

EDGE 4X™ Evaluation Kit

User Guide



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5,453,653; 5,616,980; 5,714,833; 111597; 5,640,063; 6,247,338; 6,244,076;
6,747,391; 6,661,153; 69838991.3; 6,384,515; 7,119,477; 7,075,211;
69932359.5; 1186063; 7,211,929; 69941195.5; 1577961; 4813708; 6,879,085;
6,979,936; 7,439,652; 7061158 ;1800356; 1800356; 1800356; 2007-533057
(pending); 2011-093431 (pending); 7,876,509; 10-2007-7009928 (pending);
200780019448.6 ; 7713361.9 (pending); 12/294,926 (pending);
GB2008000004178 (pending); GB2009000003796 (pending); 12/398,216
(pending); GB2446428; 12/517,261 (pending); 08702695.1 (pending); 10-2009-
7017629 (pending); 12/524,164 (pending); 12/581,194 (pending)

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Introduction

Revision History

The revision history shows the last four revisions to this document. The last revision is shown first.

Revision	Release date	Details
01	May 2015	First draft
A	July 2018	Added Linear Stage Specifications section (EC18000056)

Introduction

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Introduction

The EDGE 4X™ Evaluation Kit provides a pre-assembled motion module. The motion module includes:

- EDGE 4X Stage
- EDGE 4X Controller/Driver
- Power supply and communication card

The evaluation kit includes the Nanomotion XCD Commander for communication with the Controller/Driver. The user can operate the stage in open loop using the XCD Commander, or write programs in the Nanomotion XMS script for operation in closed loop.

Related Products

Product	Part Number
EDGE 4X	EDG4130000-00
EDGE 4X Controller/Driver	S833150100-00

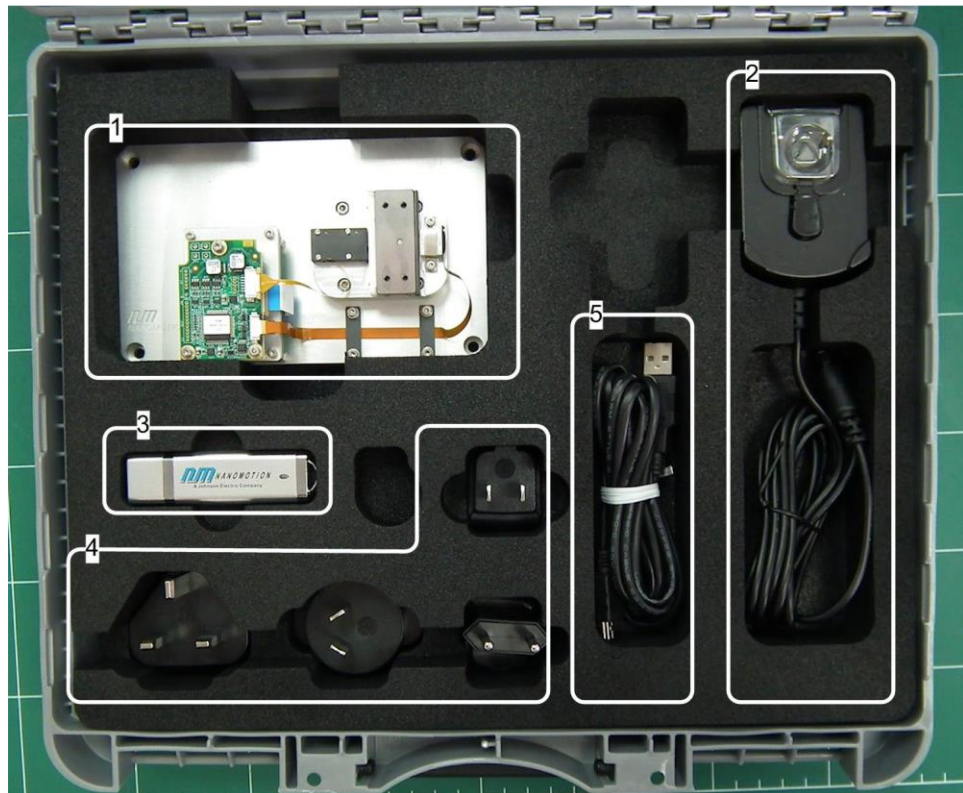
Related Documentation

Document	Document Number
EDGE 4X Controller/Driver User Manual	S833458000-00
XCD FW ver 1.5.0.7 User Manual	XCD0458002-00

Overview of the EDGE 4X Evaluation Kit**Overview of the EDGE 4X Evaluation Kit**

The EDGE 4X Evaluation Kit provides the ability to operate and evaluate the Nanomotion EDGE 4X Controller/Driver and motor in a closed or open loop. The Evaluation Kit consists of the motor assembled on a Motion Module, an XCD driver board, and a communication board.

The EDGE 4X Evaluation kit is supplied in a hard plastic case containing all physical equipment and software required to operate the system.



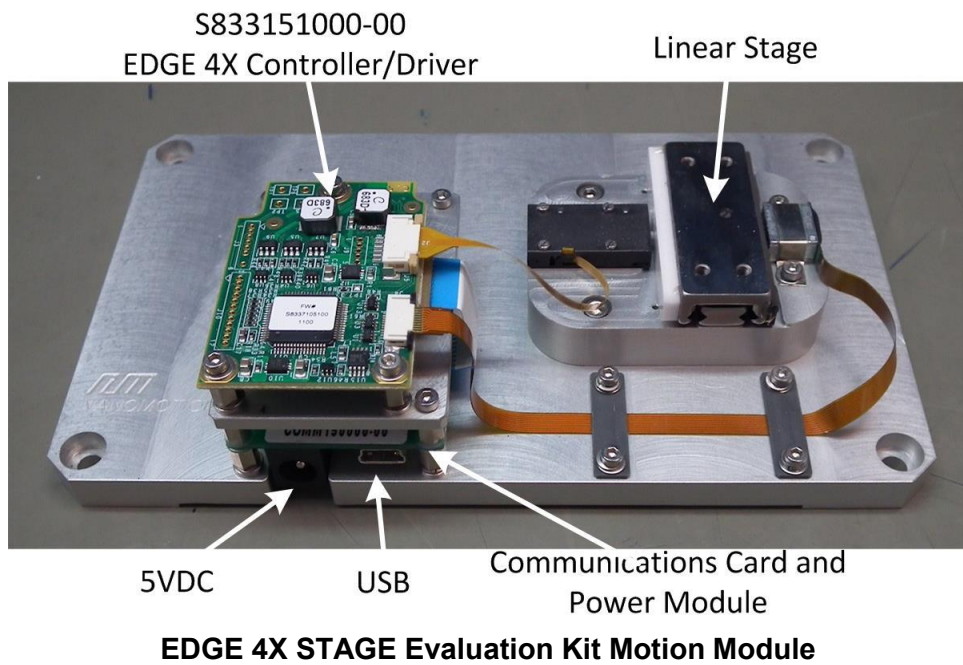
EDGE 4X STAGE Evaluation Kit Contents

EDGE 4X STAGE Evaluation Kit contents

1	Motion Module – EDGE 4X Stage with Power Supply and Driver
2	5 VDC power supply – includes international adapters for 110/220 VAC power
3	Disk-on-key <ul style="list-style-type: none"> • XCD Commander Version 1.5 installer • XCD Software Version 1.5.0.7 User Manual • S833458000-00 EDGE 4X Controller/Driver UM
4	International mains power adapters
5	USB cable - 1.5m length

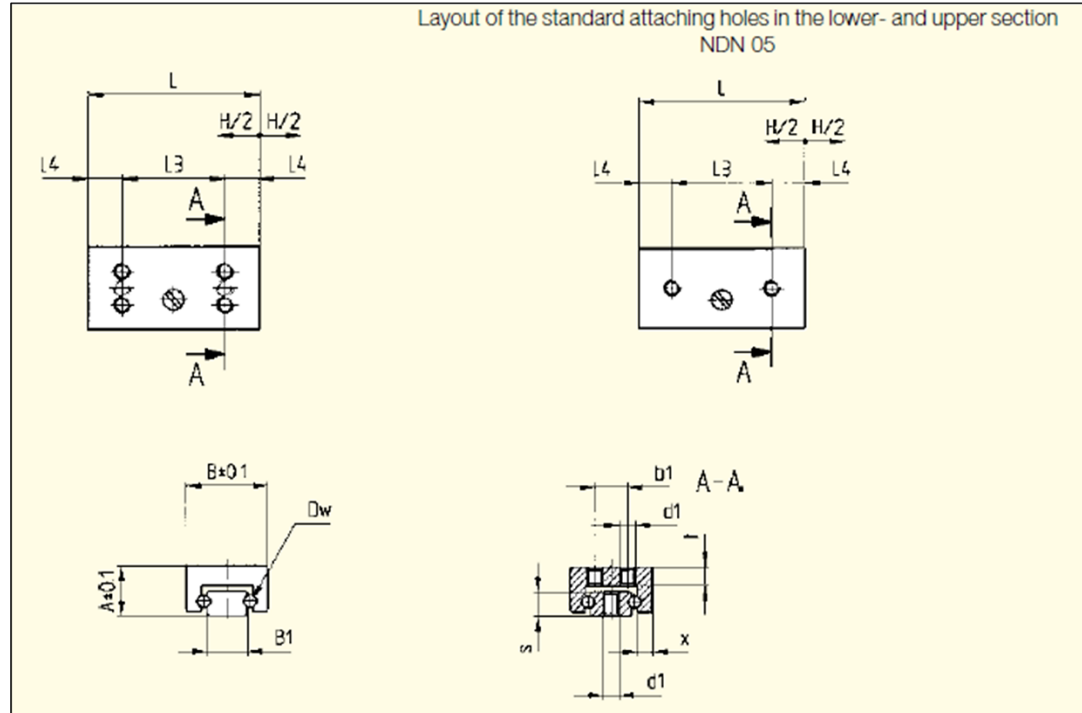
EDGE 4X STAGE Evaluation Kit Motion Module

The Motion Module is a complete motion control system assembled on a rigid jig. The figure below shows the Evaluation Kit Motion Module and its components.



Linear Stage Specifications

Linear Stage Manufacturer: SCHNEEBERGER LINEAR TECHNOLOGY



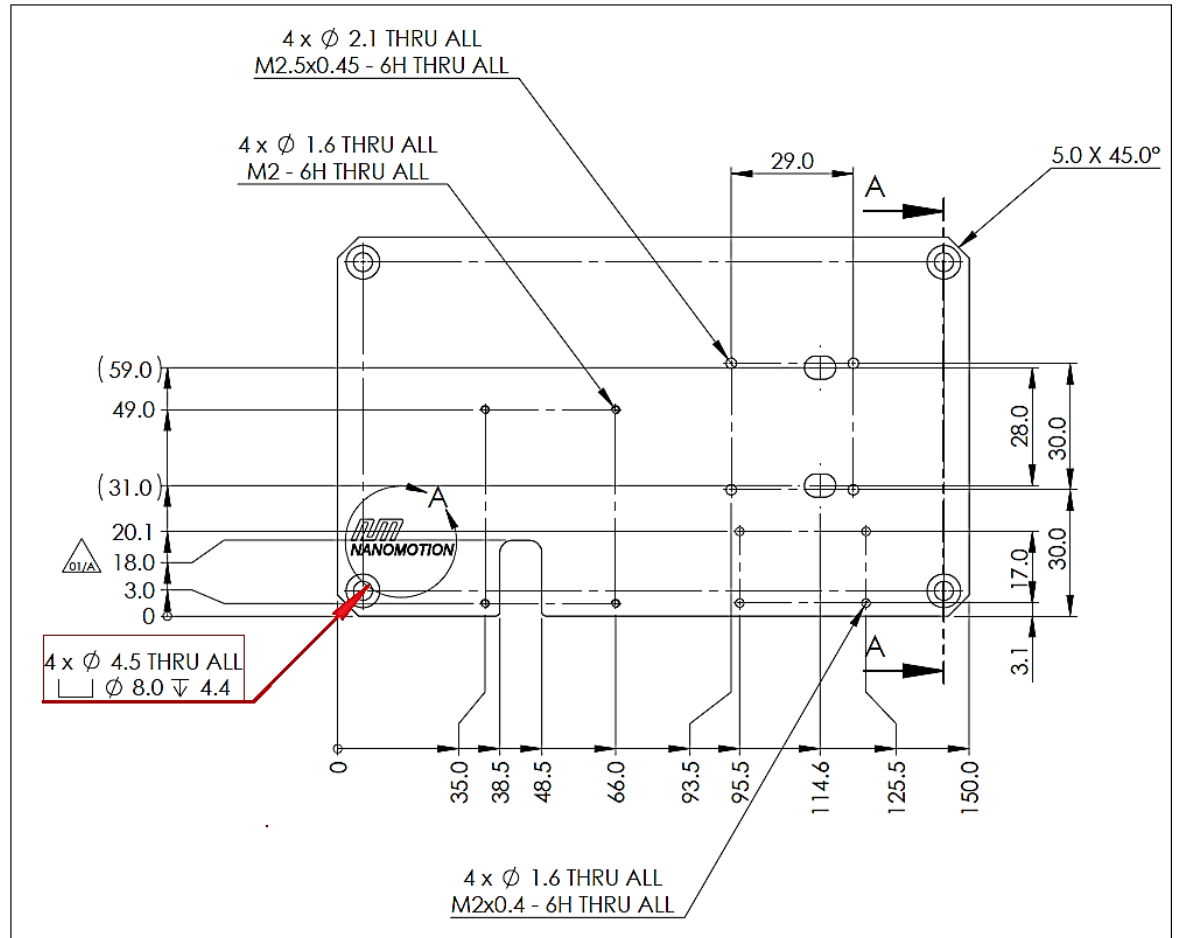
LINEAR STAGE Layout

Linear Stage Specifications

Order No.	Dimensions (mm)								
	A	B	B ₁	D _w	H	L	L ₃	L ₄	b ₁
NDN 2-40.30	8	15	8	2.5	30	40	1 x 28	6	7
	d ₁	s	t	x	*C in N	M _L in Ncm	M _Q in Ncm	Weight in g	
	M 2.5	4.5	2.5	2.7	170	50	65	36	

Base Drilled Holes Parameters

The Base contains drilled and counterbored holes for a customer to interface with. The parameters of the holes are specified in the drawing below:



Base: Drilled Holes Parameters

Evaluating EDGE 4X STAGE Operations

The XCD Commander version 1.5.0.7 provides a means of running sample motion control scripts on the motion module. New scripts (*.xms) can be written to test application specific operations.

1. Insert the Evaluation Kit Disc-on-key into a USB connection on the computer.
2. Locate the XCD Software (...\\XCD_1.5\\Nano 1.5.0.7\\InstallationDisk\\) and copy the folder to the computer.
3. In the folder **InstallationDisk** double click on setup.exe to install the XCD Commander.

When the installer finishes it will launch XCD Commander. Because there is no Driver connected at this time a **No Communication Warning** is displayed. XCD Commander must be installed before connecting the Motion Module.

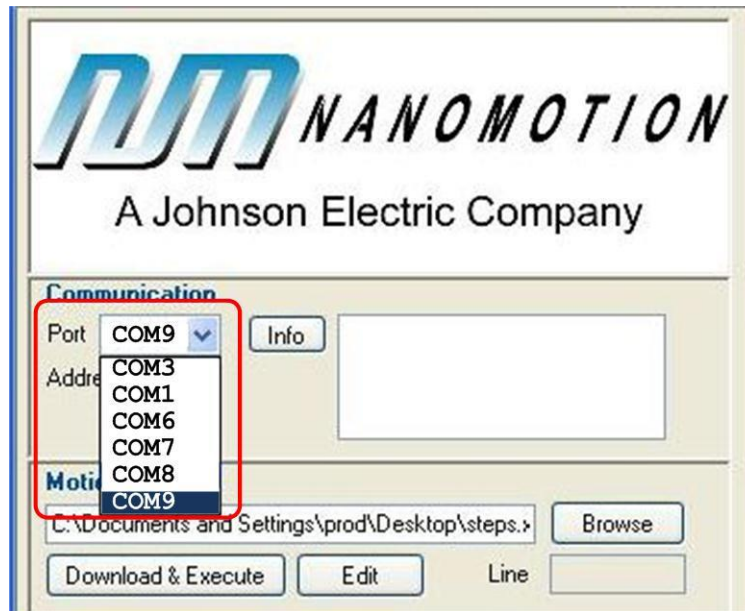
4. Click OK and the XCD Commander window opens. Close the XCD Commander.
5. Place the Motion Module on a flat stable surface.
6. Connect the communication card to a computer with the USB cable. There are two options for connecting.
 - Connecting to a computer with the XCD Commander software, use a communications adapter card.
 - Connecting directly to the end user's Host, direct connection is possible.
7. Connect the communication board to the external +5 VDC power supply.



The external power supply has a set of 110/220 VAC international adapters for connection to mains.

8. Launch XCD Commander.
9. In the Communication pane open the **Port** drop-down menu.
10. Locate a sequence of four consecutive numbers and select the fourth number in the sequence.

The dropdown menu displays many numbers, but only four will be consecutive. In the following figure the four number sequence is COM6, COM7, COM8, and COM9. Select COM9.

**Four Number Sequence in Port Dropdown Menu**

11. In the **Address** field select **A4**.
12. To confirm successful communication click **Info**.

The **Info** field displays the Controller and application information:

- Controller version and build
- Controller serial number
- Code
- Controller/Driver type and mode



Ensure that the Controller version is the same as the XCD Commander version shown in the window header.

For example, Controller version 1.5.0.7 and XCD Commander 1.4

13. The XCD Commander application is ready for use.

Refer to the **XCD Software 1.5.0.7 User Manual** for additional setup and detailed operating instructions. The manual contains:

- Overview of Nanomotion motor control
- XCD Commander installation, setup, and operating instructions
- XCD Motion Software syntax, commands, parameters, and values
- Communication Protocol description with syntax and command tables



The Controller/Driver supplied with the evaluation kit has a configuration file already programmed in Flash memory. If the configuration file is accidentally deleted copy the file .../Disk-on-Key/Scripts/Config_file.S19 to Flash memory.

