

This training course provides service technician training for the Altair-PJ2 series.



This section provides an overview of the machine, and the options that can be installed.

What Models are there in the Series?						col
		_				
<ul> <li>These are DLP projectors.</li> </ul>						
Y051 and Y053 are desk-edge (DE) models, Y054						
and Y	)56 are s	hort-thro	w (ST) m	odels		
Model Name	Model	Brightness	Resolution	Network	Auto Focus	
PJX3351N	Y051	3500 lm	XGA	Yes	Yes	
PJWX3351N	Y053	3600 lm	WXGA	Yes	Yes	
PJX4241N	Y054	3300 lm	XGA	Yes	No	
PJWX4241N	Y056	3300 lm	WXGA	Yes	No	

Basic Altair-PJ2 Desk edge models (without network functions (dx, dw)) will not be launched as demand is covered by other models (Polaris, Mizar).



Main Specifications - 1			
	Desk Edge	e Models	
	Altair-PJ2 dxn (Y051)	Altair-PJ2 dwn (Y053)	
Туре	DL	P	
Brightness	Y051: 3500lm, 1	Y053: 3600lm	
Projection size (inch)	30-200	40-240	
Projection distance	Y051: 0.68 to 7.20 m (2.22 to 23.61 feet) Y053: 0.77 to 7.33 m (2.53 to 24.06 feet)		
Lamp type	High-pressure mercury lamp (Standard mode: 250 W)		
Lamp life (Eco)	3500 (5000)		
Resolution	XGA	WXGA	
Focus	Auto		
Dimensions ( $W \times D \times H$ )	297 × 235 × 100		
Weight	3.1 kg (6.9 lbs)		
Max. Power Consumption	334W (Standard: 316)	N, Eco Mode: 209 W)	
Speaker	10W	x 1	
Wired LAN	Ye	S	
Wireless LAN	Ye	S	
PJLink	Ye	S	
@Remote	No	)	
Miracast	Ye	S	
USB	Service Use, PC-Fre	e Presentation Use	
HDMI	Ye	S	
PointBlank Dongle Connector	Ye	s	

Previous model (Altair PJ1)

Brightness was 3000lm

Lamp was 230 W

Max power consumption was 300W

@Remote was supported

Additional USB port: Users can use this to display JPEG or MPEG2 files without PC or network connection.

LAN: LAN can be used for PJLink, Web Image Monitor, QuickProjection, Miracast. Users can also use the LAN to project files that are stored on a PC on the network.

To enable projection of a file from a PC over a network, a network utility can be downloaded to the PC or installed from the CD that comes with the projector. No lengthy installation procedure is required. However, installation is required to enable sound on iOS (Macintosh); the customer has to do this.

USB adapters for PC: To register a computer USB adapter, connect the projector to the computer, and then insert the adapter into the computer. Have a computer USB adapter at hand, ready for installation. Do not register computer USB adapters for multiple projectors at the same time. The computer USB adapter might not be registered correctly.

Main Specifica	itions - 2	R	
	Short Th	row Models	
	Altair-PJ2 sx (Y054)	Altair-PJ2 swn (Y056)	
ype		DLP	
rightness	3300lm		
ojection size (inch)	50-120	60-140	
rojection distance	Y054: 0.59 to 1.49 m (1.49 to 4.88 feet) Y056: 0.61 to 1.48 m (2.00 to 4.85 feet)		
amp type	High-pressure mercury lamp (Standard mode: 250 W)		
amp life (Eco)	3500 (5000)		
solution	XGA	WXGA	
ocus	Manual		
mensions (W × D × H)	297 × 235 × 100		
eight	3.1 kg (6.9 lbs)	3.1 kg (6.9 lbs)	
ax. Power Consumption	334W (Standard: 316 W, Eco Mode: 209 W)		
beaker	10W x 1		
ired LAN	Yes		
ireless LAN	No	Yes	
JLink	Yes		
Remote	No		
iracast	No	Yes	
SB	Service Use Only	ServiceUse, PC-Free PresentationUse	
DMI		Yes	
ointBlank Dongle Connector		Yes	

Previous model (Altair PJ1)

Brightness was 3000lm

Max power consumption was 325W

@Remote was supported

Additional USB port: Users can use this to display JPEG or MPEG2 files without PC or network connection.

LAN: LAN can be used for PJLink, Web Image Monitor, QuickProjection, Miracast. Users can also use the LAN to project files that are stored on a PC on the network.

To enable projection of a file from a PC over a network, a network utility can be downloaded to the PC or installed from the CD that comes with the projector. No lengthy installation procedure is required. However, installation is required to enable sound on iOS (Macintosh); the customer has to do this.

This product can be installed by users	
<ul> <li>This product can be installed by users.</li> <li>The DE and ST models are designed for table-top ceiling mount, and wall mount use.</li> <li>This product is designed for user maintenance. Regular on-site maintenance is not needed.</li> </ul>	),
<ul> <li>There is no display panel, but LEDs show the symptoms for troubleshooting (blinking/lit, number times the LEDs blink, etc).</li> <li>A service mode is available.</li> </ul>	r of

The service manual contains notes on installation.

		A	В
Y051	30~200 inches	68~720 cm (2.22~23.61 feet)	4~24 cm (1~9 inches)
Y053	40~240 inches	77~733 cm (2.53~24.06 feet)	3~18 cm (1~7 inches)
Y054	50~120 inches	59~149 cm (1.94~4.88 feet)	6~14 cm (2~6 inches)
Y056	60~140 inches	61~148 cm (2~4.85 feet)	5~11 cm (2~4 inches)



These next few slides explain the improvements since the previous model (Altair-PJ1).



These next few slides explain the improvements since the previous model (Altair-PJ1).







Details of the keystone adjustments are in the user guide.

Other Selling Points	OH change.
Wide zoom range	
<ul> <li>Suitable for many types of room</li> </ul>	
Quick power on	
<ul> <li>Power automatically comes on when an interface cable is connected to the projector.</li> </ul>	5
<ul> <li>No need to press the power button</li> </ul>	
3D contents projection	
<ul> <li>Can connect a Blue-ray / DVD player to the projector with HDMI cable without a special converter.</li> </ul>	ı
<ul> <li>Need the 3D glasses option</li> </ul>	
Auto power on/off	
<ul> <li>If you set the time and the day of the week, the machine power will turn power on and off automatically</li> </ul>	14

Network Fe	eatures	RICOH imagine. change.
Easy network set	etup	
<ul> <li>For network pro- network utility. vebsite to your</li> <li>CD, type in the images.</li> </ul>	bjection, Altair-PJ I Just download the PC or execute the PIN code, and you	has an installation-free file from the Ricoh e program on the attached u are ready to project
[Step 1]	[Step 2]	[Step 3]
Download network utility from Ricoh website	≻Make wireless network connection on the PC	> Type in the pass code

@Remote capability and projection server functions have been removed from this model.













For more about DLP link: http://www.dlp.com/projector/dlp-innovations/dlp-link.aspx The 3D glasses type 2 include support for 96Hz.



## PJ Interactive Kit Type 2

The difference from type 1 is that type 2 supports the remote sharing license. Type 1 is already discontinued.

The user installs the interactive kit. However, the installation procedure is included in the 'Options Installation' section of the service manual.







The characteristics of the Interactive Tool Kit are as follows.

- 1.It allows you to interact on any surface
- 2.It requires no calibration
- 3. The pen works from a distance or on the projected image surface

It allows flexible installation and interaction with large images











Optical receiver: For the remote controller







- USB port: For connecting a USB memory device or USB device cable. Accepts JPEG and MPEG2 file formats.
- HDMI port: For connecting an HDMI (High-Definition Multimedia Interface) cable.
- LAN port: For connecting an Ethernet cable.
- Computer In port (Y/Pb/Pr): For inputting RGB signals from a computer or component image signals (Y/Pb/Pr) from a video player.
- Video In port: For inputting image signals from a video player.
- Audio In port: For inputting audio signals from a computer or video player.
- Control port (USB mini-B): For connecting to a computer. Used when updating the firmware (main board only).
- AC In socket: For connecting the power cord provided with the projector.



This is a general description. The Altair-PJ1 does not look exactly like this. See later in this presentation for the components of the Altair-PJ1.

Lamp: Light source

UV-IR Filter: Lets visible light through (wavelengths between 380~780nm) and prevents UV and IR damage to other optical parts.

CW (Color wheel): The wheel has a red segment, a green segment, and a blue segment. The wheel rotates to provide red, green, and blue light (the color of the output beam changes from red, to green to blue)

Integrating Rod: Gives the light a uniform luminous flux.

L3: Condensing lens. Condenses divergent light.

L2: Condensing lens. Works with L3 to condense divergent light.

M1: Mirror 1. Changes the light direction.

M2: Mirror 2. Changes the light direction.

Relay L1: Condenses and magnifies divergent light before it goes to the DMD.

DMD Chip: Contains micro mirrors to generate the image

Projection Lens (WT41 in the diagram): Projects the image onto the screen.



The mirrors can switch over every 15 microseconds, so moving images can be projected.



Auto Focus module is assembled with optics engine unit. It does not replace alone.












This section explains the basic points about servicing the machine.







Service Mode features

Service status display

Keystone calibration

Sub contrast adjustment

Color wheel index delay adjustment

Fan control

Test pattern projection





This section shows the main points about replacing parts, and how to calibrate the machine after installing new parts.



See the service manual for details of the procedures. The next few slides will cover the main points.

Adjustments	Requir	ed after R	eplacement	RICO magine. cha
	Keystone	Sub Contrast	Color Wheel Index Delay	1
Main Board	Yes	No	Yes	1
Operation Panel Board	No	No	No	1
Optical Engine	Yes	No	Yes	1
<ul> <li>There are back replace the matching backup, then y the table above</li> </ul>	kup and rea ain board. I you have to e.	store procedur f they don't wo do the manua	es for the data, when yo rk and you don't have a I calibration as mention	ou good ed in
<ul> <li>The adjustment</li> <li>Replacement a</li> <li>Sub Contrast is</li> </ul>	ts are in f and Adjustr s already	the service n ment - Electrica adjusted in t	nanual. al Adjustment - Projecto the factory.	r Setup

## Keystone

When you project an image onto a surface at an angle (because the projector is not quite centered on the screen), the image will be larger at the top than at the bottom (in the case when the projector is on a table pointing up at the screen).

Modern projectors correct for this digitally, but calibration is needed.

Sub-contrast

Inputs from both computer interfaces must be calibrated.

VCOM, Gamma, Shading

These require the DPJ Adjustment Tool.





The EEPROM is a backup area to hold the old settings if the adjustments do not go well.



	Replacing the Main Board RICOL	ge.
•	<ul> <li>You must enter the current value of color wheel index delay after installing the new board.</li> <li>Make a note of the current value by displaying the Service status.</li> <li>How to view the service status: After the projector has entered the service mode, press the [AV Mute] and up buttons simultaneously</li> </ul>	
:	<ul> <li>Also you must do keystone calibration adjustment.</li> <li>These procedures are all explained in the following section of the service manual: <ul> <li>Replacement and Adjustment - Electrical Adjustment - Projector Setup</li> </ul> </li> </ul>	
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This is the same as the Altair-PJ1 and Soleil-PJ2.



This is the same as the Altair-PJ1 and Soleil-PJ2.



This is the same as the Altair-PJ1 and Soleil-PJ2.



This is the same as the Altair-PJ1 and Soleil-PJ2, except for the Service Status Tool and Error Log Tool, which are new.



This section explains the basic points about updating the firmware.



See the service manual for details.

Check the firmware release information how to get the most recent firmware.

<ul> <li>Unplug the projector power cord.</li> </ul>	
<ul> <li>Connect a USB cable to the control port, and to your computer.</li> </ul>	
<ul> <li>While holding down the Input and AV Mute buttons, plug in the power cord.</li> </ul>	
<ul> <li>Start Ricoh Projector FW Update Tool on your computer.</li> </ul>	
<ul> <li>Click [browse] and select the firmware data (*.img file).</li> </ul>	
<ul> <li>Click [Start Download].</li> </ul>	
<ul> <li>Do not attempt to operate the projector during the update process.</li> </ul>	66

See the service manual for details.



See the service manual for details.



For basic troubleshooting procedures, see the service manual.









The End