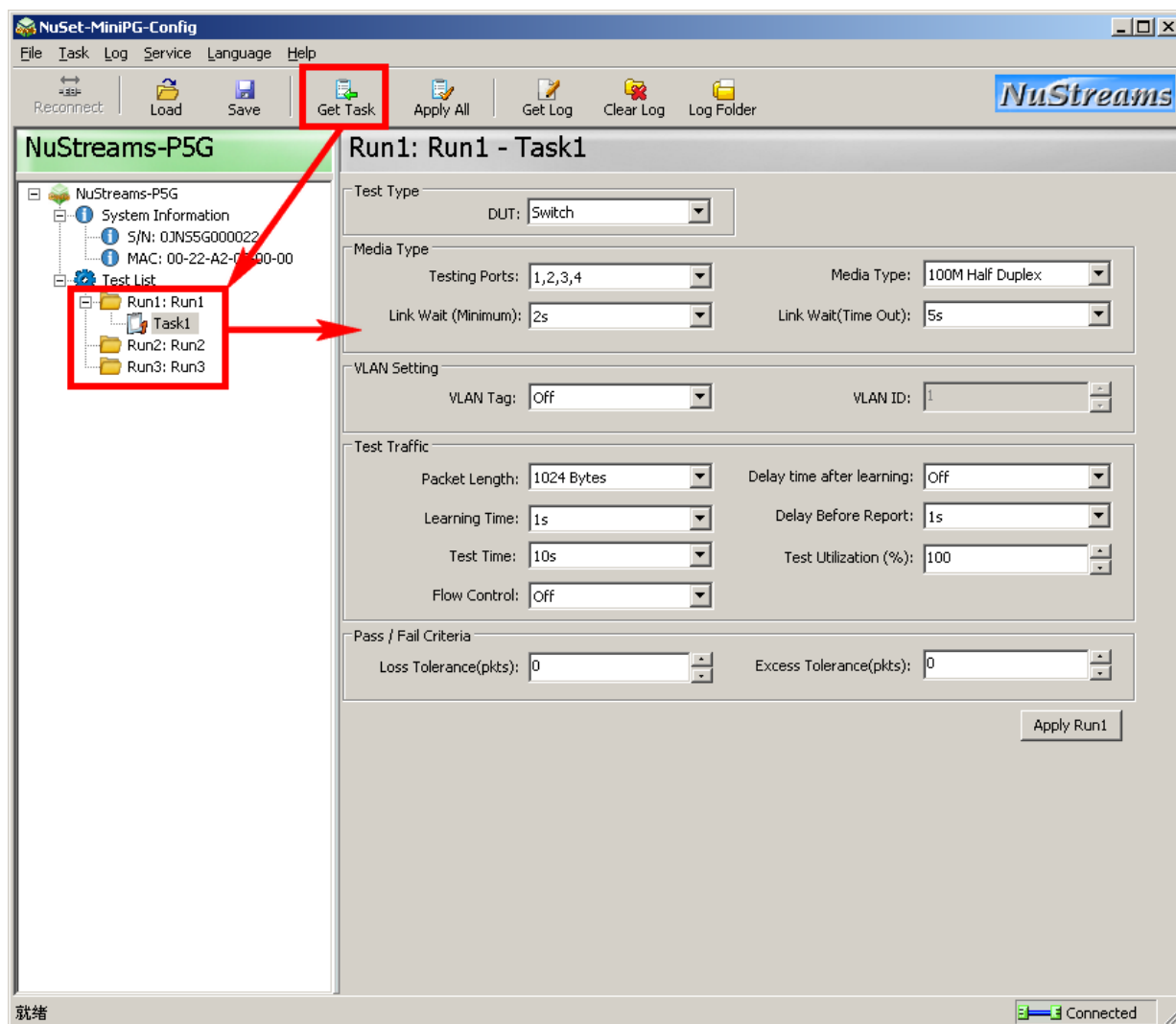
- **Add Task:** Add a Task with default test setting values to the current Run. Up to 4 Tasks can be added in one Run.
- **Delete Task:** Delete the current Task.
- **Apply All:** Apply all test settings and save these settings to NuStreams-P5G.
- **Copy:** Copy current Task.
- **Paste:** Paste the Task you copied to the current Run.



Also, by clicking **Run 1~3** listed on **Test List**, you can change the title of each Run on the **Main Display Window**.

5.3.5. Configuring Tasks with NuSet-MiniPG-Config

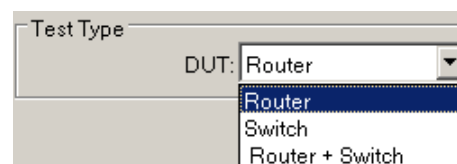
After acquiring all the Tasks stored in NuStreams-P5G, click the specific Task you would like to configure on the **Info/Run Select List** to configure/view all parameters of that Task in **Main Display Window** as shown in the figure down below:



Before configuring test parameters in each Task, please select the **DUT Test Type** first. The test parameters listed in the **Main Display Window** will change according to the **DUT Test Type** you chose.

NuStreams-P5G utility has 3 different test types:

- **Router:** Testing Broadband Router including its WAN abilities.
- **Switch:** Testing Switch and its switch functions.
- **Router + Switch:** Testing Broadband Router as well as its switch functions.



5.3.5.1. NuSet-MiniPG-Config Task Setting – Router

DUT – Router

Run1: Run1 - Task1

Test Type
DUT: Router

DUT Description
Get DUT Description: Off

Media Type
Media Type: 100M Full Duplex
Link Wait (Minimum): 2s

Link Down Time: Off
Link Wait(Time Out): 10s

Connection Setting
WAN Link Type: DHCP
Connection Wait Timeout: 3s
Check Vendor ID: Off
Vendor MAC: 00 - 00 - 00

DUT WAN Static IP: 172 . 168 . 2 . 254
WAN Gateway IP: 0 . 0 . 0 . 0
Skip DHCP Process if Valid: Off

VLAN Setting
LAN VLAN Tag: Off
WAN VLAN Tag: Off

LAN VLAN ID: 0
WAN VLAN ID: 0

Test Traffic
Packet Length: 64 Bytes
Test Time: 10s
Test Delay: Off
Flow Control: Off

Delay time after learning: Off
Delay Before Report: 1s
WAN to LAN Utilization (%): 100
LAN to WAN Utilization (%): 100

Pass / Fail Criteria
Loss Tolerance(pkts): 0

Excess Tolerance(pkts): 0

Apply Run1

Test Type/DUT Description

- **DUT:** Choose “Router” from this scroll-down menu to start configuring router tests.
- **Get DUT Description:** Enable this function to acquire DUT information during test and output it to test logs.

Media Type

- **Media Type:** You can set the connection speed here with the scroll-down menu.
- **Link Down Time:** The connection link between DUT and NuStreams-P5G will be forced to terminate when this function is enabled.
- **Link Wait (Minimum):** NuStreams-P5G will attempt to establish connection with the DUT and wait for the minimum time (seconds). NuStreams-P5G will keep waiting until the minimum time is met even the DUT has already responded.
- **Link Wait (Time Out):** NuStreams-P5G will attempt to establish connection with the DUT and wait for a period of time until time out (second), and NuStreams-P5G will not attempt to establish connection anymore.

Connection Setting

- **WAN Link Type:** Choose the WAN connection type for DUT testing. Three WAN Link Types are available: **DHCP**, **Static IP**, and **PPPoE**. The **WAN Link Type** set here must be the same with the setting of the DUT.
- **DUT WAN Static IP:** If the **WAN Link Type** is set as **Static IP**, please input the static IP address you set in the DUT here.
- **Connection Wait Timeout:** This function sets the duration of time for attempting to establish connection with DHCP server.
- **WAN Gateway IP:** If the **WAN Link Type** is set as **Static IP**, please input the gateway IP address you set in the DUT here.
- **Check Vendor ID:** Enable this function to check DUTs’ MAC address and see if they match DUT vendor’s designated MAC address.
- **Skip DHCP Process if Valid:** Disable or enable DHCP server.
- **Vendor MAC:** If **Check Vendor ID** is enabled, please input the vender’s designated MAC address here for comparisons.

VLAN Setting	
<ul style="list-style-type: none"> • LAN VLAN Tag: Add VLAN tags to all LAN packets. • WAN VLAN Tag: Add VLAN tags to all WAN packets 	<ul style="list-style-type: none"> • LAN VLAN ID: VLAN ID for LAN. • WAN VLAN ID: VLAN ID for WAN.
Test Traffic	
<ul style="list-style-type: none"> • Packet Length: Length of testing packets. • Test Time: The duration of time for DUT test. • Test Delay: When enabled, NuStreams-P5G will halt for the set amount of time before starting DUT test. • Flow Control: When Flow Control is enabled, the transmitting rate will drop if traffic overflow occurs. 	<ul style="list-style-type: none"> • Delay Time After Learning: When enabled, NuStreams-P5G will halt for the set amount of time after performing network learning. • Delay Before Report: When enabled, NuStreams-P5G will halt for the set amount of time before report. • WAN to LAN Utilization (%): The traffic flow ratio from WAN to LAN, presented in percentage (1~99). • LAN to WAN Utilization (%): The traffic flow ratio from LAN to WAN, presented in percentage (1~99).
Pass/Fail Criteria	
<ul style="list-style-type: none"> • Loss Tolerance (pkts): The acceptable number of lost packets in data transmitting during tests (0~9999). 	<ul style="list-style-type: none"> • Excess Tolerance (pkts): The acceptable number of excess packets in data transmitting during tests (0~9999).
Apply Run	
<ul style="list-style-type: none"> • Click this button to apply all the settings you've made and save the settings to NuStreams-P5G. 	

5.3.5.2. NuSet-MiniPG-Config Task Setting – Switch

DUT – Switch

Run1: Run1 - Task1

Test Type

DUT: Switch

Media Type

Testing Ports: 1,2,3,4

Media Type: 100M Half Duplex

Link Wait (Minimum): 2s

Link Wait(Time Out): 5s

VLAN Setting

VLAN Tag: Off

VLAN ID: 1

Test Traffic

Packet Length: 1024 Bytes

Delay time after learning: Off

Learning Time: 1s

Delay Before Report: 1s

Test Time: 10s

Test Utilization (%): 100

Flow Control: Off

Pass / Fail Criteria

Loss Tolerance(pkts): 0

Excess Tolerance(pkts): 0

Apply Run1

Test Type/DUT Description

- DUT:** Choose “Switch” from this scroll-down menu to start configuring switch tests.

Media Type

- Testing Ports:** Please connect the DUT with NuStreams-P5G’s Switch Ports with Cat-5 cables according to the **Testing LAN Ports** you set here.
- Link Wait (Minimum):** NuStreams-P5G will attempt to establish connection with the DUT and wait for the minimum time (seconds). NuStreams-P5G will keep waiting until the minimum time is met even the DUT has already responded.
- Media Type:** You can set the connection speed here with the scroll-down menu.
- Link Wait (Time Out):** NuStreams-P5G will attempt to establish connection with the DUT and wait for a period of time until time out (second), and NuStreams-P5G will not attempt to establish connection anymore.

VLAN Setting

- VLAN Tag:** Add VLAN tags to all packets.
- VLAN ID:** VLAN ID.

Test Traffic

- Packet Length:** The length of test packets (from 64~1600 Bytes) transmitting by NuStreams-P5G.
- Learning Time:** NuStreams-P5G will start sending learning packets to the DUT. The DUT will record the MAC addresses of these packets, and learn the routing to NuStreams-P5G.
- Delay Time After Learning:** When enabled, NuStreams-P5G will halt for the set amount of time after performing network learning.
- Test Time:** The duration of time for DUT test.
- Delay Before Report:** When enabled, NuStreams-P5G will halt for the set amount of time before report.
- Test Utilization (%):** The traffic flow ratio of the entire network, presented in percentage (1~99).
- Flow Control:** When **Flow Control** is enabled, the transmitting rate will drop if traffic overflow occurs.

Pass/Fail Criteria

- Loss Tolerance (pkts):** The acceptable number of lost packets in data transmitting during tests (0~9999).
- Excess Tolerance (pkts):** The acceptable number of excess packets in data transmitting during tests (0~9999).

Apply Run

- Click this button to apply all the settings you’ve made and save the settings to NuStreams-P5G.

5.3.5.3. NuSet-MiniPG-Config Task Setting – Router + Switch

DUT: Router + Switch

Run1: Run1 - Task1

Test Type
DUT: Router+Switch

DUT Description
Get DUT Description: Off

Media Type
Media Type: 100M Half Duplex
Link Wait (Minimum): 2s
Testing LAN Ports: 1,2,3,4

Link Down Time: Off
Link Wait(Time Out): 5s

Connection Setting
WAN Link Type: DHCP
Connection Wait Timeout: 10s
Check Vendor ID: Off
Vendor MAC: 00 - 00 - 00

DUT WAN Static IP: 172 . 168 . 2 . 254
WAN Gateway IP: 0 . 0 . 0 . 0
Skip DHCP Process if Valid: Off

VLAN Setting
LAN VLAN Tag: Off
WAN VLAN Tag: Off

LAN VLAN ID: 1
WAN VLAN ID: 1

Test Traffic
Packet Length: 1024 Bytes
Test Time: 10s
Learning Time: 1s
Test Delay: Off
Flow Control: Off

Delay time after learning: Off
Delay Before Report: 1s
Switch Utilization (%): 100
WAN to LAN Utilization (%): 100
LAN to WAN Utilization (%): 100

Pass / Fail Criteria
Loss Tolerance(pkts): 0

Excess Tolerance(pkts): 0

Apply Run1

Test Type/DUT Description

- **DUT:** Choose "Router + Switch" from this scroll-down menu to start configuring tests for both routers and switches.
- **Get DUT Description:** Enable this function to acquire DUT information during test and output it to test logs.

Media Type

- **Media Type:** You can set the connection speed here with the scroll-down menu.
- **Link Wait (Minimum):** NuStreams-P5G will attempt to establish connection with the DUT and wait for the minimum time (seconds). NuStreams-P5G will keep waiting until the minimum time is met even the DUT has already responded.
- **Testing LAN Ports:** Please connect the DUT with NuStreams-P5G's Switch Ports with Cat-5 cables according to the Testing LAN Ports you set here.
- **Link Down Time:** The connection link between DUT and NuStreams-P5G will be forced to terminate when this function is enabled.
- **Link Wait (Time Out):** NuStreams-P5G will attempt to establish connection with the DUT and wait for a period of time until time out (second), and NuStreams-P5G will not attempt to establish connection anymore.

Connection Setting

- **WAN Link Type:** Choose the WAN connection type for DUT testing. Three WAN Link Types are available: **DHCP**, **Static IP**, and **PPPoE**. The **WAN Link Type** set here must be the same with the setting of the DUT.
- **Connection Wait Timeout:** This function sets the duration of time for attempting to establish connection with DHCP server.
- **Check Vender ID:** Enable this function to check DUTs' MAC address and see if they match DUT vender's designated MAC address.
- **Vendor MAC:** If **Check Vender ID** is enabled, please input the vender's designated MAC address here for comparisons.
- **DUT WAN Static IP:** If the **WAN Link Type** is set as **Static IP**, please input the static IP address you set in the DUT here.
- **WAN Gateway IP:** If the **WAN Link Type** is set as **Static IP**, please input the gateway IP address you set in the DUT here.
- **Skip DHCP Process if Valid:** Disable or enable DHCP server.

VLAN Setting

- **LAN VLAN Tag:** Add VLAN tags to all LAN packets.
- **WAN VLAN Tag:** Add VLAN tags to all WAN packets
- **LAN VLAN ID:** VLAN ID for LAN.
- **WAN VLAN ID:** VLAN ID for WAN.

Test Traffic

- **Packet Length:** Length of testing packets.
- **Test Time:** The duration of time for DUT test.
- **Test Delay:** When enabled, NuStreams-P5G will halt for the set amount of time before starting DUT test.
- **Flow Control:** When **Flow Control** is enabled, the transmitting rate will drop if traffic overflow occurs.
- **Delay Time After Learning:** When enabled, NuStreams-P5G will halt for the set amount of time after performing network learning.
- **Delay Before Report:** When enabled, NuStreams-P5G will halt for the set amount of time before report.
- **WAN to LAN Utilization (%):** The traffic flow ratio from WAN to LAN, presented in percentage (1~99).
- **LAN to WAN Utilization (%):** The traffic flow ratio from LAN to WAN, presented in percentage (1~99).

Pass/Fail Criteria

- **Loss Tolerance (pkts):** The acceptable number of lost packets in data transmitting during tests (0~9999).
- **Excess Tolerance (pkts):** The acceptable number of excess packets in data transmitting during tests (0~9999).

Apply Run

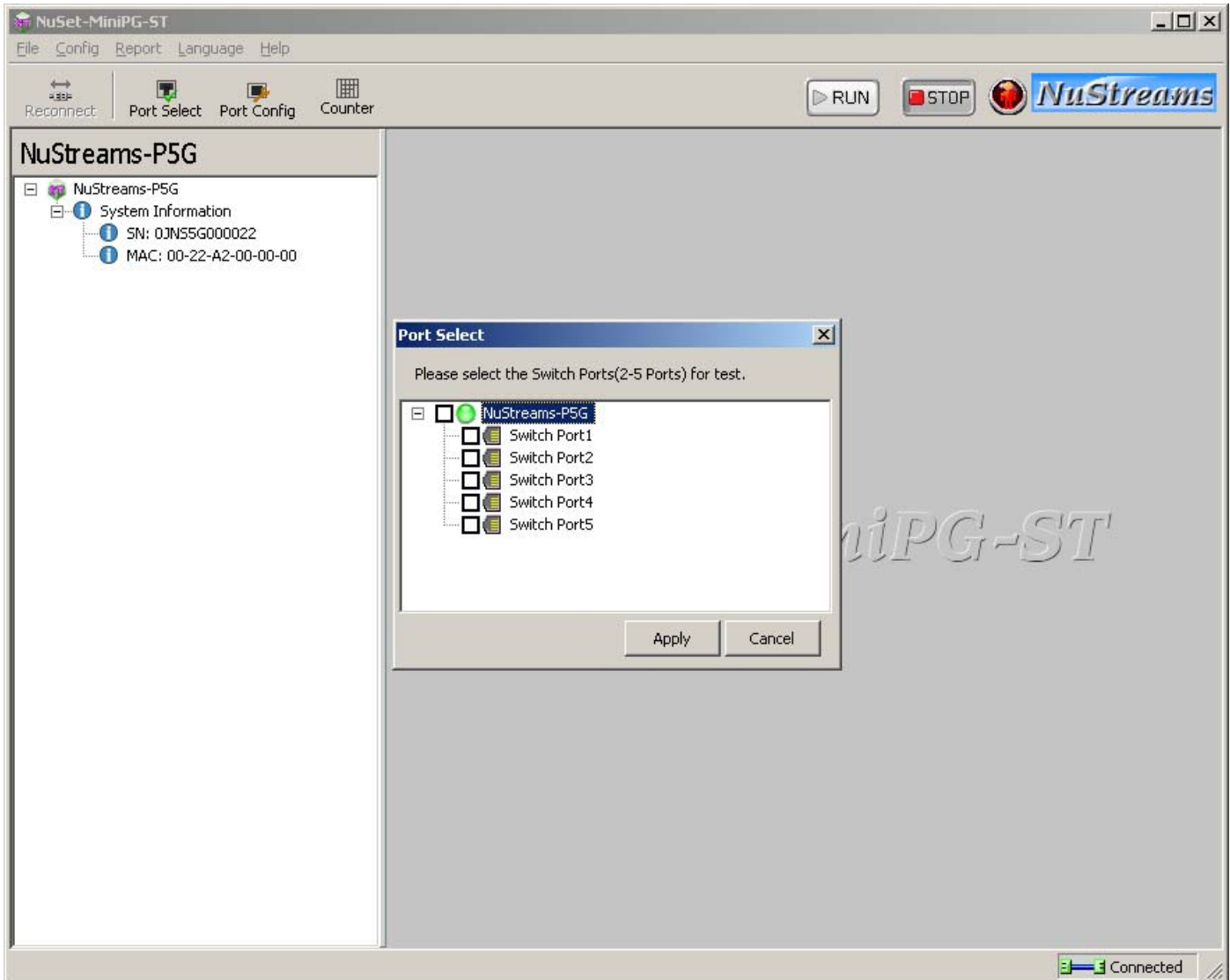
- Click this button to apply all the settings you've made and save the settings to NuStreams-P5G.

5.4. NuSet-MiniPG-ST Functions

5.4.1. NuSet-MiniPG-ST Functions Overview

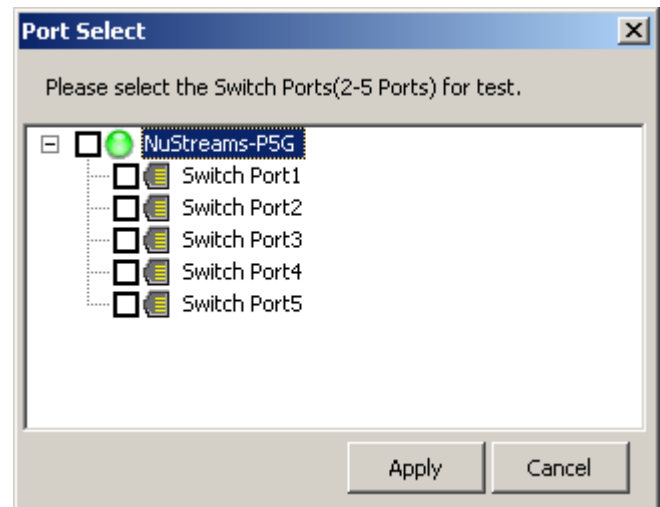
Network Switch Test

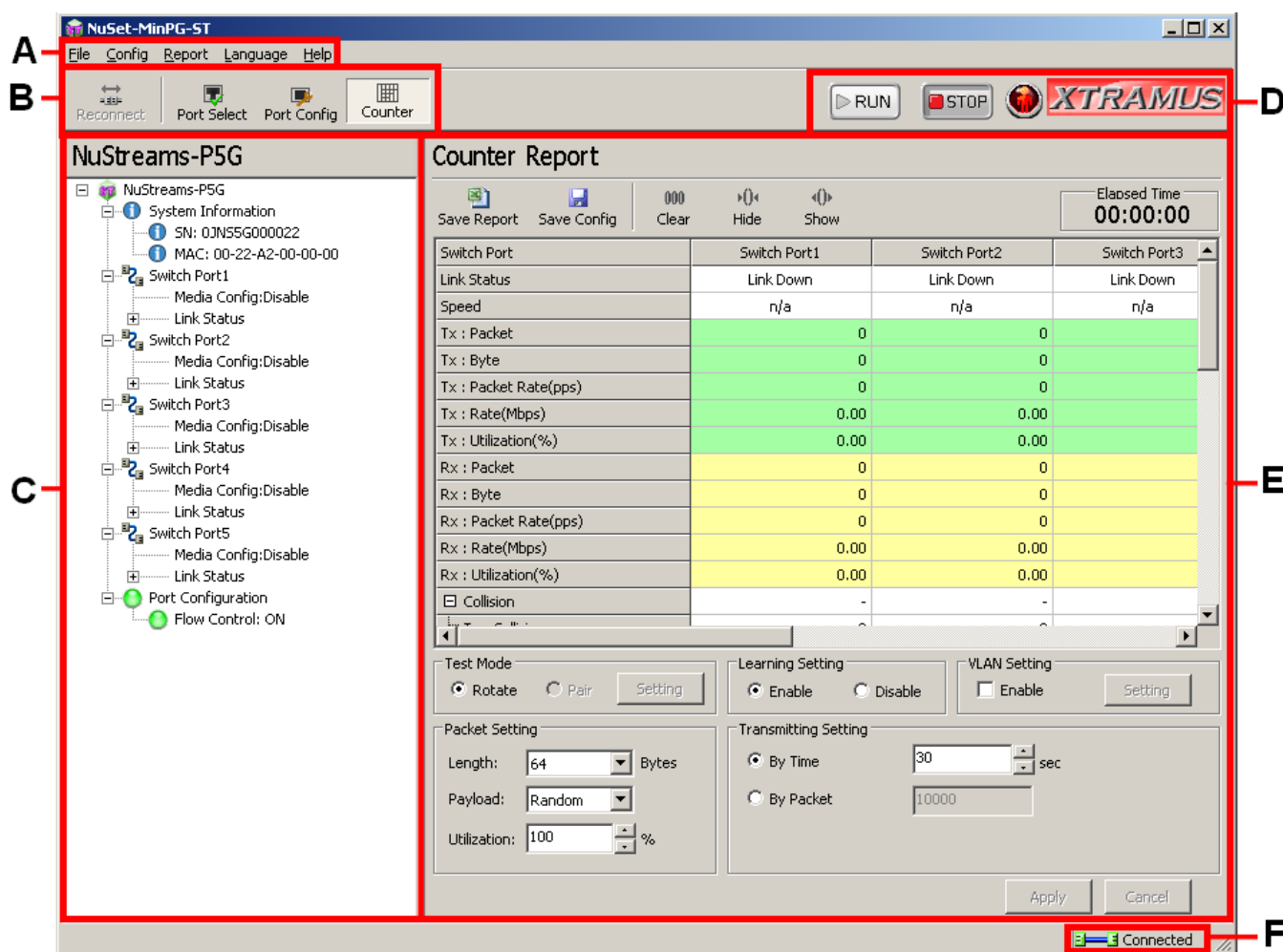
If you choose **Network Switch Test** from **NuSet-MiniPG Option Menu**, NuSet-MiniPG-ST's main window will pop up as shown below:



A **Port Select** window will pop up as shown in the figure on the right hand. To access NuSet-MiniPG-ST and performing network switch tests, you have to select which switch port you would like to apply for performing tests first.

Click the check-box for the switch ports you would like to apply for the test (**Switch Port 1~5**), and click the **Apply** button to apply all settings you've made.





Function Descriptions		
A	Menu Bar	The Menu Bar allows you to select test ports, access configuration files from your PC and view counter reports.
B	Quick Launch Buttons	With a simple click of these Quick Launch Buttons, you can select test ports, access configuration files from your PC and view counter reports.
C	Info/Port Select List	This section contains a selectable list of NuStreams-P5G's detailed system information and port list.
D	Control Buttons & Test Running Status Icon	The Control Buttons allow you to start/stop tests, and the Test Running Status Icon indicates if the test is running.
E	Main Display Window	This section displays detailed system information including all ports you've selected.
F	USB Connection Status	This icon shows the connection status between your PC and NuStreams-P5G.

5.4.2. NuSet-MiniPG-ST Function – Menu Bar

File Config Report Language Help

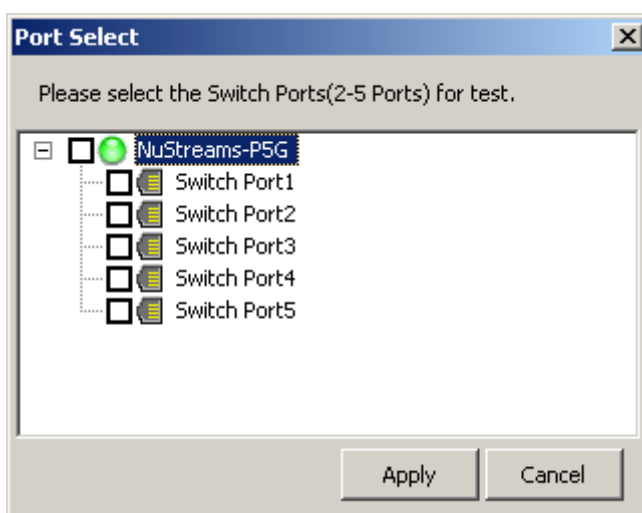
The **Menu Bar** includes configuration options such as **File**, **Config**, **Report**, **Language**, and **Help**.

5.4.2.1. Menu Bar – File

File	
Load Default Configuration	The system will load the default test settings for switch tests.
Load Existing Configuration	NuSet-MiniPG-ST will load test settings which you saved previously.
Save Configuration	You can save all settings you've made for all ports to your PC.
Configuration Save As	The " Configuration Save As " function is similar to the " Save Configuration ". The only difference is that you can save settings with different file names.
Exit	Exit NuSet-MiniPG-ST.

5.4.2.2. Menu Bar – Config

Config	
Port Select	<p>As mentioned in 5.4.1. NuSet-MiniPG-ST Functions Overview, if you choose Port Select from the Menu Bar, a Port Select window will pop up as shown in the figure on the right hand. To access NuSet-MiniPG-ST and performing network switch tests, you have to select which switch port you would like to apply for performing tests first.</p> <p>Click the check-box for the switch ports you would like to apply for the test (Port 1~5), and click the Apply button to apply all settings you've made.</p> <ul style="list-style-type: none"> ➤ Apply: Apply all the settings you've made and exit. ➤ Cancel: Cancel all the settings you've made and exit.



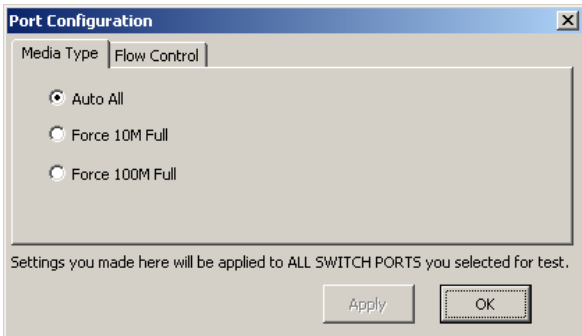
Config

Port Configuration

When you choose **Port Configuration** from the **Menu Bar**, a **Port Configuration** window will pop up, allowing you to set configuration parameters for **all the ports you've selected**.

You can set the **Media Type** or enabling **Flow Control** function here on the **Port Configuration** pop-up window.

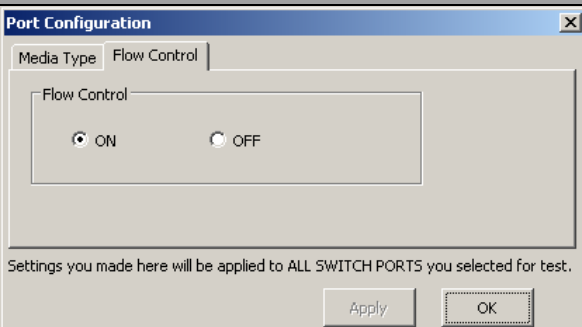
Media Type



You can set the connection rate for all selected ports with the **Media Type** menu tab.

- **Auto All:** Set all ports to auto-negotiation.
- **Force 10M Full:** All ports will be set to 10M full-duplex.
- **Force 100M Full:** All ports will be set to 100M full-duplex.
- **Apply:** Save all the settings you've made without exiting.
- **OK:** Save all the settings you've made and exit.

Flow Control



You can enable/disable **Flow Control** here with the **Flow Control** menu tab.

- **ON:** Enable Flow Control.
- **OFF:** Disable Flow Control.
- **Apply:** Save all the settings you've made without exiting.
- **OK:** Save all the settings you've made and exit.

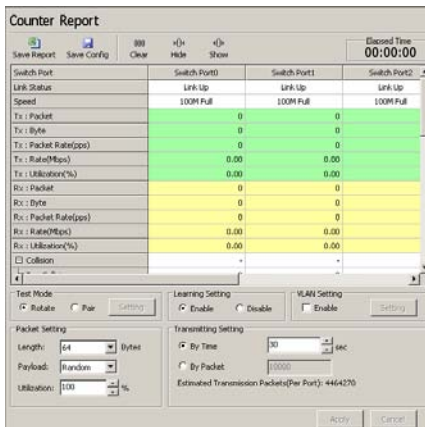
5.4.2.3. Menu Bar – Report

Report

Counter Report

When you choose **Counter Report** from the **Menu Bar**, the **Counter Report** will be displayed on NuSet-MiniPG-ST's **Main Display Window** as shown in the figure on the right.

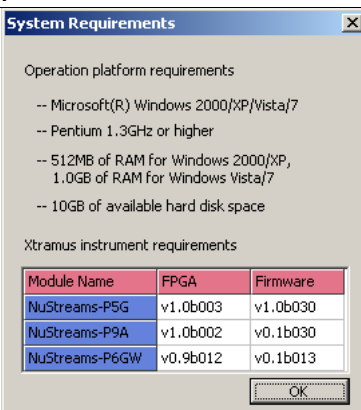
For more detailed information regarding to **Counter Report**, please refer to **5.4.6. Counter Report**.



5.4.2.4. Menu Bar – Languages

Languages	
English Simplified Chinese	NuSet-MiniPG-ST has 2 different languages for its UI available. You can set the language of UI to either English or Simplified Chinese .

5.4.2.5. Menu Bar – Help



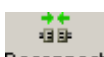

Help													
Xtramus Web	Access Xtramus Website (www.xtramus.com).												
System Requirements	<p>A “System Requirements” window will pop up and show the requirements for your PC and the FPGA/Firmware of NuStreams-P5G.</p> <p>➤ OK: Click this button to exit the “System Requirements” pop-up window.</p>  <table><tr><th>Module Name</th><th>FPGA</th><th>Firmware</th></tr><tr><td>NuStreams-P5G</td><td>v1.0b003</td><td>v1.0b030</td></tr><tr><td>NuStreams-P9A</td><td>v1.0b002</td><td>v0.1b030</td></tr><tr><td>NuStreams-P6GW</td><td>v0.9b012</td><td>v0.1b013</td></tr></table>	Module Name	FPGA	Firmware	NuStreams-P5G	v1.0b003	v1.0b030	NuStreams-P9A	v1.0b002	v0.1b030	NuStreams-P6GW	v0.9b012	v0.1b013
Module Name	FPGA	Firmware											
NuStreams-P5G	v1.0b003	v1.0b030											
NuStreams-P9A	v1.0b002	v0.1b030											
NuStreams-P6GW	v0.9b012	v0.1b013											
About NuSet-MiniPG-ST	An “ About ” window will pop up and show detailed system information.												

5.4.3. NuSet-MiniPG-ST Function – Quick Launch Buttons



These Quick Launch Buttons allow you to reconnect NuStreams-P5G, select test ports, access configuration files from your PC and view counter reports.

5.4.3.1. Quick Launch Buttons – Reconnect


Reconnect	
<p>Reconnect</p> 	<p>If the USB connection between your PC and NuStreams-P5G is down, a “Disconnected” icon  will be shown in “USB Connection Status”.</p> <p>Press Reconnect button  to re-establish the connection between your PC and NuStreams-P5G. If the connection has been established successfully, a message window will pop up, and the “USB Connection Status” will be shown as “Connected”  Connected.</p>

Message [X]

Connection has been re-established!

OK

5.4.3.2. Quick Launch Buttons – Port Select

Port Select	
<p>Port Select</p> 	<p>As mentioned in 5.4.1. NuSet-MiniPG-ST Functions Overview, if you choose Port Select from the Menu Bar, a Port Select window will pop up as shown in the figure on the right hand. To access NuSet-MiniPG-ST and performing network switch tests, you have to select which switch port you would like to apply for performing tests first.</p> <p>Click the check-box for the switch ports you would like to apply for the test (Port 1~5), and click the Apply button to apply all settings you’ve made.</p> <ul style="list-style-type: none"> ➤ Apply: Apply all the settings you’ve made and exit. ➤ Cancel: Cancel all the settings you’ve made and exit.

Port Select [X]

Please select the Switch Ports(2-5 Ports) for test.

☒ **NuStreams-P5G**

☐ Switch Port1

☐ Switch Port2


☐ Switch Port3

☐ Switch Port4

☐ Switch Port5

5.4.3.3. Quick Launch Buttons – Port Config

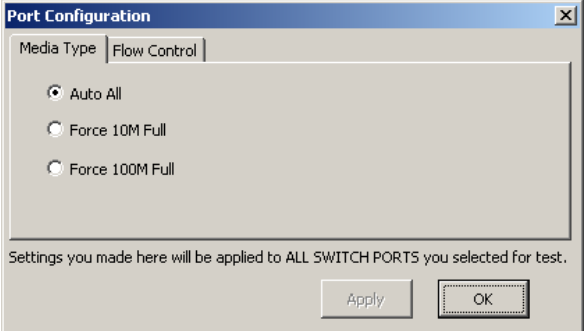
Port Config



When you press the **Port Configuration** button, a **Port Configuration** window will pop up, allowing you to set configuration parameters for **all the ports you've selected**.

You can set the **Media Type** or enabling **Flow Control** function here on the **Port Configuration** pop-up window.

Media Type

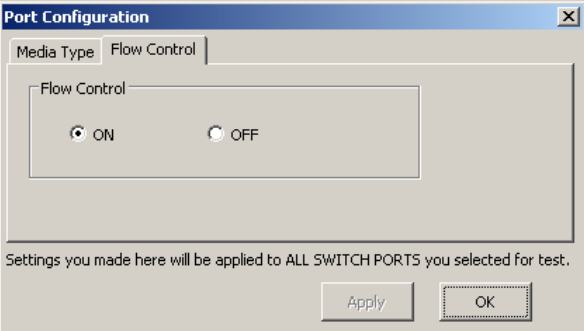


Settings you made here will be applied to ALL SWITCH PORTS you selected for test.

You can set the connection rate for all selected ports with the **Media Type** menu tab.

- **Auto All:** Set all ports to auto-negotiation.
- **Force 10M Full:** All ports will be set to 10M full-duplex.
- **Force 100M Full:** All ports will be set to 100M full-duplex.
- **Apply:** Save all the settings you've made without exiting.
- **OK:** Save all the settings you've made and exit.

Flow Control




Settings you made here will be applied to ALL SWITCH PORTS you selected for test.

You can enable/disable **Flow Control** here with the **Flow Control** menu tab.

- **ON:** Enable Flow Control.
- **OFF:** Disable Flow Control.
- **Apply:** Save all the settings you've made without exiting.
- **OK:** Save all the settings you've made and exit.

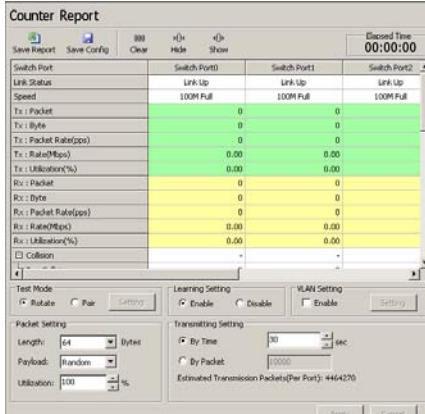
5.4.3.4. Quick Launch Buttons – Counter

Counter

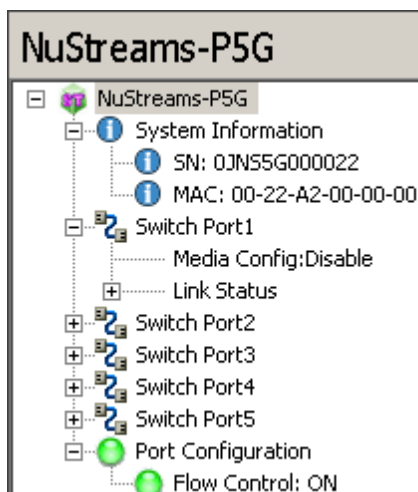


When you press the **Counter Report** button, the **Counter Report** will be displayed on NuSet-MiniPG-ST's **Main Display Window** as shown in the figure on the right.

For more detailed information regarding to **Counter Report**, please refer to **5.4.6. Counter Report**.

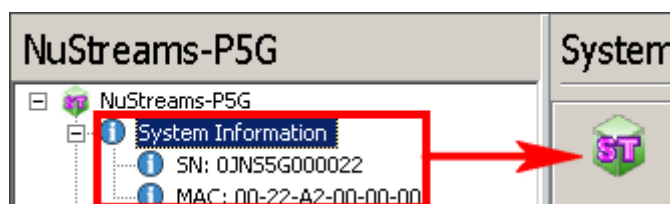


5.4.4. NuSet-MiniPG-ST Function – Info/Port Select List

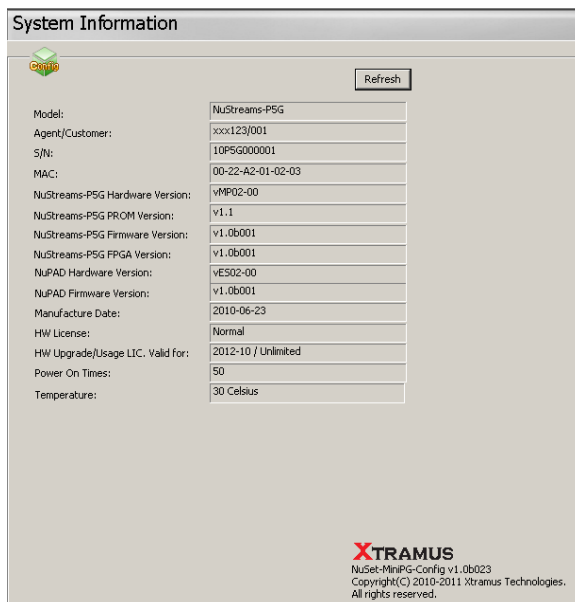


The **Info/Port Select List** allows you to view system information, as well as all information regarding to the ports you've selected.

System Information



To show NuStreams-P5G's detailed system information, click "**System Information**" on the **Info/Run Select List**. A detailed System Information will display on the **Main Display Window** located in the **right side** of the **Info/Run Select List**.





The **System Information** displayed on **Main Display Window** shows NuStreams-P5G and NuPAD's detail information and status.



➤ **Refresh:** Update the latest system information and status, press this button.

5.4.5. NuSet-MiniPG-ST Function – Control Buttons



The **Control Buttons** allow you to start/stop tests, and the **Test Running Status Icon** indicates if there's a test running.

Control Buttons	
	Start test
	Stop test

Test Running Status Icon	
	No test is underway
	Test is running

5.4.6. Counter Report

You can view test counter reports or set switch port parameters here. There are two ways to access **Counter Report**:

Accessing Chart



- Click **Counter Report** located on **Report** in the **Menu Bar**.



- Click the **Counter** button located on **Quick Launch Buttons**.

Save Report

Save Config

Clear

Hide

Show

Elapsed Time
00:00:00

Switch Port	Switch Port0	Switch Port1	Total:2 Ports
Link Status	Link Down	Link Down	n/a
Speed	n/a	n/a	n/a
Tx : Packet	0	0	
Tx : Byte	0	0	
Tx : Rate(Mbps)	0.00	0.00	
Tx : Utilization(%)	0.00	0.00	
Rx : Packet	0	0	
Rx : Byte	0	0	
Rx : Rate(Mbps)	0.00	0.00	
Rx : Utilization(%)	0.00	0.00	
Collision	-	-	
Tx : Collision	0	0	
Tx : Single Collision	0	0	

Test Mode

☒ Rotate
 ☐ Pair

Setting

Learning Setting

☒ Enable
 ☐ Disable

Setting

VLAN Setting

☐ Enable

Setting

Packet Setting

Length: 64 Bytes

Payload: Random

Utilization: 100 %

Transmitting Setting

By Time 30 sec

By Packet 10000






Apply

Cancel

Counter Report		
A	Control Buttons	These two buttons allow you to save the counter report or all the settings you've made here on Counter Report.
B	Main Display Screen	This field displays the counter report of all ports.
C	Port/Packet Setting Options	You can make configurations for all the ports you've selected here in this field, as well as packet contents.
D	Elapsed Time	This field displays the elapsed time of performing test.
E	Apply/Cancel	You can press Apply to apply all the changes you've made here, or press Cancel to cancel all the changes you've made.

5.4.6.1. Control Buttons



Control Buttons	
 Save Report	The Save Report button allows you to save the current counter reports to Microsoft Excel ® format files.
 Save Config	The Save Config button allows you to save the current settings to your PC.
 Clear	The Clear button allows you to clear all statistics displayed in the Main Display Screen .
 Hide	The Hide button allows you to hide some of the TX/Rx statistics, as well as fold all tree style tab statistics in the Main Display Screen .
 Show	The Show button allows you to show all TX/Rx statistics, as well as unfold all tree style tab statistics in the Main Display Screen .

5.4.6.2. Main Display Screen

Switch Port	Switch Port0	Switch Port1	Total:2 Ports
Link Status	Link Down	Link Down	n/a
Speed	n/a	n/a	n/a
Tx : Packet	0	0	
Tx : Byte	0	0	
Tx : Rate(Mbps)	0.00	0.00	
Tx : Utilization(%)	0.00	0.00	
Rx : Packet	0	0	
Rx : Byte	0	0	
Rx : Rate(Mbps)	0.00	0.00	
Rx : Utilization(%)	0.00	0.00	
<input type="checkbox"/> Collision	-	-	
Tx : Collision	0	0	
Tx : Single Collision	0	0	

Main Display Screen

The **Main Display Screen** displays counter report statistics of all ports you've selected for test.

5.4.6.3. Port/Packet Setting Options

You can make configurations for all the ports you've selected here in this field, as well as packet contents here.

Test Mode

The **Test Mode** allows you to set how packets will be transmitted through ports you've selected. There are two modes available here:

- **Rotate:** In **Rotate** test mode, packets will be sent from port to port in a loop while the last port will be connected to the first port.
- **Pair:** In **Pair** test mode, two ports will be paired and packets will be sent from the source port to the destination port. Please note that if you would like to set the test mode as **Pair**, the number of the ports you've selected must be an **even number**.

When the test mode is set as **Pair**, NuSet-MiniPG-ST will pair ports automatically. If you would like to pair the selected ports manually, please press the **Setting** button as shown in the figure on the right hand. A **Pair Setting** window will pop up. Please follow the steps down below to pair ports manually.

1. Please press the << button on the **Pair Setting** pop-up window to remove port pair setting made by NuSet-MiniPG-ST automatically.

2. Please select a port that will be assigned as the source port from the **Source Ports** field.

Test Mode

(Continued)

Pair Setting

Source Ports: 0, 2, 3

Destination Ports: 1, 2, 3

Pair Ports:

Buttons: >, <, <<, OK

3. Please select a port that will be assigned as the destination port from the **Destination Ports** field.

Pair Setting

Source Ports: 2, 3

Destination Ports: 2, 3

Pair Ports: 0-->1

Buttons: >, <, <<, OK

4. Press the > button to add the pair you've made to the **Pair Ports** field. If you would like to remove a port pair setting, please press the < button instead. If you would like to remove all port pair settings, please press the << button.

Pair Setting

Source Ports: 2, 3

Destination Ports: 2, 3

Pair Ports: 0-->1, 2-->3

Buttons: >, <, <<, OK

5. Please repeat step 2~4 until all ports are paired, then press the **OK** button to save all the settings you've made.

Learning Setting

Learning Setting

☒ Enable ☐ Disable

You can enable or disable network learning function here in this field.

VLAN Setting

VLAN Setting

☐ Enable

You can enable or disable VLAN functions for all the ports you've selected. When VLAN function is enabled, you can press the **Setting** button to set the VID manually.

A **VLAN Setting** window will pop up, allowing you to input VID (VLAN ID) manually for each port. After inputting VID for all the ports, please press the **OK** button to save all the changes you've made and exit **VLAN Setting** pop-up window.

VLAN Setting

Port	VID
Port 0	0
Port 1	0
Port 2	0
Port 3	0

Buttons: OK

Packet Setting

You can set packet properties here in this field.

Packet Setting

Length: 64 Bytes

Payload: Random

Utilization: 100 %

- **Length:** You can set the packet length here with the **length** scroll-down menu. The packet length available here include **64, 128, 256, 512, 1024, 1518**, and **Random**.
- **Payload:** This scroll-down menu allows you to set packet contents to **Random, 16'0 16'1, 32'0 32'1, 55AA, 5555AAAA, All 1** or **All 0**.
- **Utilization:** You can set the utilization rate (in percentage) here in this field.

Transmitting Setting

Transmitting Setting

☒ By Time 30 sec

☐ By Packet 10000

You can set the duration for packet transmission here in the **Transmitting Setting** field.

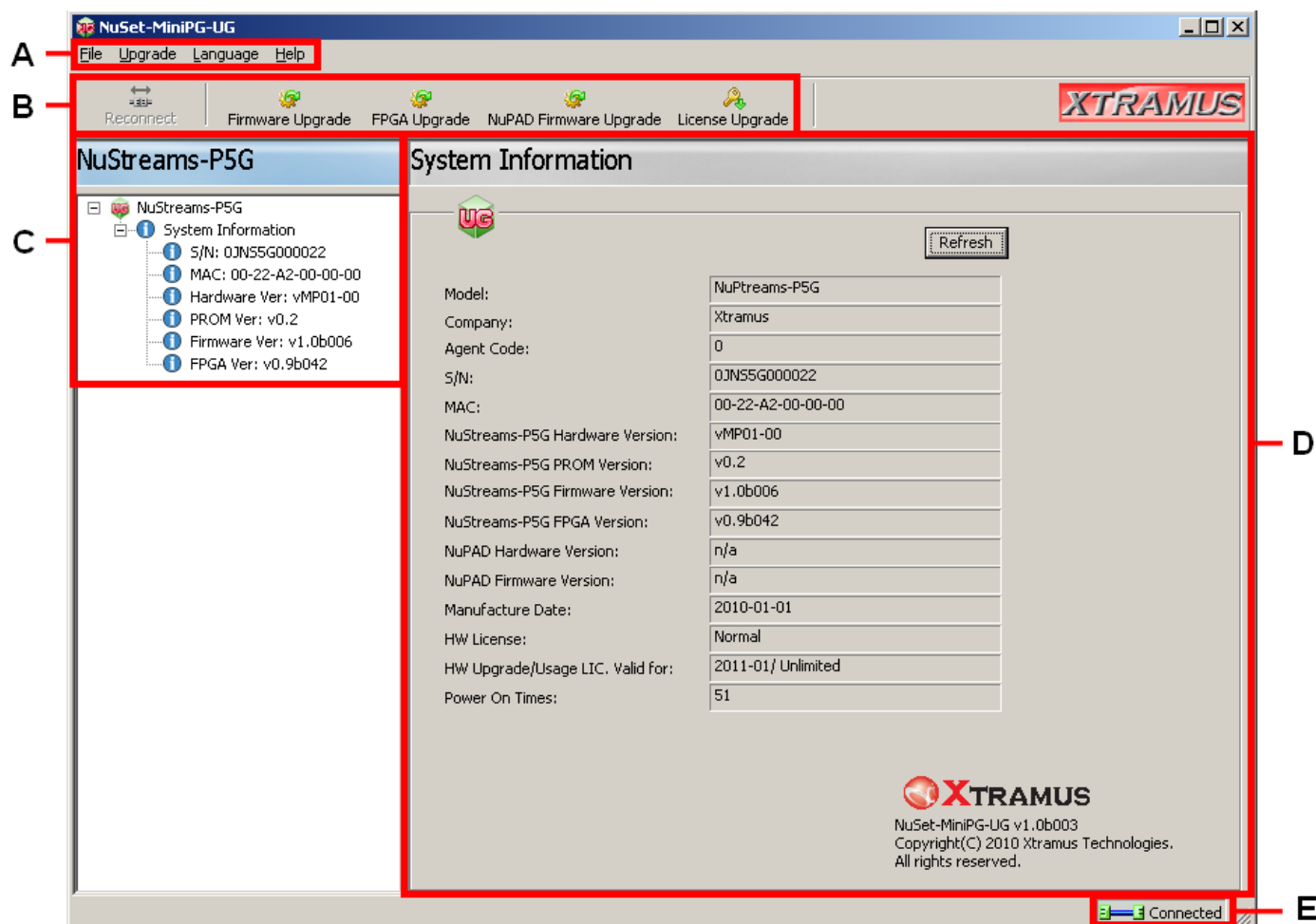
- **By Time:** NuSet-MiniPG-ST will send packets for the set amount of time.
- **By Packet:** NuSet-MiniPG-ST will send the set amount of packets.

5.5. NuSet-MiniPG-UG Functions

5.5.1. NuSet-MiniPG-UG Functions Overview

System Upgrade

If you choose **System Upgrade** from **NuSet-MiniPG Option Menu**, NuSet-MiniPG-UG's main window will pop up as shown below:



Function Descriptions

A	Menu Bar	The Menu Bar allows you to update NuStreams-P5G/NuPAD's firmware, FPGA and NuSet-MiniPG license.
B	Quick Launch Buttons	With a simple click of these Quick Launch Buttons, you can reconnect to disconnected NuStreams-P5G and updating firmware, FPGA and license.
C	Info Select List	This section displays NuStreams-P5G's information.
D	Main Display Window	This section displays detailed system information.
E	USB Connection Status	This icon shows the connection status between your PC and NuStreams-P5G.

5.5.2. NuSet-MiniPG-UG Function – Menu Bar

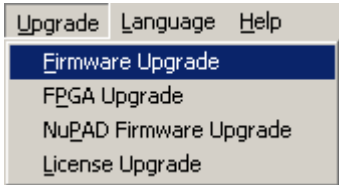
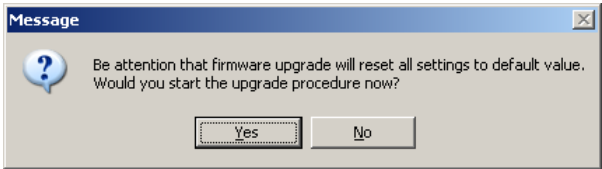
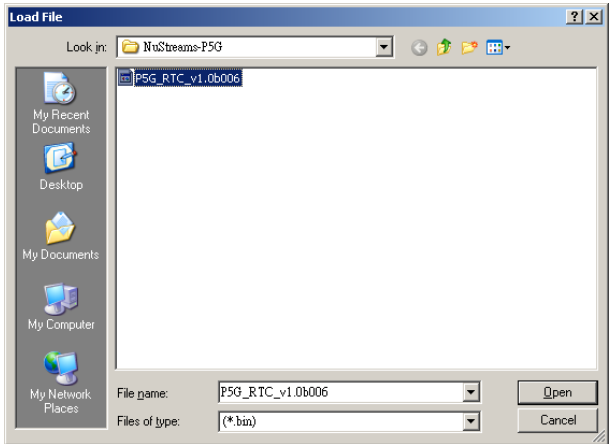
File Upgrade Language Help

The **Menu Bar** includes configuration options such as **File**, **Upgrade**, **Language**, and **Help**.

5.5.2.1. Menu Bar – File

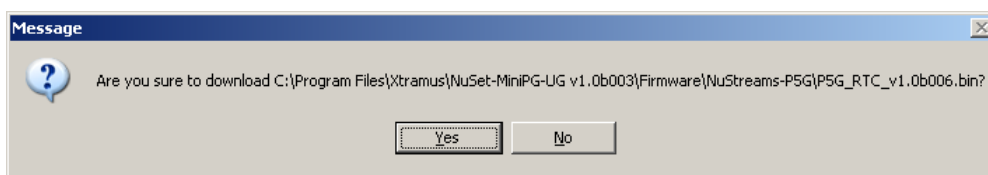
File	
Exit	Exit NuSet-MiniPG-UG.

5.5.2.2. Menu Bar – Upgrade

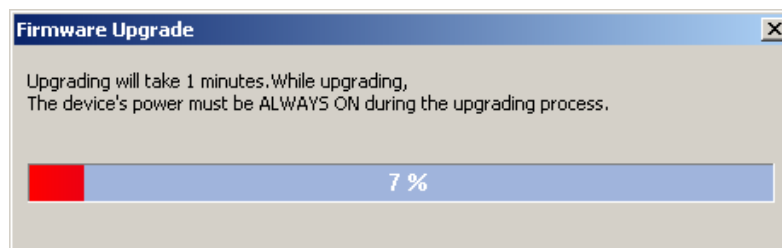
Upgrade	
Firmware/FPGA Upgrade	<p>Before upgrading NuStreams-P5G's firmware/FPGA, please be sure that NuStreams-P5G and your PC are connected via USB cable all the time.</p> <p>The following demonstrations will show you how to upgrade NuStreams-P5G's firmware. Processes for upgrading NuStreams-P5G's FPGA are quite the same and can be related.</p> <p>1. To start upgrading NuStreams-P5G's firmware, click Upgrade → Firmware Upgrade on NuSet-MiniPG-UG's Menu Bar as shown in the figure down below.</p>
	
	<p>2. A message window will pop up, reminding you that all NuStreams-P5G's settings will be reset to default after firmware upgrading. Please click Yes to continue. Please note that all test logs stored in NuStreams-P5G will be erased as well.</p>
	
<p>3. Select where NuStreams-P5G's firmware file (in the format of "*.bin") is stored in your PC, then click "Open".</p>	
	

Upgrade

4. Click **Yes** to start upgrading firmware.



5. NuStreams-P5G utility will start uploading firmware from your PC to NuStreams-P5G.



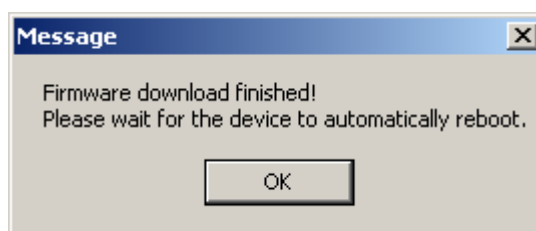
It might take several minutes uploading firmware. Please note that the connection between NuStreams-P5G and your PC shall remain connected at all time, and please be sure that the NuStreams-P5G and your PC's power remain ON during the process.

6. NuStreams-P5G's LCD will display messages as shown in the figure down below during firmware upgrading.

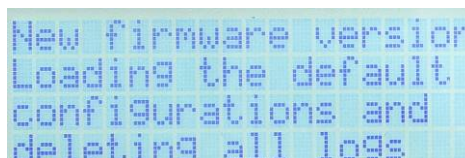
Firmware/FPGA
Upgrade
(Contd.)



7. Firmware upgrading complete! Click **OK** to finish.



8. NuStreams-P5G will reboot and its LCD will display messages as shown in the figure down below while rebooting.



9. The connection between NuStreams-P5G and your PC will be severed after

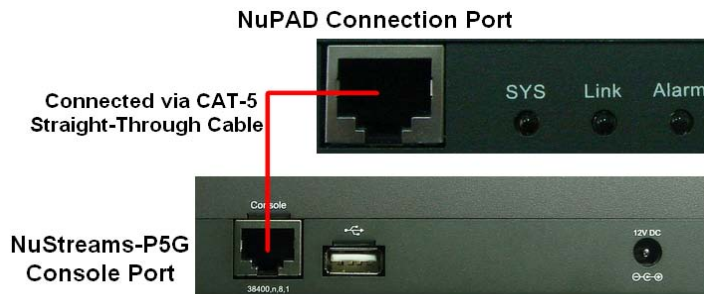
firmware upgrading. Please click the **Reconnect** button  on NuStreams-P5G's **Quick Launch Button** in order to re-establish the connection between your PC and NuStreams-P5G.

Upgrade

Before upgrading NuPAD's firmware, please connect NuPAD, NuStreams-P5G, and your PC properly as shown below. The following sections will demonstrate how to upgrade NuPAD's firmware with NuStreams-P5G.

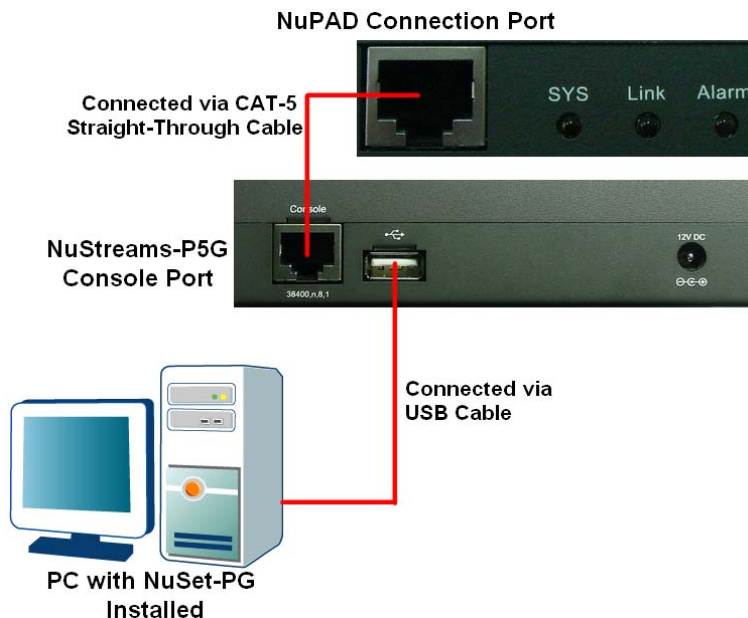
Installation for Upgrading NuPAD

1. Connect NuPAD with NuStreams-P5G's **Console Port** via a CAT-5 Straight-through cable as shown in the figure down below.



NuPAD Firmware Upgrade

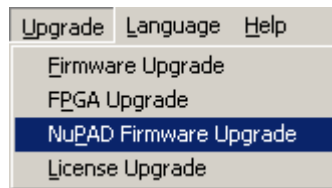
2. Connect NuStreams-P5G's USB Port with your PC via a USB cable as shown in the figure down below.



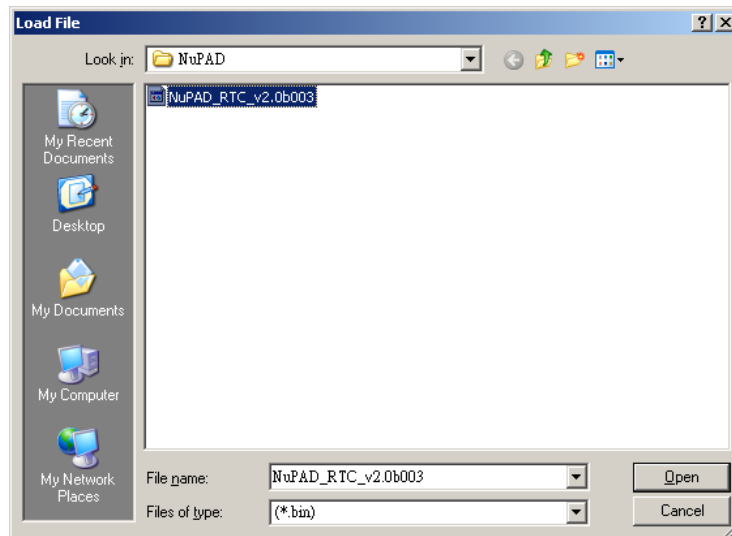
After connecting NuPAD, NuStreams-P5G, and your PC according to the descriptions shown above, please start upgrading NuPAD's firmware according to steps shown on the following page.

Upgrade

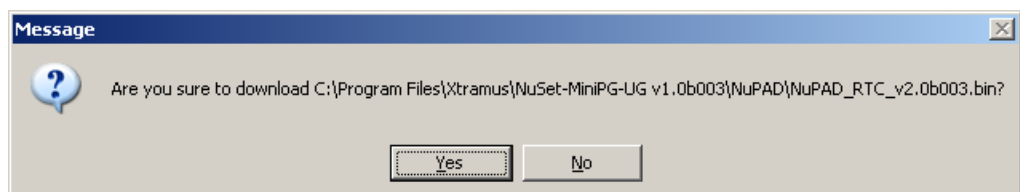
1. To start upgrading NuStreams-P5G's firmware, click **Upgrade** → **NuPAD Firmware Upgrade** on NuSet-MiniPG-UG's **Menu Bar** as shown in the figure down below.



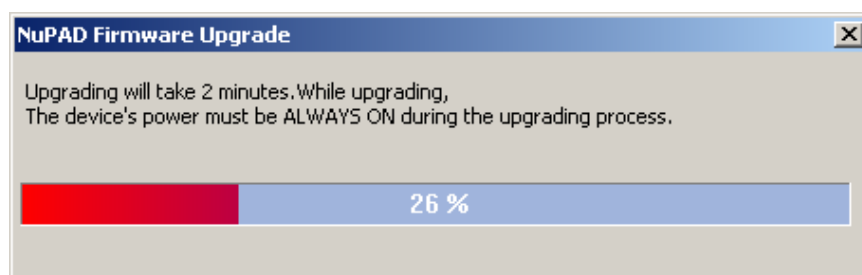
2. Select NuPAD's firmware (in the format of **"*.bin"**) stored in your PC, then click **"Open"**.



3. Click **Yes** to start upgrading firmware.



4. NuSet-MiniPG-UG will start the NuPAD firmware upgrading process. Please note that during the upgrading process, NuPAD, NuStreams-P5G, and your PC must be power on and connected properly at all time.

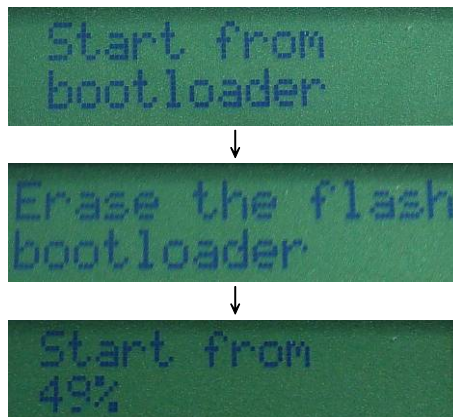


**NuPAD
Firmware
Upgrade
(Contd.)**

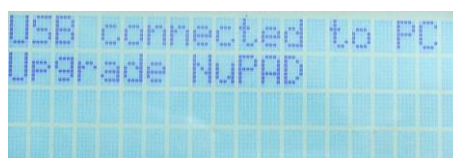
Upgrade

NuPAD Firmware Upgrade (Contd.)

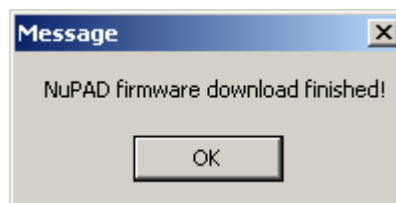
5. During the firmware uploading process, NuPAD's LCD screen will show the firmware upgrading process as shown in the figures down below.



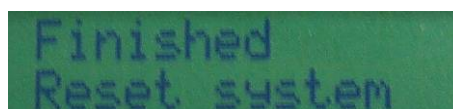
6. During the firmware uploading process, NuPAD's LCD screen will display messages as figure shown down below.



7. Firmware upgrading completes. Please click **OK** to continue.



8. When the firmware completes uploading, NuPAD's LCD will display messages as figure shown down below.



9. NuPAD will reboot and try to re-connect with NuStreams-P5G after upgrading its firmware. **Please remove the USB cable between your PC and NuStreams-P5G when NuPAD is connecting to NuStreams-P5G.**

Upgrade

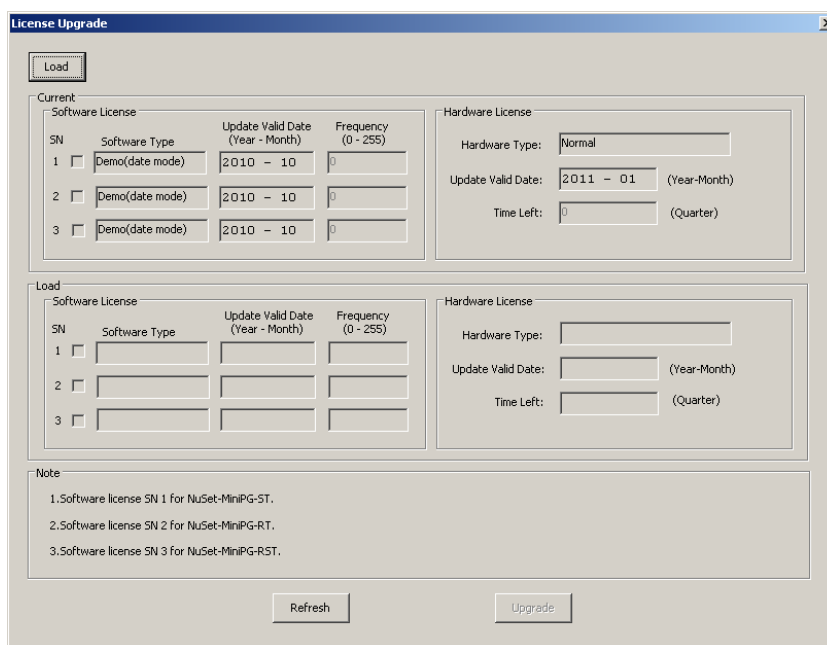
Before upgrading NuStreams-P5G's license, please be sure that **NuStreams-P5G and your PC are connected via USB cable all the time.**

The following sections will demonstrate how to upgrade NuStreams-P5G's license.

1. To start upgrading NuStreams-P5G's license, click **Upgrade** → **License Upgrade** on NuSet-MiniPG-UG's **Menu Bar** as shown in the figure down below.

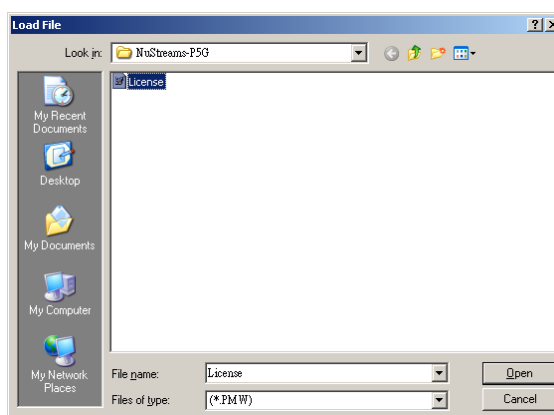


2. A **License Update** window will pop up, showing licenses for NuSet-MiniPG and NuStreams-P5G. Please click the **Load** button located on the upper-left part to start updating license.



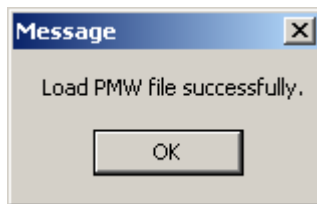
License Upgrade

3. Select the license file (in the format of **"*.PMW"**) stored in your PC, then click **"Open"**.

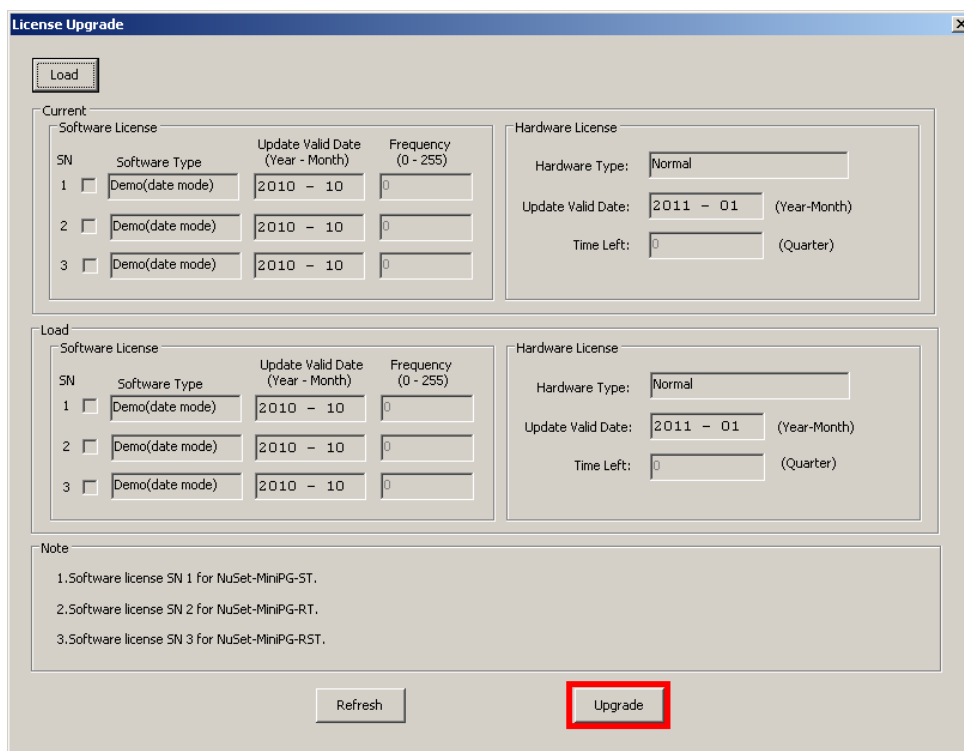


Upgrade

4. A message window will pop up and remind you that the PMW file has been loaded. Please click **OK** to continue.



5. Please note that the PMW file you've chosen hasn't been upgraded yet. **Click the Upgrade button located on License Update window's bottom-right part to finish upgrading your license.**

The 'License Upgrade' window is divided into two main sections: 'Current' and 'Load'. Each section contains a table for 'Software License' and a 'Hardware License' section. The 'Current' section has a 'Load' button at the top left. The 'Load' section has a 'Refresh' button at the bottom left and an 'Upgrade' button at the bottom right, which is highlighted with a red rectangle. Below the 'Load' section is a 'Note' area with three lines of text.

SN	Software Type	Update Valid Date (Year - Month)	Frequency (0 - 255)
1	<input type="checkbox"/> Demo(date mode)	2010 - 10	0
2	<input type="checkbox"/> Demo(date mode)	2010 - 10	0
3	<input type="checkbox"/> Demo(date mode)	2010 - 10	0

SN	Software Type	Update Valid Date (Year - Month)	Frequency (0 - 255)
1	<input type="checkbox"/> Demo(date mode)	2010 - 10	0
2	<input type="checkbox"/> Demo(date mode)	2010 - 10	0
3	<input type="checkbox"/> Demo(date mode)	2010 - 10	0

Hardware License

Hardware Type: Normal

Update Valid Date: 2011 - 01 (Year-Month)

Time Left: 0 (Quarter)

Note

1. Software license SN 1 for NuSet-MiniPG-ST.
2. Software license SN 2 for NuSet-MiniPG-RT.
3. Software license SN 3 for NuSet-MiniPG-RST.

Refresh Upgrade

License
Upgrade
(Contd.)

If you have any problems with your NuStreams-P5G/NuSet-MiniPG's licenses, please contact Xtramus Technologies with the following contact information:

E-mail: sales@xtramus.com

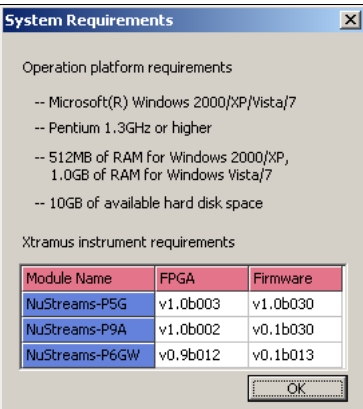
Tel: +886-2-8227-6611

Fax: +886-2-8227-6622

5.5.2.3. Menu Bar – Languages

Languages	
English Simplified Chinese	NuSet-MiniPG-Config has 2 different languages for its UI available. You can set the language of UI to either English or Simplified Chinese .

5.5.2.4. Menu Bar – Help





Help	
Xtramus Web	Access Xtramus Website (www.xtramus.com).
System Requirements	<p>A “System Requirements” window will pop up and show the requirements for your PC and the FPGA/Firmware of NuStreams-P5G.</p> <p>➤ OK: Click this button to exit the “System Requirements” pop-up window.</p> 
About NuSet-MiniPG-UG	An “ About ” window will pop up and show detailed system information.

5.5.3. NuSet-MiniPG-UG Function – Quick Launch Buttons




These Quick Launch Buttons allow you to reconnect NuStreams-P5G, upgrading NuStreams-P5G's firmware/FPGA, upgrading NuPAD's firmware, and upgrading NuSet-MiniPG/NuStreams-P5G's license.

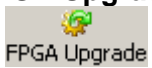
5.5.3.1. Quick Launch Buttons – Reconnect

Reconnect	
	<p>If the USB connection between your PC and NuStreams-P5G is down, a “Disconnected” icon  Disconnected will be shown in “USB Connection Status”.</p> <p>Press Reconnect button  to re-establish the connection between your PC and NuStreams-P5G. If the connection has been established successfully, a message window will pop up, and the “USB Connection Status” will be shown as “Connected” .</p> <div data-bbox="1061 660 1428 840"> </div>


5.5.3.2. Quick Launch Buttons – Firmware Upgrade

Firmware Upgrade	
	<p>The Firmware Upgrade button allows you to upgrade NuStreams-P5G's firmware. For more detailed descriptions, please refer to the “Firmware/FPGA Upgrade” section in “5.5.2.2. Menu Bar – Upgrade”.</p>


5.5.3.3. Quick Launch Buttons – FPGA Upgrade

FPGA Upgrade	
	<p>The FPGA Upgrade button allows you to upgrade NuStreams-P5G's FPGA. For more detailed descriptions, please refer to the “Firmware/FPGA Upgrade” section in “5.5.2.2. Menu Bar – Upgrade”.</p>

5.5.3.4. Quick Launch Buttons – NuPAD Firmware Upgrade

NuPAD Firmware Upgrade	
	<p>The NuPAD Firmware Upgrade button allows you to upgrade NuPAD's firmware. For more detailed descriptions, please refer to the “NuPAD Firmware Upgrade” section in “5.5.2.2. Menu Bar – Upgrade”.</p>

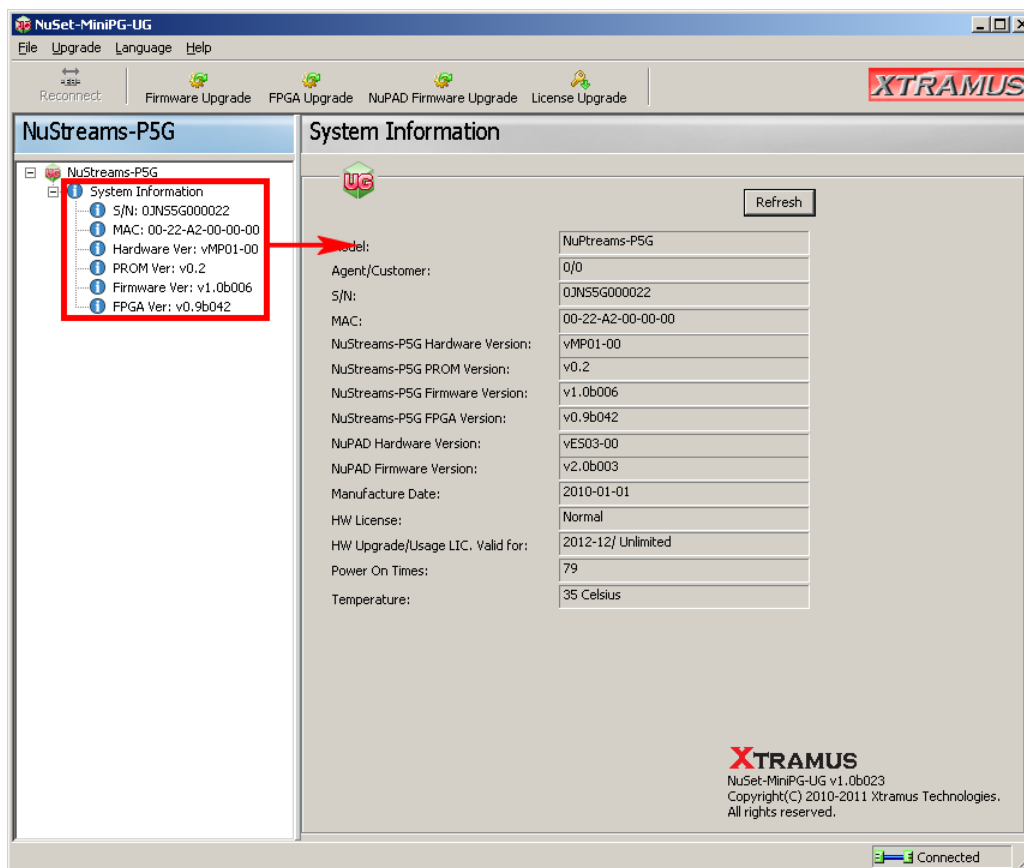
5.5.3.4. Quick Launch Buttons – License Upgrade

License Upgrade	
License Upgrade  License Upgrade	The License Upgrade button allows you to upgrade NuSet-MiniPG or NuStreams-P5G's license. For more detailed descriptions, please refer to the “ License Upgrade ” section in “ 5.5.2.2. Menu Bar – Upgrade ”.

5.5.4. NuSet-MiniPG-UG Function – Info Select List

The **Info Select List** contains a list of selectable options. When selected, the **Main Display Window** will show NuStreams-P5G's system information.

To show NuStreams-P5G's detailed system information, click “**System Information**” on the **Info Select List**. A detailed System Information will display on the **Main Display Window** located in the **right side** of the **Info Select List** as shown in the figure down below.



The **System Information** displayed on **Main Display Window** shows NuStreams-P5G and NuPAD's detail information and status.

- **Refresh:** Update the latest system information and status, press this button.

6. Controlling Tests with NuPAD

NuPAD is an assistant extension keypad, especially designed for running tests at mass production line.

With all test parameters set and stored in NuStreams-P5G, **NuPAD** allows users to perform tests without changing pre-set parameters.



6.1. NuPAD Functions Overview



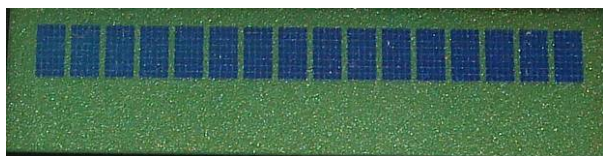
		Description
A	Connection Port	Connecting NuPAD with NuStreams-P5G's Console Port .
B	LCD Screen	Displaying system information, status, and test results.
C	Control Buttons	<ul style="list-style-type: none"> ➤ Pause: Press this button to pause the current running test. Press this button again to resume the test. ➤ ■ Stop: Press this button to stop the current running test. ➤ ► Run: Press this button to start test.
D/E	System LEDs	<ul style="list-style-type: none"> ➤ Sys/Link/Alarm: Showing NuPAD running status. ➤ Power: When NuPAD is connected to NuStreams-P5G's Console Port, the Green Power LED will be ON. ➤ Pass/Fail: If the test passed, the Pass/Fail Green LED will be ON; if the test failed, the Pass/Fail Amber LED will be ON. ➤ Step 1~4: Showing the progress of the test.

6.2. Connecting NuPAD with NuStreams-P5G

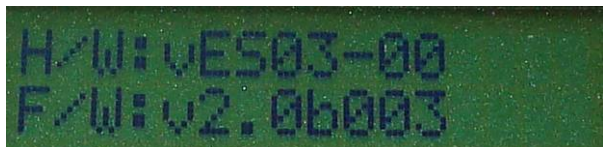
Before using NuPAD as NuStreams-P5G's assistant extension keypad, you have to connect NuPAD's **Connection Port** with NuStreams-P5G's **Console Port** with a CAT-5 straight-through cable first. The figure down below is an installation example of connecting NuStreams-P5G and NuPAD.



After connecting NuStreams-P5G with CAT-5 straight-through cable, NuPAD will start establishing connection with NuStreams-P5G, and its LCD will display system status as shown down below.



1. NuPAD is powering up.



2. Showing NuPAD's hardware and firmware version.



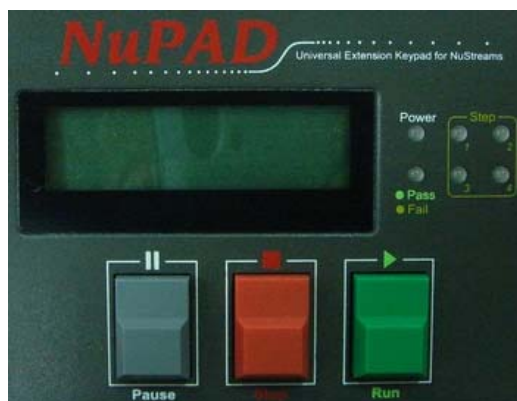
3. NuPAD is starting connecting with NuStreams-P5G. During this process, NuPAD's buzzer will be beeping.



4. Connection established, and NuPAD's buzzer stops beeping. If NuPAD's buzzer keeps beeping and the connection between NuStreams-P5G and NuPAD can't be established, please power off both NuStreams-P5G and NuPAD, power them on, and try again.

Please note that NuStreams-P5G cannot be connected to your PC and its LCD should be on the Main Display menu when connecting NuStreams-P5G with NuPAD for controlling DUT tests.

6.3. Starting DUT Tests with NuPAD



NuPAD has 3 buttons on its front panel: “|| **Pause**”, “■ **Stop**”, and “▶ **Run**”. After connecting NuPAD with NuStreams-P5G with Cat-5 cable, you can start/pause/stop DUT tests with these 3 buttons.

Please see the table down below for a detailed description about these buttons’ functions.

Function	Button	Description
Start Testing All Tasks in Current Run	▶ Run	Press “▶ Run ” to start all Tasks in the current Run. The current Run (Run 1~3) about to be tested will be displayed on the upper-right part of LCD. <div data-bbox="1027 969 1461 1077" data-label="Image"> </div>
Switching Current Run	Pause + ■ Stop	To change the current Run (Run 1~3), press both “ Pause ” and “■ Stop ” buttons at the same time. If NuPAD is current in Run 1, pressing both “ Pause ” and “■ Stop ” buttons at the same time will switch the current Run from Run 1 to Run 2.
Pause Current Running Test	Pause	Press “ Pause ” button once to pause the current running test. Press “ Pause ” button again to resume the test.
Stop Current Running Test	■ Stop	Press “■ Stop ” button once to stop the current running test.

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