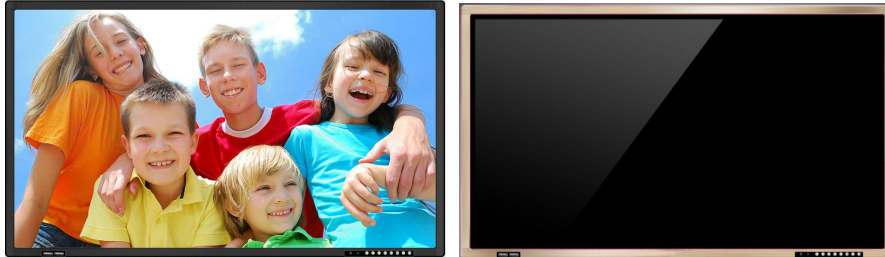


Solution of Multimedia Digital Classroom (LCD Touch Screen)

1. LCD Integrated Touch Machine



Technical Parameters:

1- Hardware technical requirement:

- 1) Display Size: ≥ 75 inches LED LCD screen.
- 2) Writing Technology: Infrared induction technique, min.10-point touch. No need of special pen, writing by fingers or any other opaque object directly on the surface.
- 3) Support HID drive-free technology: under Windows system, completely compatible to Windows multipoint protocol, point while touch, no interferes on each other.
- 4) Detachable touch screen: The touch frame with detachable button design, disassemble from front, no need to disassemble any screws or protection angles during maintenance.
- 5) Response speed: 1st point ≤ 8 ms, continuous writing ≤ 3 ms, positioning accuracy ≤ 1 mm.
- 6) Display scale: 16:9
- 7) Resolution: 1920x1080 (full HD)
- 8) Brightness: ≥ 450
- 9) Contrast: 2000:1
- 10) Visual angle: $\geq 178^\circ$
- 11) Sound output power: 2*15W
- 12) Video formats: PAL/SECAM
- 13) Front interface: 6-path USB (of which PC USB*4, USB touch*1、TV USB*1), VGA input*1, AUDIO input*1, MIC input*1, HDMI input*1.
- 14) Input port: 2-path AV (VIDEO+R+L), 1-path RF, 2-path HDMI, 1-path VGA/audio
- 15) Output port: 1-path AV/audio, 1-path TV stereo audio output, 2-path USB power supply: AC100-240V 50/60 Hz.
- 16) Peripheral interface: 4 USB 2.0 ports, 1 audio line input, 1 audio line output, 1 net interface, HDMI output
- 17) Power supply requirement AC220V $\pm 15\%$ 50/60HZ ultra-low power consumption: 80 W.

18) PC configuration requirement

With modularization design of computer, when the computer has malfunctions, the computer can be maintained by plug type of computer. To guarantee the compatibility, the computer module adopts to standard OPS-C structure, connection through standard 80-core OPS port with other devices. Port: 2-path USB2.0, 2-path USB 3.0, 1-path RJ45 network port, 1-path HDMI, 1-port LINE output, 1-path MIC input, supporting wifi.

★Machine appearance: aluminum alloy front housing, circular arc safe plastic corner, light and thin design, thickness of machine 29.7mm, thickness of computer position 67.7mm (thickest point).

★Touch structure: The PCBA part of touch screen can be maintained by disassembly of the infrared filter directly, no need to disassemble the front frame and corner or any other accessories.

Display module: adopt 65 inch LED LCD display, brightness $\geq 350\text{cd/m}^2$, highest resolution 1920(horizontal)x1080(vertical)

★USB button at front, dion cover button, dust proof and sweat proof design

★Touch parameter: infrared sensitive technology, fingers, pens or any other opaque objects can be used sensitively, response time required the 1st point (click): less than 8ms, continuous (writing): less than 3ms, cursor speed no less than 300 points/s, with screen protection by 4mm tempered glass.

★Multi-point touch function: 16-point touch (min. 10 points): It is fully compatible with WIN7 multi-point operation protocol, and can recognize multiple people writing at the same time and many natural gestures.

★Multi point touch mode: For different operation system and WIN7, provide options of switching one point mode or multi point mode.

★Remote maintenance: The touch screen with built-in detection tools, convenient in self finding problems of touching, after sales engineer can provide the best after sales service and support remote detection and update service on touch screen.

★Qualification: 3C certification, ISO9001, ISO1001, CE, ROSE inspection report of the whole machine.

2. Wall-mounted Integrated Lecturing System GY-DMT018:



Function Features:

- 1) Audio system can be used individually after connection to power, effectively extend the working life of projector or LCD TV or inner computer;
- 2) Metal housing, strong and durable, beautiful and high-grade, size max. 1230mm*300mm*60mm, convenient to inset inside the blackboard, mounted as a whole with LCD TV or electronic whiteboard;
- 3) No any screws or rivets on the surface of the housing, smooth overall, elegant appearance, with structure of disassembly from face side, easy maintenance;
- 4) Without any protrusion other than the lock and handle of the display stand, easy to open and close the blackboard.
- 5) 2 digital tubes display the working condition and parameters, easy to monitor the user mode of the equipment.
- 6) Two input methods for projector control code: pre-stored 99 series 232 projectors control codes for users to call directly, reduce the trouble of user coding, in the meantime unincluded models are free to be written by the user;
- 7) Adjust initial volume automatically, after starting up by setting the system will automatically adjust the volume to the setting value from small to big;
- 8) When off, the projector cooling countdown function effectively protects the projector .
- 9) Intellectual control system by one key, by “system on/off”, the projector, computer and console will be opened or closed automatically, easy operation;
- 10) Starting up by both 2 modes of swiping card or keyboarding, to prevent the situation of unusable of the equipment when the key is lost or damaged.

Basic configuration and parameters:

- 1) Wall mounted structure, thickness of metal sheet min. 1.2mm
- 2) After open the control door of the display stand, the gas rod ejects the door and keeps it horizontally, you can put a A4 textbook onto it, the object display will be hidden after closing;
- 3) Highly integrated multifunction with wireless microphone, main machine of multimedia lecturing machine, display stand, stereo amplifier, intelligent console, delay shutdown system and sound box.
- 4) Computer configuration: CPU Intel Core i3 processor, hard disk solid SSD 128G, 4G memory, WLAN card (optional), etc. of which the solid hard disk and WLAN card with PCI-E onboard port, USB or SATA port are not accepted;
- 5) To respond the national policy of energy saving and emission reduction, the overall power less than 150W;
- 6) Built-in multi-function wireless microphone, you can speak by a hand type or head type microphone, automatically select different frequency points, meet the need of 100 classrooms in use without interference; multifunction wireless microphone with laser pen, PPT up/down page function key and volume adjustment key, can control PPT up/down page running on computer and the volume of microphone

- 7) Built-in 2*20W stereo digital power amplifier, with DSP digital chips, BLP digital feedback repeating technology, intelligent testing and sampling, automatically test and adjust the volume gain, automatically source noise frequency points and complete the sound suppression feedback. With power output and frequency output port.
- 8) Built-in time delay power function, when press the “power” key, the equipment can be closed, don’t need to wait the bulb cooling down, the system will delay 90 minutes for outage.
- 9) Built-in object display stand: shot size: A4(210mm*297mm)/scanning speed: 1s/resolution ratio: 5 mil/image color: 24 bit/picture format: JPEG,TIF,PNG,GIF,BMP/video format: AVI format/port: USB2.0, no need external power/light source: natural light + LED lamp (usage time 3000 hours)/picture control: adjustment of brightness, sensitometry, acutance, color and gain control, character recognition: OCR recognition function/can write or postil on the presentation notes on the projection screen or electronic whiteboard.

Qualification:

Certification of 3C, ISO9001, ISO14001, ISO18001, CE, FCC, ROSH, and software copyright of video booth.

3. Combined Push/Pull Green Board



- 1) The frame uses 1.2mm thickness of electrophoresis aluminum, beautiful looking, weight 0.41 kg per square meter. The board is lacquered board, thickness of board 0.3mm, hardness 8H, easy wiping, good magnetic absorption, opaque, protect students eyes. The middle layer with multi layer corrugated paper, good elasticity, comfortable writing; the back board with 0.2mm thick high quality galvanized plate to prevent the black board from out of shape; Strong adhesive, the plate will not come unglued, without bubbles.
- 2) The size of outer frame: 110x45x1.5mm, electrophoresis aluminum, beautiful looking, weight 1.59 kg per meter, the hardness of aluminum 14HRC.
- 3) Electronic whiteboard is fixed at the left or right side; there is a sliding whiteboard in front with a protection lock for the electronic whiteboard, overall size 4000x1300mm. This design is reasonable and good looking, durable, elastic, and comfortable in writing.

4. Desks and Chairs (Assembled hexagonal table)



Every group with 6 small “T” combined together.

Panel material: Melamine environmental protection plate, rounded corners, square edge grinding.

Material of steel frame: Q235 steel tube

Material of Plastic part: Engineering polypropylene

Desk size: every small “T” 730*400*780mm, thickness of desk board: 1.8mm. Max height 780mm, min height 600mm

Adjustable height: 600-780mm

Bucket depth: 330mm

Front panel: 400mm x 50mm. Thickness 1.2mm, material Q235 steel plate.

Desk leg size: inner tube 20mmx50mm/steel thickness 1.2mm, material Q235 steel tube; Outer tube 30x70mm/steel thickness 1.2mm, material Q235 steel tube.

Desk leg bottom size: 420x50mm/steel thickness 1.2mm, material Q235 steel plate.

Adjustment of chair: 450-360mm.

Outer tube size 30x60mm, inner tube 25x50mm

Color: customized.

5. Intelligent Electronic Capacitive Class Information Board

BD21.5-B08



Class information board system is a device mounted at the classroom entry, acting as digital display platform of class culture for the teachers and students. Movable and centralized management on displaying of cultural information of the intellectual class, it also equipped with an attendance system, by which teachers and students can sign in through mobile device or swiping card. Teachers can check the daily attendance

record and obtain the information of students in classroom and their safety. Parents also know their children's information of arrival at school and leaving from school.

1- Product features

1)- Structure design:

1) Flat surface structure, ergonomic design, slim and beautiful, streamline modeling, sophisticated technology

2) Integrated ultra thin design of display, touch control and computer, thickness is only 43mm;

2)- Using effect:

1) Using the latest innovative touch control projected capacitive plate, perfect 10-point touch, support handwriting or multi-point gesture;

2) Touch speed is less than 3ms, high precision, simple use and easy maintenance;

3) Anti-light interference, make sure the precision of operation (normal use under direct glare);

3)- Wide extension: flexible configuration for various accessories of customer need.

4)- High safety: aluminum alloy + steel plate structure, blind edge, anti-wear and anti-corrosion paint process, integrated explosion protection design;

5)- Stable performance: advanced design philosophy, strict production process; stable and reliable product quality, low failure rate;

6)- Easy installation: on/off by one key with power on, free of site installation and debugging;

7)- Support timing switch function, realize unattended function.

2- Product size

1) Specification: 21.5 inch.

2) Display scale; 16:9

3) Display area: 478*270

4) Resolution: 1920*1080P

5) Overall dimensions: 527*426*28mm

3- System design:

1) HDMI output/input: inner computer HDMI output (Android only 3288 support output);

2) Touch function: latest projected capacitive plate, 10-point touch, support multi-point gesture.

3) Display: PC full HD HDMI signal 1080P;

4) PC video decoding: 1080P full HD MPEG, H.264, etc.

5) Structure design: Aluminum alloy frame, steel plate housing, good heat release;

6) System module: PC, display and touch are integrated, one key switch.

4- Parameters of LCD screen:

1) Type of screen: LED backlight LCD panel A gauge;

2) Optimum resolution: 1920*1080P , 1920*1200, 1280*1024;

- 3) Brightness: 250 cd/m²;
- 4) Contrast: $\geq 1000: 1$;
- 5) Response time: 1.3/3.7 ms;
- 6) Refresh rate: 60Hz;
- 7) Total number of colors: 16.7M (8-bit 2(LVDS) channel low pressure differential signal) ;
- 8) Visual angle: 89/89/89/89 (Typ.)(CR \geq 10) (left/right/up/down);
- 9) Usage time: >30000 h.

5- Parameter of touch screen

- 1) Touch technology: projection capacitive technology (capacitive touch screen);
- 2) Response time: <5ms/3, touch points: standard 10 points, zoom in and out multi-point function;
- 3) Valid identification: >1.5mm;
- 4) Scanning frequency: 200Hz;
- 5) Scanning precision: 4096 \times 4096;
- 6) Communication mode: full speed USB 2.0, 3.0;
- 7) Number of theoretical clicks: min. 50 mil.
- 8) Working current/voltage: 180Ma/DC+5V \pm 5%;
- 9) Anti-light interference: normal use under the change of sunlight, incandescent light and daylight;
- 10) Touch data output mode: coordinate output;
- 11) Surface hardness: thermal tempering, Mohs grade 7 explosion-proof glass;
Operating system compatibility: Windows 7/ Windows 8/CE/Mac/Android/Linux /XP
- 12) Software: upgradable;
- 13) Drive: no drive, plug and play.

6- Class board system BD21.5-B08

1)- Android system

- 1) System version: Android 5.1;
- 2) CPU type; 8-core RK3368, Quad core ARMCortex-A9 up to 1.8GHz;
- 3) CPU: ARM Mail 400 MP4;
- 4) System memory: 2G DDR3
- 5) Memory capacity: 8GB
- 6) USB2.0: 2 series
- 7) Audio earphone output: 1 series
- 8) LAN (RJ45) : 1 series
- 9) WiFi: available
- 10) TF CARD: 1 series
- 11) OTG: 1 series

7- Card reader

1. Support protocol: ISO14443TYPEA;
2. Distance of card reading: 0-50mm;
3. Support card type: readable MIFARE series cards which are conform to ISO14443TYPEA standard;
4. Port to computer: RS232/TTL;
5. ★Support to ready 3rd party One-Card, can be integrated with 3rd party card if

provided by the physical card no.

6. Communication rate: 9600bps;
7. Operating system: Windows 98、Me、2K、XP、2003、Vista and Linux、Unix、Android
8. Antenna: integrated antenna;
9. Working frequency: 13.56MHz;
10. Working voltage DC5V—24V (custom made as needed)
11. Lower power module, voltage 3.3V;
12. Communication rate of card and card reader;
13. Working temperature: -20°C ~60°C;
14. Relative humidity: 30%~95%;
15. Overall dimension (Length x width x height)(mm) 50*32*3;
16. Weight: 20/40g

8- HD 2 million camera

1. Aperture: 2.8;
2. Dimension: 60mm × 8mm × 5.2mm;
3. Port: USB2.0;
4. Focal distance: 2.9mm/;
5. Field angle: 50°
6. TV distortion: <-1%;
7. Sensitive area size: 1/5-inch;
8. Pixel size: 1.75μm×1.75μm
9. Image size: 1616(H)×1232(V) [pixel]
10. Max image: 15FPS UXGA 36MHZ/30FPS 720pMHZ
11. Pixel: HD 2 million;
12. Microphone: optional;
13. Max resolution: 1600*1200;
14. Object distance: 15CM-130CM

9- Software parameters:

1. The system has 6 intellectual auto-playing modes and 17 functional modules incl.: normal mode, class mode, interval mode, welcome mode, test mode. Through intellectual auto carousel, maximize every function, precisely push the information, management and diffusion with high efficiency.

- 1) Normal mode: applicable scene is for the period before the class begins, information modules incl.: introduction of the class, class album, campus info, videos of studying field, class homework, class honors, announcement and notice, class culture.
- 2) Class mode: applicable scene is for the period of class, displaying the info of the teacher in teaching. School leaders and parents can know the teacher in teaching, Functional module: name of teacher, course, title and features.
- 3) Interval mode: applicable scene is for the period of break, the purpose of efficient information dissemination and learning can be achieved through accurate content delivery. The main features are to let students predict the course arrangement in

advance, understand the situation of classes today and edify students' moral education quality and education through fragmented time, so as to realize the integration of class culture and campus culture. Functional modules include today's students on duty, praise column, class honors, class dynamics and class schedule.

- 4) Class selection mode: The system realizes modern teaching affairs management through course management, teaching plan, classroom management, online course selection, intelligent class scheduling, automatic class allocation, class schedule inquiry, student and teacher attendance, class roll call and teacher evaluation. The display side shows the class and attendance record, the teacher information of the class and the class schedule.
- 5) Welcome mode: The application scenario of the welcome mode is mainly to display the welcome message. The manager can release welcome words through the set control system, selectively release for grades, classes and models, and set time and background for release demonstration.
- 6) Test mode: The application scenario mainly shows the basic information of the test in the test period. The main features of the examination mode are to let students know about the current role of the examination subjects, examination time and some matters needing attention. Functional modules include: classroom name, examination subjects, examination time, examination notes. The administrator can publish the name, number, examination time, notes in the examination room, etc. through the set control system, and the time and background can be set for release and display.
- 7) Student sign-in: the students check in by One-Card, the teachers and parents know the information of their arrival at school and leaving from school and their safety situation. At the same time, the one-card and access control are linked in real time, which can be used for card swiping.
- 8) Backstage management system:
Basic data management: year/class/grade/teachers
Users' management: administrator + head teacher + subject teacher + parents
Class selection management system: teaching plan management, student selection of class, arrangement of course schedule, curriculum application, curriculum management, checking class attendance, teacher's evaluation, reduce the pressure and management burden for teachers.
Content release management (important): Edit the new module, update and publish the class content.
Student attendance management: Record attendance record and data statistics.
Class board device management: You can set the time switch, automatically start the system software, and record the status of equipment.
- 9) Release information on mobile phone: Content information release and content management can be carried out through the mobile phone, so that teachers can efficiently carry out teaching management.

Teaching module: Create courses, students select courses, attendance management, class schedule application, class members.

Management module (important): class image, class activities, class demeanor, class honors, class album, electronic bulletin board, lost and found, notice announcement, praise column, test mode, welcome mode, device management, duty student info.

My module: role switching and account management.

Auxiliary material for information:

In order to ensure the stability, security and durability of the whole system, all cables, including the connection wire between the wall-mounted all-in-one machine system and the LCD TV (power line HDMI), are all made of disposable mechanism, with no connection between them.

All auxiliary materials are national standard.

Normal mode; Class mode; Interval mode;



Class selection mode; Welcome mode; Test mode;



Sign-in:



Backstage management system; Connecting to mobile phone;



Example photos of multimedia classroom:



Solution of Multimedia Digital Classroom (LCD Touch Screen)

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