Quick Start Guide

Anritsu PowerXpert™ and USB Power Sensors

**MA24105A, Inline Peak Power Sensor
350 MHz to 4 GHz**

**MA24106A, True-RMS Power Sensor
10 MHz to 6 GHz**

**MA24x08A, True-RMS Power Sensor
10 MHz to 8 GHz**

**MA24x18A, True-RMS Power Sensor
10 MHz to 18 GHz**

**MA24126A, True-RMS Power Sensor
10 MHz to 26 GHz**

/Inritsu

WARRANTY

The Anritsu product(s) listed on the title page is (are) warranted against defects in materials and workmanship for one (1) year from the date of shipment.

Anritsu's obligation covers repairing or replacing products which prove to be defective during the warranty period. Buyers shall prepay transportation charges for equipment returned to Anritsu for warranty repairs. Obligation is limited to the original purchaser. Anritsu is not liable for consequential damages.

LIMITATION OF WARRANTY

The foregoing warranty does not apply to Anritsu connectors that have failed due to normal wear. Also, the warranty does not apply to defects resulting from improper or inadequate maintenance, unauthorized modification or misuse, or operation outside of the environmental specifications of the product. No other warranty is expressed or implied, and the remedies provided herein are the Buyer's sole and exclusive remedies.

DISCLAIMER OF WARRANTY

DISCLAIMER OF WARRANTIES. TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, ANRITSU COMPANY AND ITS SUPPLIERS DISCLAIM ALL WARRANTIES, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WITH REGARD TO THE PRODUCT. THE USER ASSUMES THE ENTIRE RISK OF USING THE PRODUCT. ANY LIABILITY OF PROVIDER OR MANUFACTURER WILL BE LIMITED EXCLUSIVELY TO PRODUCT REPLACEMENT.

NO LIABILITY FOR CONSEQUENTIAL DAMAGES. TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, IN NO EVENT SHALL ANRITSU COMPANY OR ITS SUPPLIERS BE LIABLE FOR ANY SPECIAL, INCIDENTAL, INDIRECT, OR CONSEQUENTIAL DAMAGES WHATSOEVER (INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOSS OF BUSINESS PROFITS, BUSINESS INTERRUPTION, LOSS OF BUSINESS INFORMATION, OR ANY OTHER PECUNIARY LOSS) ARISING OUT OF THE USE OF OR INABILITY TO USE THE PRODUCT, EVEN IF ANRITSU COMPANY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. BECAUSE SOME STATES AND JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF LIABILITY FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES, THE ABOVE LIMITATION MAY NOT APPLY TO YOU.

TRADEMARK ACKNOWLEDGMENTS

Windows, Windows 7, Windows XP, Windows Vista, Windows 2000, Microsoft Excel and Microsoft Visual Basic are all registered trademarks of Microsoft Corporation.

Acrobat Reader is a registered trademark of Adobe Corporation.

NOTICE

Anritsu Company has prepared this manual for use by Anritsu Company personnel and customers as a guide for the proper installation, operation and maintenance of Anritsu Company equipment and computer programs. The drawings, specifications, and information contained herein are the property of Anritsu Company, and any unauthorized use or disclosure of these drawings, specifications, and information is prohibited; they shall not be reproduced, copied, or used in whole or in part as the basis for manufacture or sale of the equipment or software programs without the prior written consent of Anritsu Company.

UPDATES

Updates, if any, can be downloaded from the Documents area of the Anritsu Website at:
http://www.anritsu.com

For the latest service and sales contact information in your area, please visit:
http://www.anritsu.com/contact.asp

ANRITSU COMPANY SOFTWARE LICENSE AGREEMENT

IMPORTANT - READ CAREFULLY BEFORE INSTALLING THE SOFTWARE. BY INSTALLING THIS SOFTWARE, YOU ARE AGREEING TO BE BOUND BY THE TERMS OF THIS AGREEMENT. THIS IS A LEGAL AGREEMENT BETWEEN YOURSELF, AND YOUR EMPLOYER, IF APPLICABLE, AND ANRITSU COMPANY ("ACUS").

SOFTWARE LICENSE AGREEMENT

1. GRANT OF LICENSE. This License Agreement permits you to use enclosed software program (the "Software") on a computer. The SOFTWARE is in use on a computer when it is loaded into temporary memory (i.e. RAM), installed into permanent memory (i.e. hard disk, CD-ROM, or other storage device), or installed/ loaded into any appropriate ACUS product. All rights not expressly granted are reserved to ACUS. This Grant of License is not subject to transfer or assignment by Licensee.

2. DISTRIBUTION OF SOFTWARE. You may make copies of the SOFTWARE as you wish; give exact copies of the original SOFTWARE to anyone; and distribute the SOFTWARE in its unmodified form via electronic means. You may not charge any fees for the copy or use of the SOFTWARE itself. You must not represent in any way that you are selling the SOFTWARE itself. Your distribution of the SOFTWARE will not entitle you to any compensation from ACUS. You must distribute a copy of this SOFTWARE LICENSE AGREEMENT with any copy of the SOFTWARE and anyone to whom you distribute the SOFTWARE is subject to this SOFTWARE LICENSE AGREEMENT.

3. OTHER RESTRICTIONS. You may not reverse engineer, decompile, or disassemble the SOFTWARE, nor may you publish the SOFTWARE on the internet, or load the SOFTWARE onto your company's network.

4. NO WARRANTY. ACUS EXPRESSLY DISCLAIMS ANY WARRANTY FOR THE SOFTWARE. THE SOFTWARE AND ANY RELATED DOCUMENTATION IS PROVIDED 'AS IS' WITHOUT WARRANTY OF ANY KIND. ACUS DOES NOT WARRANT THAT THE SOFTWARE WILL RUN PROPERLY ON ALL HARDWARE, THAT THE SOFTWARE WILL MEET LICENSEES REQUIREMENTS, OR THAT ALL SOFTWARE ERRORS WILL BE CORRECTED. THE WARRANTIES ABOVE ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, WHETHER EXPRESSED OR IMPLIED, INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. ACUS SHALL NOT BE LIABLE FOR DIRECT, INDIRECT, INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES, OR DAMAGES FOR LOSS OF PROFITS, REVENUE, DATA, OR USE, INCURRED BY licensee, REGARDLESS OF WHETHER IN TORT OR CONTRACT, AND REGARDLESS OF WHETHER LICENSEE HAS ADVISED ACUS OF THE POSSIBILITY OF SUCH LOSSES.

5. EXPORT CONTROL. Licensee shall not export or re-export software technical data, goods, or information licensed by ACUS directly or through others, to the proscribed countries, or foreign nationals of those countries, and/or denied parties, in violation of any applicable U.S., U.K., Danish, or Japanese export control laws and regulations or any other applicable export control laws promulgated and administered by the government of any country having jurisdiction over the parties or transaction.

6. TERMINATION. Any breach of the terms or conditions of this Grant of License will result in termination of the license granted hereunder. Upon termination of the license granted hereunder, Licensee shall return all copies of the software to ACUS, or certify their destruction in writing.

7. GOVERNING LAW. This agreement, and all of the rights hereunder, shall be interpreted and determined by the laws of the State of California, and all disputes shall be subject to the jurisdiction of the Courts within the State of California.

Notes On Export Management

This product and its manuals may require an Export License or approval by the government of the product country of origin for re-export from your country.

Before you export this product or any of its manuals, please contact Anritsu Company to confirm whether or not these items are export-controlled.

When disposing of export-controlled items, the products and manuals need to be broken or shredded to such a degree that they cannot be unlawfully used for military purposes.

CE Conformity Marking

Anritsu affixes the CE Conformity marking onto its conforming products in accordance with Council Directives of The Council Of The European Communities in order to indicate that these products conform to the EMC and LVD directive of the European Union (EU).

$$C \in$$

Anritsu affixes the C-tick marking onto its conforming products in accordance with the electromagnetic compliance regulations of Australia and New Zealand in order to indicate that these products conform to the EMC regulations of Australia and New Zealand.

N274

European Parliament and Council Directive 2002/96/EC

Equipment marked with the Crossed-out Wheelie Bin symbol complies with the European Parliament and Council Directive 2002/96/EC (the "WEEE Directive") in the European Union.

For Products placed on the EU market after August 13, 2005, please contact your local Anritsu representative at the end of the product's useful life to arrange disposal in accordance with your initial contract and the local law.

Chinese RoHS Compliance Statements
MA24105A, MA24106A, MA24108A, MA24118A, MA24126A, MA24208A, MA24218A,

产品中有毒有害物质或元素的名称及含量 | For Chinese Customers Only NLNB

部件名称	有毒有害物质或元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 [Cr(VI)]	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
印刷线路板 (PCA)	×	○	×	×	○	○
机壳、支架 (Chassis)	×	○	×	×	○	○
其他（电缆、风扇、连接器等） (Appended goods)	×	○	×	×	○	○

○：表示该有毒有害物质在该部件所有均质材料中的含量均在 SJ/T11363-2006 标准规定的限量要求以下。

×：表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 SJ/T11363-2006 标准规定的限量要求。

环保使用期限

这个标记是根据 2006/2/28 公布的「电子信息产品污染控制管理办法」以及 SJ/T 11364-2006「电子信息产品污染控制标识要求」的规定，适用于在中国销售的电子信息产品的环保使用期限。仅限于在遵守该产品的安全规范及使用注意事项的基础上，从生产日起算的该年限内，不会因产品所含有害物质的泄漏或突发性变异，而对环境污染，人身及财产产生深刻地影响。

注）生产日期标于产品序号的前四码(如 S/N 0728XXXX 为 07 年第 28 周生产)。

PowerXpert™

1. Introduction

This Quick Start Guide provides information on installing the Anritsu PowerXpert™ application and the MA24105A, MA24106A, MA24108A, MA24118A, MA24126A, MA24208A, and MA24218A power sensor drivers. Included are instructions for making basic power measurements. It contains the following sections:

- "CD-ROM Contents"
- "Hardware and Software Requirements" on page 2
- "Installing PowerXpert" on page 3
- "Basic Power Measurement" on page 7

2. CD-ROM Contents

The PowerXpert CD-ROM contains the following programs, documents and accessories, all of which are accessible from the CD-ROM startup page (Startup.htm):

PowerXpert Installation Program

Installs the user interface and drivers to control the power sensor via USB connection to a PC.

Microsoft® .NET Framework Version 4.0 Installation Program

Available for installation if .NET Framework does not already exist on your PC. The PowerXpert installation program will detect whether or not this is already on your PC and will provide a message if it is not installed. PowerXpert needs .Net Framework 4.0. This framework version is included in both Minimal & Full version of installers. The difference between minimal & full is that the minimal installer uses a light weight web installer of .NET 4.0; therefore, PowerXpert requires the internet connection in order to make the installation. Full installer uses complete .NET 4.0 setup and does not need an internet connection to make the installation.

User Guide

The User Guide contains instructions for installation, operation and operational testing for all the USB power sensors and the PowerXpert application.

Product Literature

Links are provided to each power sensor product brochure, which contains complete operational specifications and features for your power sensor.

Measurement Uncertainty Calculator

Microsoft Excel® tool for calculating power uncertainty. It contains two tabs: one that provides measurement uncertainty for each sensor (selectable from a drop-down menu), and another tab that provides additional uncertainty components and calculated values for the MA24105A Peak Power Sensor.

Sample C# Program Folder

Provides a link to a folder containing a sample application (DemoApp.exe) written in Microsoft C#. This application and its code are provided as an example so the user can develop custom applications for use with the power sensor. Instructions are included in Appendix A of the User Guide.

3.   Hardware and Software Requirements

Please make sure that the following minimum requirements are met for installing and using the software:

- Intel® Pentium® III with 1 GB RAM or Intel® Pentium® IV with 512 MB RAM, or equivalent
  (Intel® Pentium® IV with 1 GB RAM recommended; a dual core processor with 2 GB RAM is recommended for use with the multi-sensor feature.)

- All versions of Microsoft® Windows 8.1, Windows 8, Windows 7, and Windows XP

- 100 MB hard-disk free space

- Display resolution 1024 × 768

- USB 2.0 high speed interface

- CD-ROM drive

4.   Installing PowerXpert

Both the PowerXpert application and power sensor drivers must be installed before using the power sensor. Follow the steps below as a guide for proper installation.

1. Insert the installation CD in the drive of your computer. If the menu does not open automatically in your web browser, open the file named Startup.htm located on the CD.

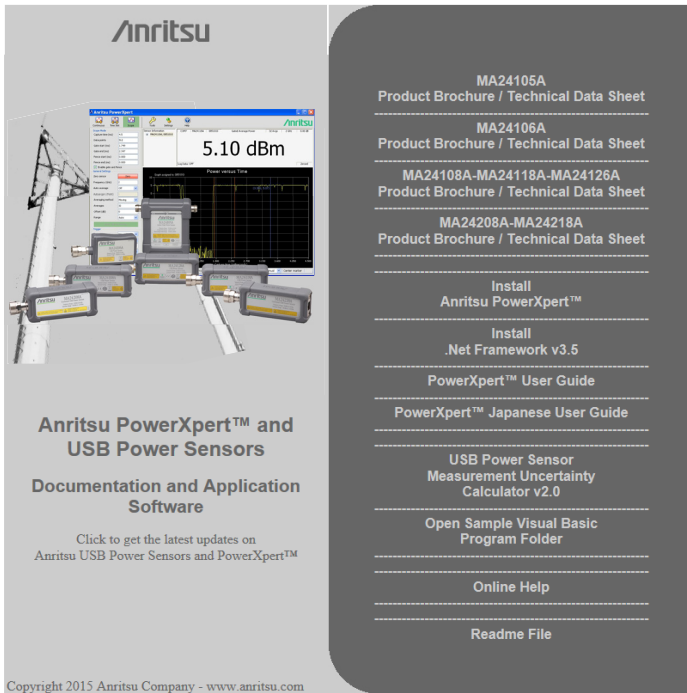**Figure 1.**   Anritsu PowerXpert CD Menu

2. Click **Install Anritsu PowerXpert**™ and select **Run** to start the installation.
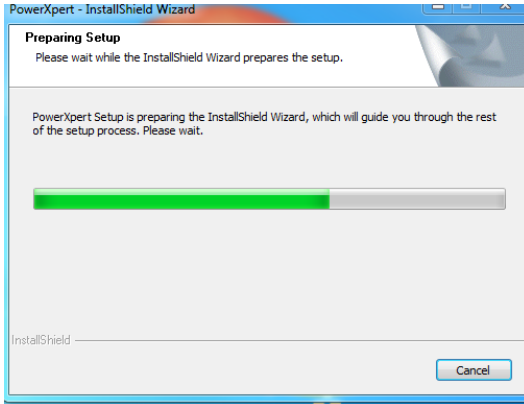
Figure 2. Anritsu PowerXpert Installation

3. Click **Next** in the following screen to begin the installation process. Select Install PowerXpert.
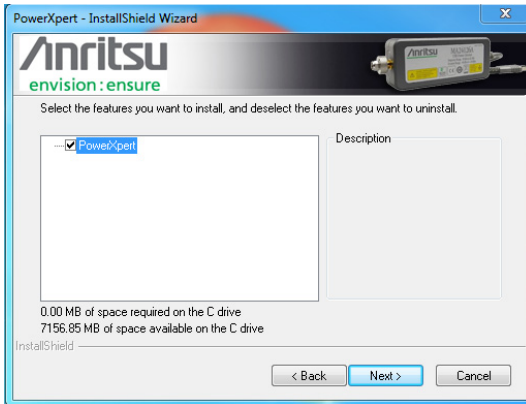
Figure 3. Installing Anritsu PowerXpert
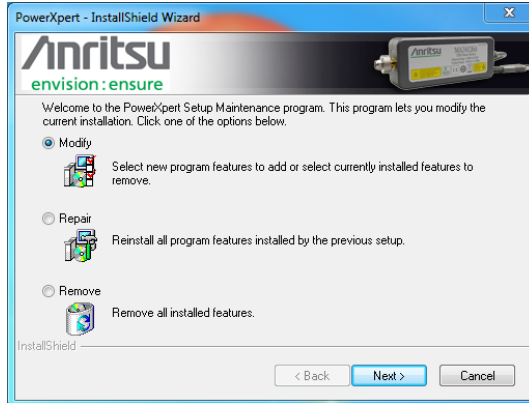
4. Select Modify, then select Next.

Figure 4.   Installing Anritsu PowerXpert Application

5. Read the license agreement and select "I accept the terms of the license agreement" to continue, then click **Next**.
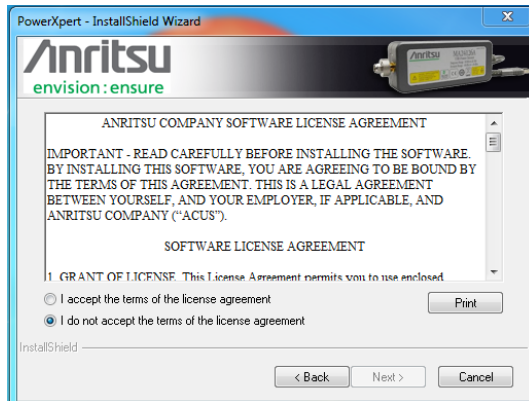
Figure 5.   PowerXpert License

6. Setup will install PowerXpert in the following folder:
C:\Program Files\Anritsu\PowerXpert. Refer to Figure 6.

7. To install to this Folder click next. To install to a different folder,
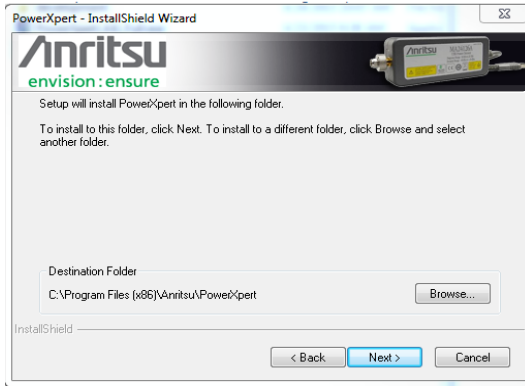click Browse and select another folder.

Figure 6. Destination Folder

8. Select **Finish** to complete the software installation. The software
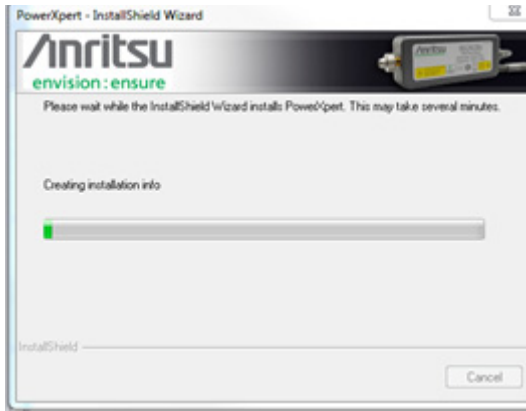installs to the selected location.

Figure 7. Installing Anritsu PowerXpert Application

9. The next screen Figure 8 indicates the installation is now complete.
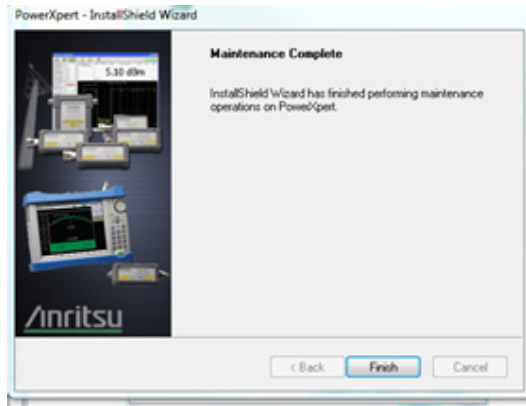

Figure 8.   Anritsu PowerXpert Installation Complete

5. Basic Power Measurement

1. Connect the sensor to a computer as shown in Figure 9 on page 8.

2. Open the Anritsu PowerXpert application.

3. Zero the power sensor by clicking the **Zero** sensor button in PowerXpert.

Warning	To prevent connector damage and inaccurate measurements, inspect and clean the sensor RF connector and the RF connector to which it will be attached.
	Do not turn the sensor body when mating the connectors.
	Use a properly calibrated torque wrench to tighten the connection. Do not over-torque.

4. Connect the RF source to the RF IN port of the power sensor.

5. Read the power measurement from the Anritsu PowerXpert application window (power readings are continuous with the default settings).
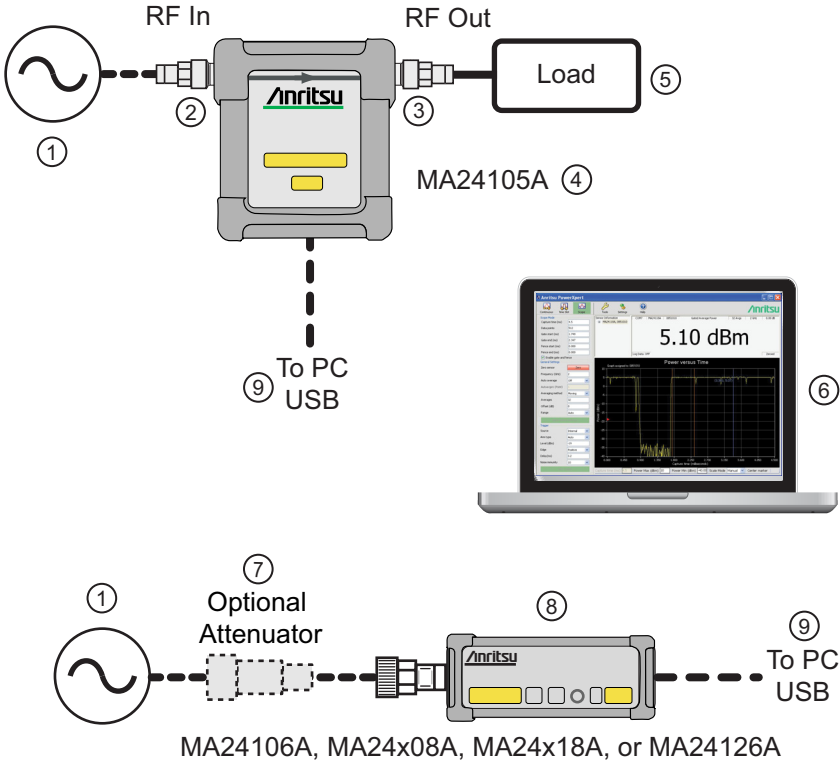
Index	Description
1	RF Source
2	RF In
3	RF Out
4	MA24105A
5	Load
6	PC with Anritsu PowerXpert Application
7	Optional Attenuator
8	MA24106A, MA24x08A, MA24x18A, or MA24126A
9	To PC USB input

Figure 9. Basic Measurement Setup

Anritsu

|||||||||||||||||||||||||||||||| ||||||||||||
10585-00021   F