



Leica IMS500 HD Manual

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Safety regulations

Safety concept

This operating manual describes the special functions of the individual modules of the Leica IMS500 HD Systems Interactive Microscopy System and contains important instructions for their operational safety, maintenance, and accessories.

You can combine individual system articles with articles from external suppliers. Please read the user manual and the safety requirements of the supplier.

Before installing, operating or using the system, read the user manual. In particular, please observe all safety instructions.

To maintain the unit in its original condition and to ensure safe operation, the user must follow the instructions and warnings contained in the user manual.

Additional information about other instruments from Leica Microsystems Ltd. can be found online at

www.leica-microsystems.com.

The "Safety concept" booklet contains additional safety information regarding the service work, requirements and the handling of microscope, accessories and electrical accessories as well as general safety instructions.

Symbols used in this operating manual

Warning of a danger



This symbol indicates especially important information that must be read and complied with.

Failure to comply can cause the following:

- Hazards to personnel
- Functional disturbances or damaged instruments

Warning of hazardous electrical voltage



This symbol indicates especially important information that is mandatory to read and observe.

Failure to comply can cause the following:

- Hazards to personnel
- Functional disturbances or damaged instruments

Danger due to hot surface.



This symbol warns against touching accessible hot surfaces, e.g. those of light bulbs.

Important information



This symbol indicates additional information or explanations that intend to provide clarity.

Explanatory notes

- ▶ This symbol within the text points to additional information and explanations.

Important Notes

Description

The Leica IMS500 HD Systems meets today's state of the art of technology. Nevertheless, hazards may still arise during operation. The potential risks are described below.



Before installing, operating or using the instruments, it is required to read this user manual. In particular, please observe all safety instructions.

Contact address

*Leica Microsystems (Switzerland) Ltd.
Industry Division
Max Schmidheiny Strasse 201
CH-9435 Heerbrugg (Switzerland)*

User Manual

This user manual includes important instructions related to operating safety, maintenance and accessories.



Your Leica IMS500 HD Systems comes with a printed manual. Keep it in a safe place, and readily accessible to the user. User manuals and updates are also available for you to download and print from our web site at www.leica-microsystems.com

Produced for Leica Microsystems from
EBS

Euchner Büro- und Schulsysteme GmbH
Ernst-Leitz-Strasse 3
DE-63150 Heusenstamm

Accessories from third-party suppliers

You can combine individual system articles with articles from external suppliers. Please read the user manual and the safety requirements of the supplier.

Original condition

To maintain the unit in its original condition and to ensure safe operation, the user must follow the instructions and warnings contained in these user manuals.

Legal requirements

Adhere to general and local regulations relating to accident prevention and environmental protection.

EC Declaration of Conformity

Electrically operated accessories are constructed based on the state of the art of technology and are provided with an EC Declaration of Conformity.

Instructions on use

Intended use

The Leica IMS500 HD Interactive Microscopy System is for allowing the Teacher to select which microscope images will be shared with himself, other students, or a projector.



Position the Leica IMS500 HD System so that it can be disconnected from the power supply at any time.

The power cord must remain accessible at all times, because the power supply is foreseen as mains disconnecting device.

Place of use

Only use the system in closed, dust free rooms and between +10 °C and +40 °C. Protect the devices from oil, chemicals and extreme humidity. Never use electrical devices outdoors. Install electrical devices at least 10 cm from the wall and away from flammable substances. Avoid large temperature fluctuations, direct sunlight and vibrations.

Non-intended use

△ Using the system in any way contrary to the specifications in the user manual can lead to bodily harm and damage to objects. Doing so can impair the functions of the protective measures provided.



Only use one of the following power cords*. Don't unscrew any mechanical components unless expressly instructed to do so in the instructions.



The devices and accessories described in this operating manual have been tested for safety and potential hazards.



The responsible Leica affiliate must be consulted whenever the instrument is altered, modified or used in conjunction with non-Leica components that are outside of the content of this manual.



Unauthorized alterations to the device or non-compliant use shall void all rights to any warranty claims.

Transport

If at all possible, use the original packaging for shipping or transporting individual modules.

In order to prevent damage from vibrations, disassemble

all moving parts that (according to the user manual) can be assembled and disassembled by the customer and pack them separately.

Disposal

Disposal must comply with locally applicable laws and regulations.

Integration in third-party products

When installing Leica products into third-party products, the manufacturer of the complete system or its dealer is responsible for following all applicable safety instructions, laws and guidelines.

* Power Cords

10280636	Power cable, 2.5 m, Switzerland
10445661	Power cable, 2 m, USA
10445662	Power cable, 2 m, EURO
10445663	Power cable, 2 m-2.5 m, BS
10447346	Power cable, 2 m, Japan
10450012	Power cable, 2 m, Argentina type K
10450013	Power cable, 2m, Australia type F
10450014	Power cable, 2m, China type L
10450015	Power cable, 2m, Israel type I
10450016	Power cable, 2m, Italy type E
10450017	Power cable, 2 m, South Africa type D

Information for the person responsible for the instrument

Information for the person responsible for the instrument

- Ensure that the Leica IMS500 HD system is used only by qualified personnel.
- Ensure that this user manual is always available.
- Carry out regular inspections to make certain that the authorized users are adhering to safety requirements.
- When instructing new users, do so thoroughly and explain the meanings of the warning signs and messages.
- Assign individual responsibilities for starting, operating and servicing the instrument and monitor the observance of these responsibilities.
- Do not use the Leica IMS500 HD system unless it is in perfect condition.
- Inform your Leica representative or Leica Microsystems (Schweiz) AG, Industry Division, 9435 Heerbrugg, Switzerland, immediately of any product defect that could potentially cause injury or harm.
- If you use accessories made by third-party manufacturers with the Leica IMS500 HD system, be sure that each such manufacturer confirms that the combination is safe to use and observe the product's user manual.
- Modifications and maintenance of the Leica IMS500 HD system may only be performed by professionals expressly authorized by Leica.
- Only original Leica replacement parts may be used in servicing the product.
- After service work or technical modifications, the unit must be reconfigured with observance to our technical requirements.
- If the unit is modified or serviced by unauthorized persons, is improperly maintained (as long as maintenance was not carried out by us), or is handled improperly, Leica will not accept any liability.
- The electric installation in the building must conform to the national standard, e.g. current-operated ground leakage protection (fault-current protection) is suggested.

Care instructions

General instructions

- Protect the Leica IMS500 HD against damp, vapors, acids, alkalis, and corrosive substances. Do not store chemicals in the vicinity. Protect the Leica IMS500 HD System from oil and grease.
- It is advisable to enter a service agreement with Leica Service.
- Never use chemicals to clean colored surfaces or accessories with rubberized parts. This could damage the surfaces, and specimens could be contaminated by abraded particles.

Cleaning coated parts and plastic parts

- Dust and dirt particles should be removed with a soft brush or lint-free cotton cloth.
- Remove coarse debris with a moistened disposable cloth.
- Clinging dirt can be removed using petroleum ether or alcohol.
- Acetone, xylene or nitro-containing thinners must NOT be used.

Accessories, maintenance and repair

Accessories

Only the following accessories may be used with the Leica IMS500 HD System:

- The Leica accessories described in this user manual.
- Other accessories, provided that these have been expressly approved by Leica as being technically safe in this context.

Maintenance

- The Leica IMS500 HD System is basically maintenance-free. To ensure that it always operates safely and reliably, we recommend that you take the precaution of contacting the responsible service organization.



You can arrange for periodic inspections or, if appropriate, conclude a maintenance contract with them.

- It is advisable to enter a service agreement with Leica Service.
- For maintenance and repair, only OEM spare parts may be used.

Repairs and service work

- Only original Leica Microsystems spare parts may be used.
- Before opening the instruments, switch off the power and unplug the power cable.
- Avoid contact with powered electrical circuits, which can lead to injury.

Service address

In case of problems, please contact us as follows:

*Leica Microsystems (Switzerland) Ltd.
Industry Division
Max Schmidheiny Strasse 201
CH-9435 Heerbrugg (Switzerland)
Phone +41 71 726 33 28*

Electrical data and ambient conditions

Electrical data

See specifications page

Environment

Temperature for use	+10 °C ... +40 °C
Storage temperature	-20 °C ... +52 °C +50 °F ... +104 °F
Manipulation shock	25 mm on 50 mm hard wood
Transport shock (unpacked)	80 g / 6 ms
Transport shock (packed)	800 mm free fall
Transport vibrations (unpacked)	5–200 Hz / 1.5 g
Atmospheric pressure "in use" and for storage:	500–1060 mBar
Humidity "in use" and for storage:	20–90%
Installation Category II (Overvoltage Category)	
Pollution degree 2	

Unpacking

- Carefully remove the system and any components from the packing carton.
- Check the components against the planned configuration.
- Optional items such as camera adapters, cameras, and carrying cases are not shipped as part of the standard equipment. These items are delivered in separate packages.
- Please do not discard any of the packing materials. They should be used for safely storing and transporting the instrument should the need arise.

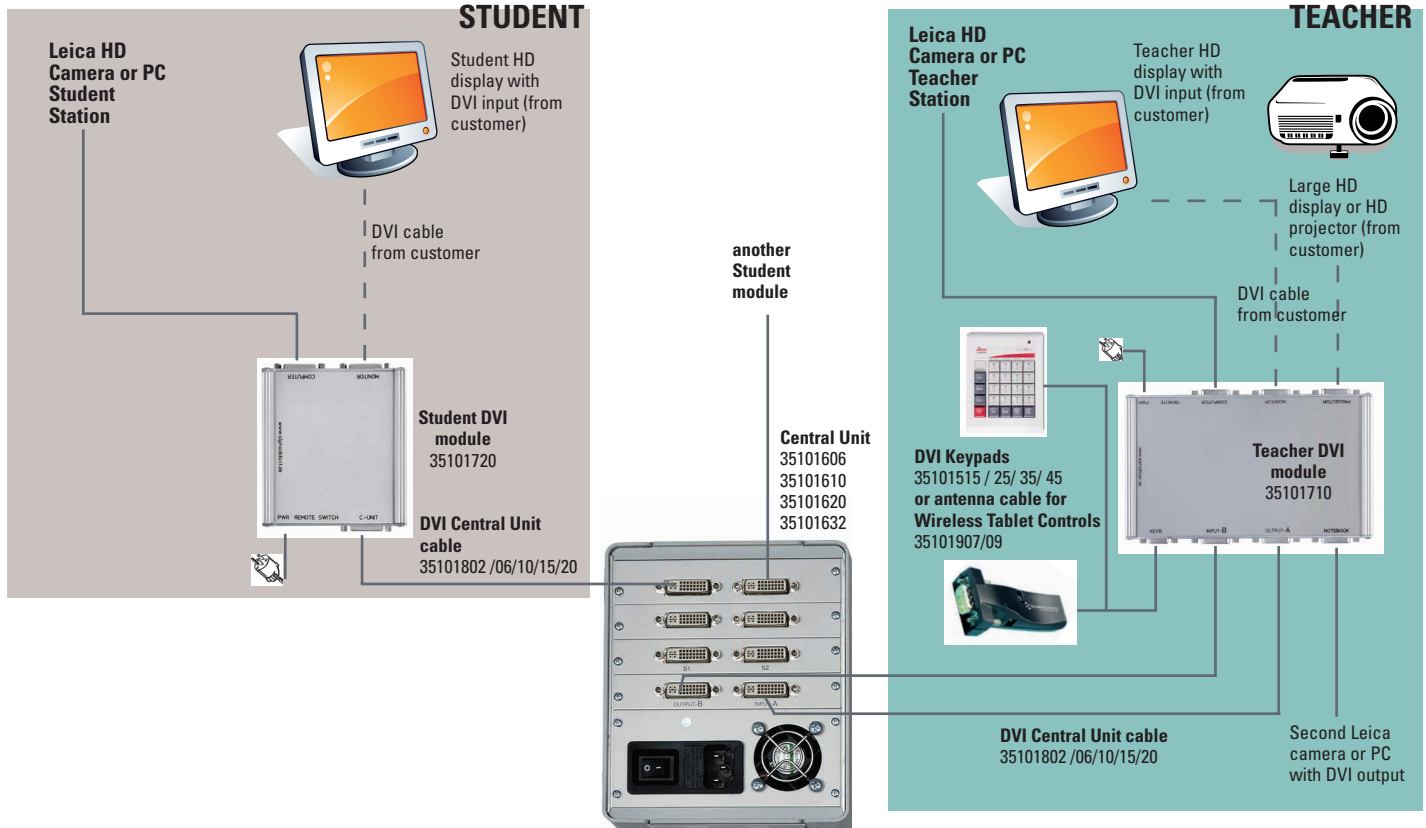
Installation!

Please Note:

IMS500 HD:

- All HD displays must have DVI and HDMI connections and DVI cables (some displays don't come with DVI cables included, therefore, be sure they are supplied with the display)
- Some manufacturers displays require that the camera resolution is changed to 720P
- All HD displays must be of the same model

IMS500 HD - Installation Basic System without Computers



Quick Start!

General information

The instructor's and the student's keys may have a choice of 3 functions: Off, transmit and receive.

The first key selected after VIDEO OFF becomes the transmitter. The next keys selected become the receivers.

Hit a receiver's key again to deselect it.

The transmitter is indicated by flashing light, receivers by permanent light.

To select a new transmitter, hold the key pressed down for about 1 second or reset the system (VIDEO OFF) and start a new input sequence.

Keypad functions



Clear & Reset the system

The system is cleared and all selections are turned off. A new input sequence can be entered by selecting a key (e.g. instructor or any student) who becomes the transmitter. Then select the keys of the receivers of this screen image, e.g. student 1.



Instructor to all students

All students receive the instructor's screen image. The instructor's screen is automatically set as transmitter (if there is no other transmitter selected).



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Instructor to selected students

Press INSTR. + S1 to select the instructor as transmitter. Student 1 will receive the instructor's screen image. Other students may also be added to this selection as receivers by pressing INSTR. + Sx.



+



View students work

Student 1 is selected as transmitter and the instructor is automatically set as receiver. If there was still any transmitter selected when pressing S1, student 1 will be selected as receiver.



Student 1 to all students

Press S1 + ALL to select Student 1 as transmitter, and the instructor and all other students will receive his screen image.

Projector

Activation of the projector. The current transmitter is displayed onto the projector screen.

Student to Student

Student 1 is selected as transmitter, other Students can be set as a receiver.



(+)



Blank all screens

All screens are blanked when BLANK and ALL are pressed. The instructor remains the transmitter and his screen is active and can still be displayed onto the projector screen. To blank single screen press BLANK and select student(s) key to blank the screens.



(+)



Blank single students screen

To blank single screen press BLANK and select student(s) key to blank the screens.



(IMS500 HD ONLY)

Notebook

Notebook screen can be broadcasted to a single student, a group, or all students, as well as to projector.



+



Video Scanner of students` screens

Hold down the ALT key while pressing the ALL key. The instructor receives all students` screens sequentially for about 3 seconds. In the case of the Wireless Tablet Control, do not hold down the Alt icon. Simply press the Alt icon first, then the All key.



(IMS500 HD ONLY)

Projector Notebook

Sends notebook screen directly to projector, independent of other settings (e.g. INSTR. to ALL). Both settings are working simultaneously, VIDEO OFF will NOT turn off the Projector-Notebook function. To turn it off, hit the key again, or replace it by the function PROJ. INSTR.

Additional Keypad functions for IMS500 HD Advanced Systems with computers and remote control



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Lock all keyboards and mice

Hold down the ALT FUNCT key while pressing the KEYB LOCK key to lock all student's keyboards and mice. No video transmission is required. In the case of the Wireless Tablet Control, do not hold down the Alt icon. Simply press the Alt icon first, then the Keyboard Lock key.



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Remote control of student 1 computer

To control students' 1 keyboard and mouse. A student's screen must first be transmitted to the instructor.



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Remote control of all student computers

To control all student's keyboards and mouses hold down the ALT FUNCT key while pressing the REMOTE key. In the case of the Wireless Tablet Control, do not hold down the Alt icon. Simply press the Alt icon first, then the Remote key.

Instructions for the Wireless Tablet Control Option

Before using the tablet for the first time, you must charge the battery.

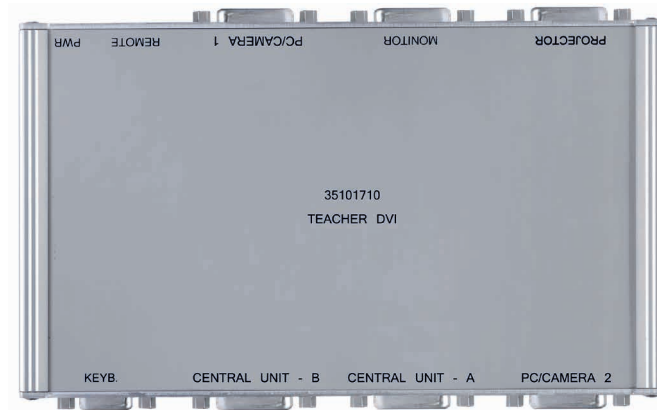
Only use the charger supplied with the Tablet or another 5Volt USB Power Supply.

Unauthorized chargers and cables can explode the battery or damage the equipment.

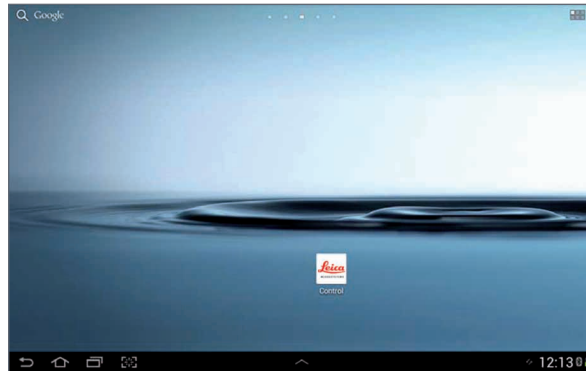
If the battery is completely discharged, you can not turn on the device even if the battery is charging.

Bluetooth Antenna

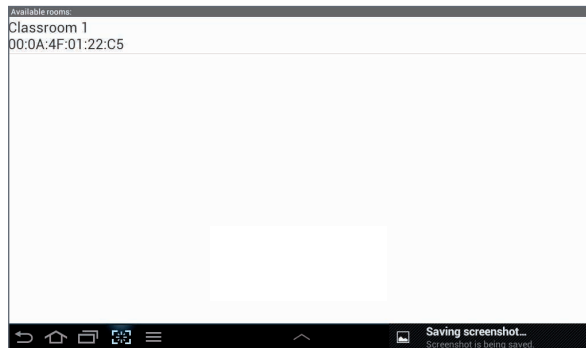
The antenna will be connected according to the drawing with a serial 9-pin cable to the Instructor-Box. (Connector: Keyb).



To start the Leica Microsystems control app select the icon Leica Microsystems on the home screen or through the application menu.



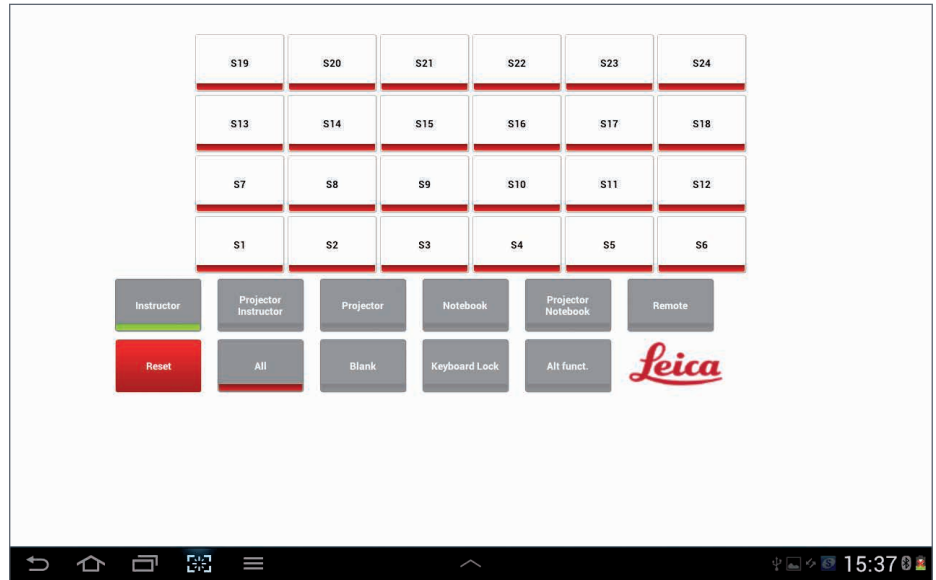
Tap "Classroom 1" at the top of the screen.



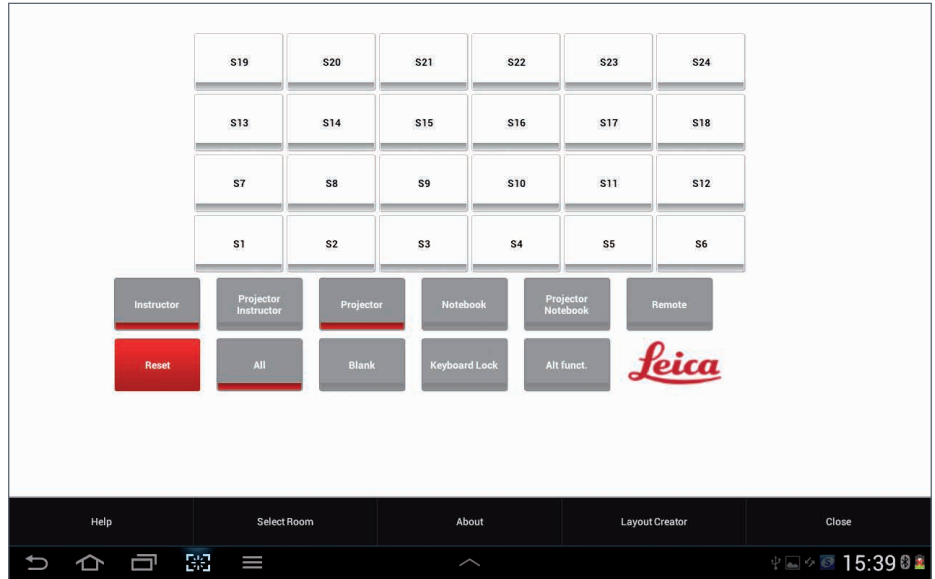
Through the keypad shown on the screen, every single function of the IMS system can be controlled.

A function can be selected by pressing a key or key combination. The transmitter is marked with a green bar, one or more receivers are marked with a red bar.

See the function of each button in the Quick Start guide on the previous pages.



The options will be shown by touching following button in the lower part of the screen.



Options (Overview)

Includes IMS500 HD User Manual

Layout Creator

To create individual room layouts.

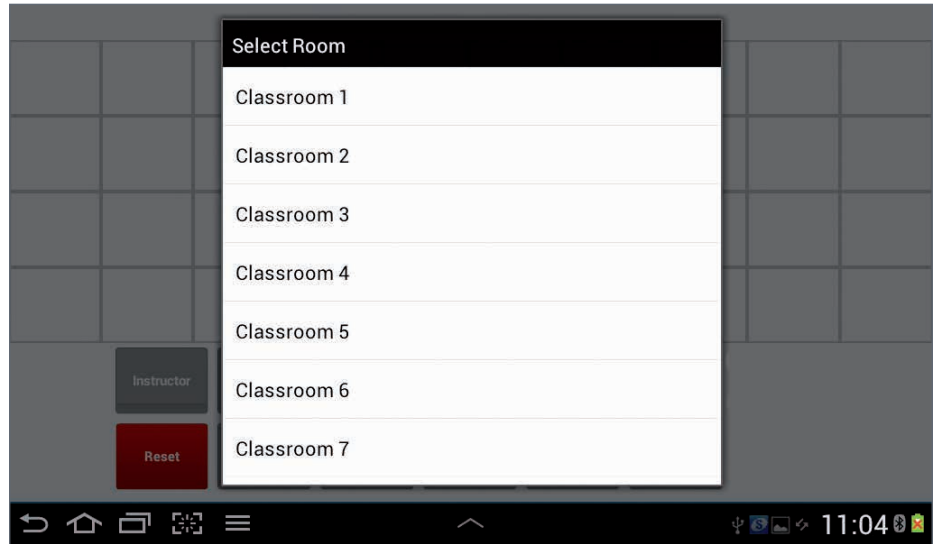
Close

Closes the application. Current selections will not be closed.

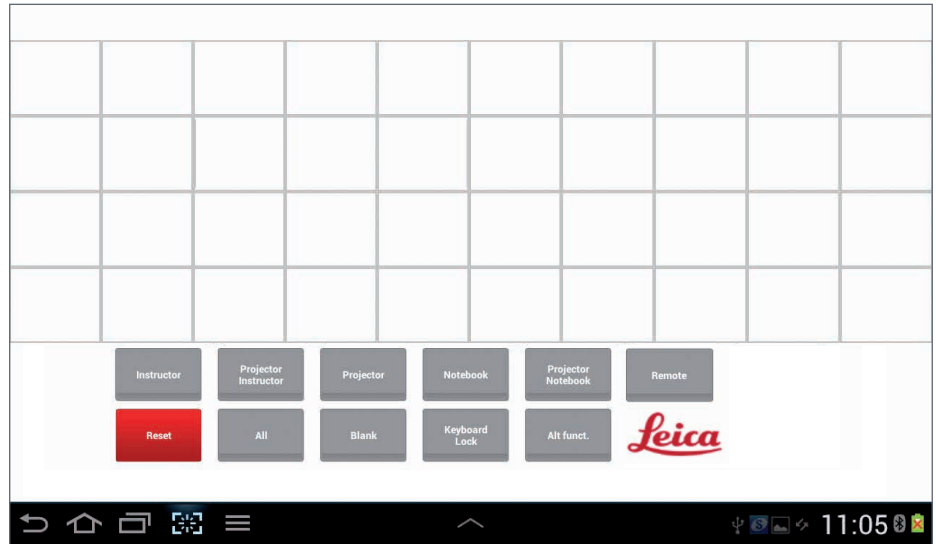
Layout Creator

With the layout creator you can create your own seating arrangement or change an existing seating plan.

After starting the layout creator, a selection menu appears. Now you can choose the antenna/room, whose plan you want to create or change.

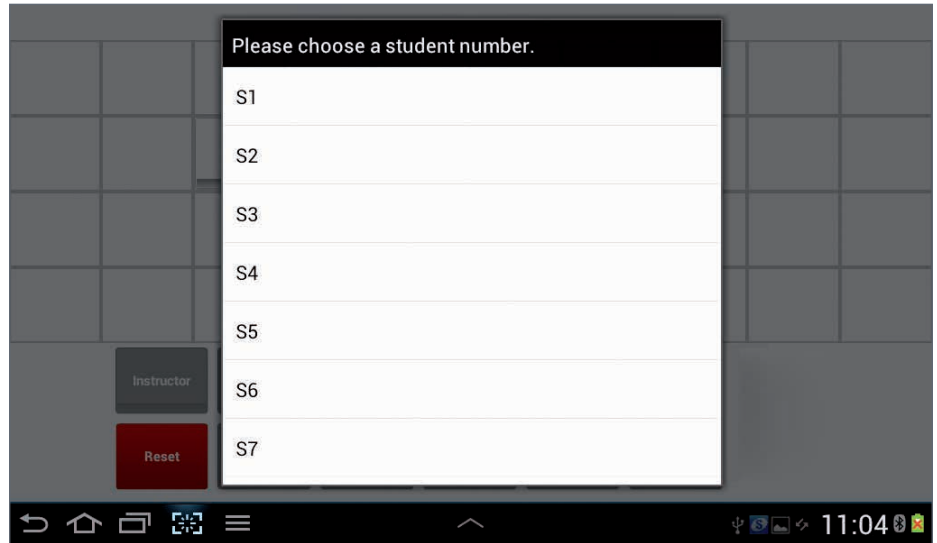


If you have chosen an antenna or room the current plan will be shown. If there is no existing plan, an empty plan will be shown to create a new one.



Add a student

At the touch on an empty field a selection menu appears to choose a student number for that field.



A selected student button (S1, S2 ...) will be shown in the plan/seating arrangement.

Remove a student

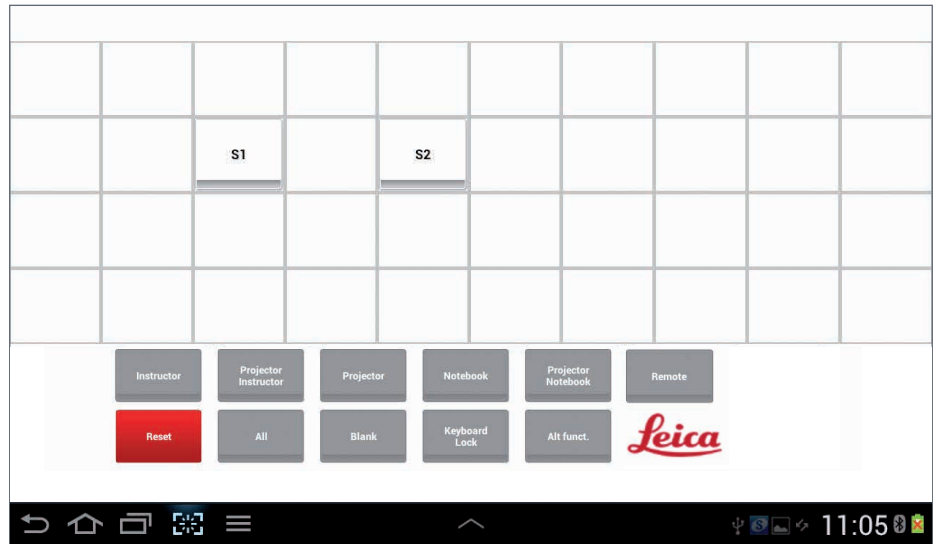
If you want to remove a student number just touch the respective button on the tablet until it will be removed from screen.

Save layout

To save all settings open the option menu



and choose „Save Layout“.



Close

Close Layout Creator

To close the Layout Creator open the option menu and choose „Close“. You will return to the main menu. When you select the appropriate classroom, you will see the changes you made.

Specifications IMS500 HD

Keypad	Type KP15 DVI	Type KP25 DVI	Type KP35 DVI		
Dimensions* (W-H-D)	12.5 x 4 x 17cm	15 x 4 x 21 cm	19.5 x 4.5 x 22 cm		
Weight	ca. 400 g	ca. 550 g	ca. 700 g		
Power	5VDC and 10VDC supplied by Central Unit				
Connection	9 Pol, serial, RS-232		* Dimensions of keyboard only (no cables/plugs).		
Central Unit	CU6 DVI	CU10 DVI	CU20 DVI	CU32 DVI	
Dimensions* (W-H-D)	14 x 14.5 x 21 cm	24 x 15 x 28 cm	34 x 15 x 28 cm	45 x 15 x 28 cm	* Dimensions of rack only (no cables/plugs)
Weight	max. 2.7 kg	max. 3.6 kg	max. 5.4 kg	max. 10 kg	
Power Consumption	max. 50 W	max. 100 W	max. 200 W	max. 200 W	
Power source	110V -240V AC 50-60 Hz				
Cooling	Adjustable fan				
Cables	DVI-D male/male (24+1) prefabricated 1m up to 30 m				
Boxes	Teacher DVI-Box / 19.5 x 2.5 x 12.5 cm / 445 g / +5V DC Charger				
Boxes	Student DVI-Box / 11.5 x 2.5 x 10.5 cm / 250 g / +5V DC Charger				

The statement by Ernst Leitz in 1907, *"With the User, For the User,"* describes the fruitful collaboration with end users and driving force of innovation at Leica Microsystems. We have developed five brand values to live up to this tradition: Pioneering, High-end Quality, Team Spirit, Dedication to Science, and Continuous Improvement. For us, living up to these values means: **Living up to Life.**

INDUSTRY DIVISION

The Leica Microsystems Industry Division's focus is to support customers' pursuit of the highest quality end result. Leica Microsystems provide the best and most innovative imaging systems to see, measure, and analyze the microstructures in routine and research industrial applications, materials science, quality control, forensic science investigation, and educational applications.

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Germany · Wetzlar	+49 64 41 29 40 00	64 41 29 41 55
India · Mumbai	+91 226 1880 200	226 1880 333
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Japan · Tokyo	+81 3 5421 2800	3 5421 2896
Korea · Seoul	+82 2 514 65 43	2 514 65 48
Netherlands · Rijswijk	+31 70 4132 100	70 4132 109
People's Rep. of China · Hong Kong	+852 2564 6699	2564 4163
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