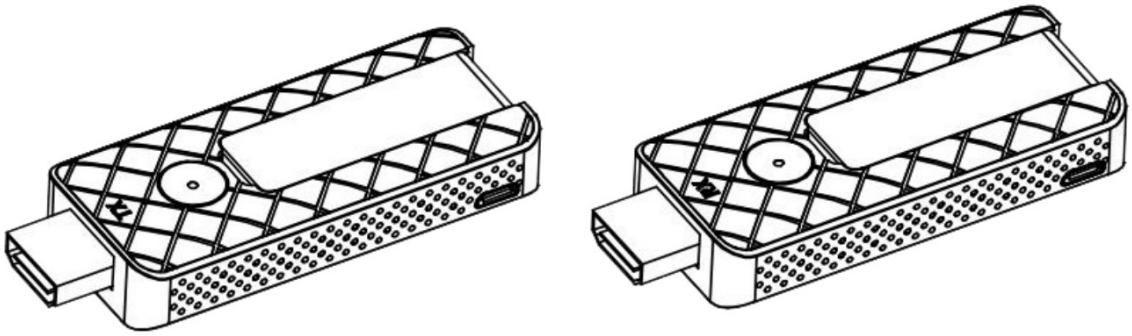
RGBlink ASKnano Wireless Presentation and Collaboration System User Manual

ASKnano Wireless Presentation and Collaboration System
User Manual



ASK nano
Wireless Presentation and Collaboration System
Article No: RGB-RD-UM-ASK nano E007
Revision No: V1.7

Thank you for choosing our product! This User Manual is designed to show you how to use this video processor quickly and use all the features. Please read all directions and instructions carefully before using this product.

Declarations

FCC/Warranty

Federal Communications Commission (FCC) Statement

This equipment has been tested and found to comply with the limits for a class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause

harmful interference to radio communications. Operation of this equipment in a residential area may cause harmful interference, in which case the user will be responsible for correcting any interference.

Guarantee and Compensation

RGB link provides a guarantee relating to perfect manufacturing as part of the legally stipulated terms of the guarantee. On receipt, the purchaser must immediately inspect all delivered goods for damage incurred during transport, as well as for material and manufacturing faults. RGB link must be informed immediately in writing of any complaints.

The period of guarantee begins on the date of transfer of risks, in the case of special systems and software on the date of commissioning, at the latest 30 days after the transfer of risks. In the event of a justified notice of compliance, RGBlink can repair the fault or provide a replacement at its own discretion within an appropriate period. If this measure proves to be impossible or unsuccessful, the purchaser can demand a reduction in the purchase price or cancellation of the contract. All other claims, in particular those relating to compensation for direct or indirect damage, and also damage attributed to the operation of the software as well as to other services provided by RGBlink, being a component of the system or independent service, will be deemed invalid provided the damage is not proven to be attributed to the absence of properties guaranteed in writing or due to the intent or gross negligence or part of RGB link. If the purchaser or a third party carries out modifications or repairs on goods delivered by RGBlink, or if the goods are handled incorrectly, in particular, if the systems are commissioned and operated incorrectly or if, after the transfer of risks, the goods are subject to influences not agreed upon in the contract, all guarantee claims of the purchaser will be rendered invalid. Not included in the guarantee coverage are system failures that are attributed to programs or special electronic circuitry provided by the purchaser, e.g. interfaces. Normal wear, as well as normal maintenance, are not subject to the guarantee provided by RGBlink either.

The environmental conditions, as well as the servicing and maintenance regulations specified in this manual, must be complied with by the customer.

Contents

Operators Safety Summary

The general safety information in this summary is for operating personnel.

Do Not Remove Covers or Panels

There are no user-serviceable parts within the unit. Removal of the top cover will expose dangerous voltages. To avoid personal injury, do not remove the top cover. Do not operate the unit without the cover installed.

Power Source

This product is powered by USB on the TX end and DC 5V at the RX end.

Do Not Operate in Explosive Atmospheres

To avoid an explosion, do not operate this product in an explosive atmosphere.

Installation Safety Summary

Safety Precautions

For all ASK nano installation procedures, please observe the following important safety and handling rules to avoid damage to yourself and the equipment. To protect users from electric shock, ensure that the chassis

connects to earth via the ground wire provided in the AC power Cord. The AC Socket-outlet should be installed near the equipment and be easily accessible.

Unpacking and Inspection

Before opening the ASK nano processor shipping box, inspect it for damage. If you find any damage, notify the shipping carrier immediately for all claims adjustments. As you open the box, compare its contents against the packing slip. If you find any shortages, contact your sales representative. Once you have removed all the components from their packaging and checked that all the listed components are present, visually inspect the system to ensure there was no damage during shipping. If there is damage, notify the shipping carrier immediately for all claims adjustments.

Site Preparation

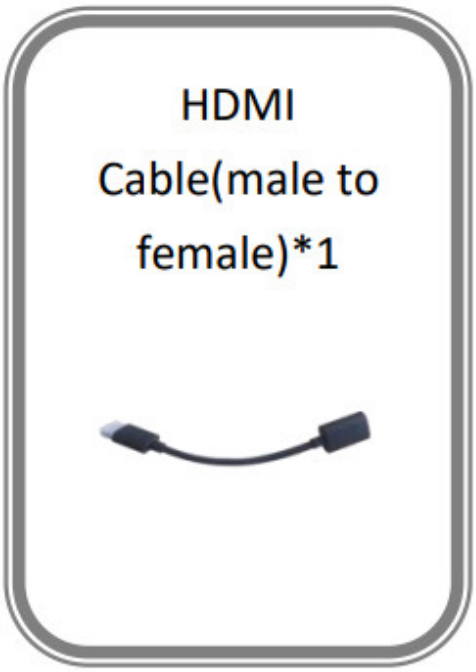
The environment in which you install your ASK nano should be clean, properly lit, free from static, and have adequate power, ventilation, and space for all components.

Chapter 1 Your Product

1.1 In the Box

ASK nano Starter Set(TX*1+RX*1)

Standard



Optional

TipUSB-C to HDMI converter is suggested for notebooks without HDMI port but with USB-C such as MacBook Pro.

1.2 Product Overview

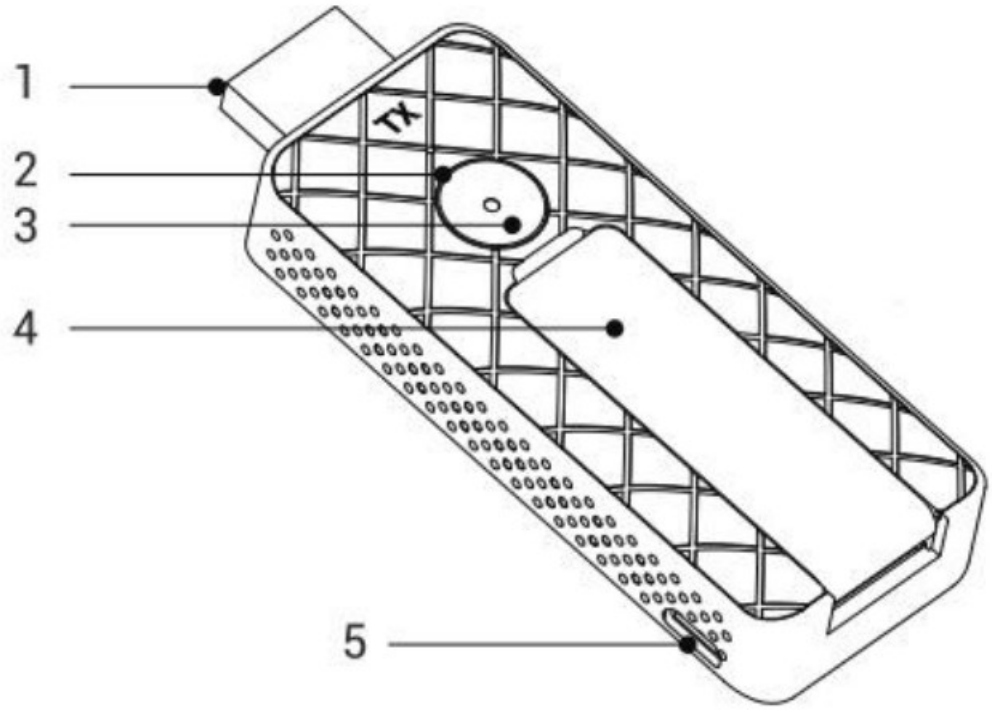
Ask nano is an intuitive and high-efficiency 1080p wireless presentation and collaboration system that enables any meeting participant to simply share the content from their laptop, mobile phone, or tablet on the projector or large screen wirelessly, with no APP required, no setup, no messy cables, just click and share.

A standard Ask nano Starter set is a combination of one transmitter and one receiver. The receiver is connected to a projector or display, and the transmitters are plugged into an HDMI port on a PC or any device with HDMI after being powered. Users just need to wait and the screen will be cast to the display automatically. It's easy for other users to switch by click after more transmitters are paired to the receiver. You can buy an additional transmitter or receiver if needed.

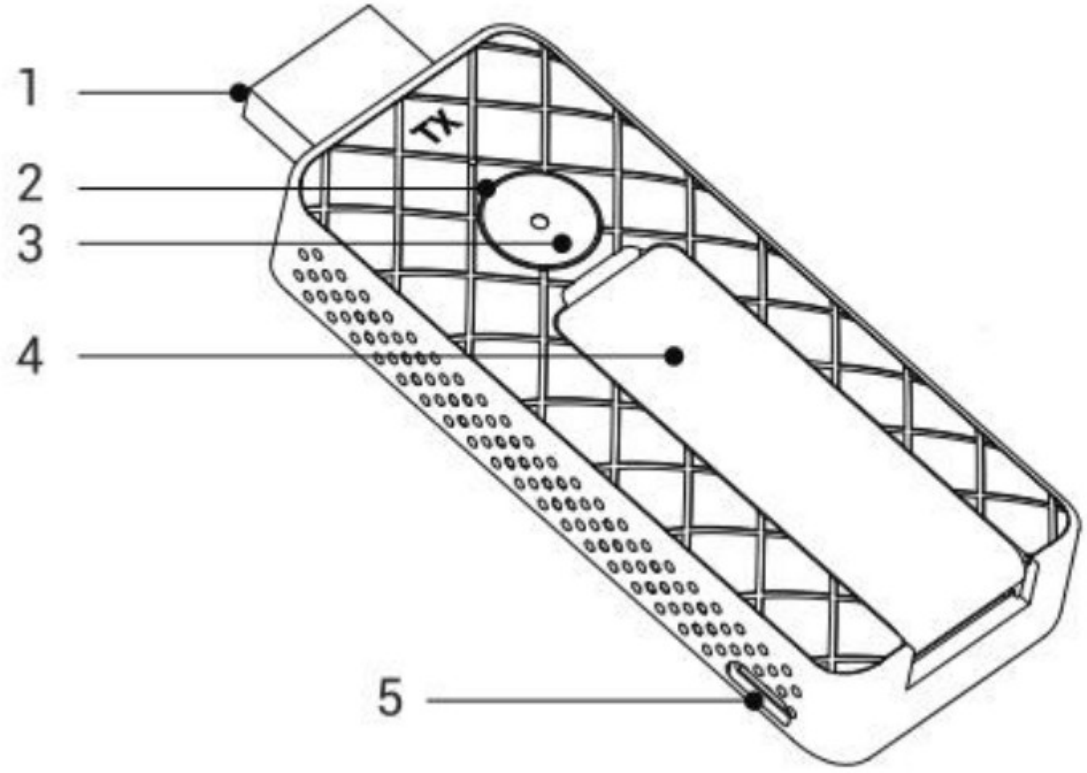
Never have to worry about the software configuration, no compatibility, WIFI and network set up, no need for IT support. With our powerful and simple solution, everyone can immediately know how to use it for collaborative

presentations, which significantly improves corporate efficiency and productivity.

1.2.1 Interface



TX(Transmitter)Illumination			
1	HDMI plug, connect to the laptop	2	Cast button, short press to start or stop projectin g
3	Indicator light	4	Antenna, unfold to enhance signal
5	Micro USB for power interface		



RX (Receiver) Illumination			
1	HDMI interface, connect display or projector	2	Mode switch key, switch TX/DLNA/AirPlay Mode and Miracast Mode
3	Indicator light	4	Micro USB power interface

Indicator light

TX	Illumination
Static Red	TX is opening
Flashing Red	TX is searching for RX
Flashing Blue	Waiting for the connection

Static blue	Successful connection and projection

RX	Illumination
Flash Blue	RX is power on and ready for projection
Static Blue	Already in projection

Chapter 2 Install Your Product

2.1 Pairing of TX and RX

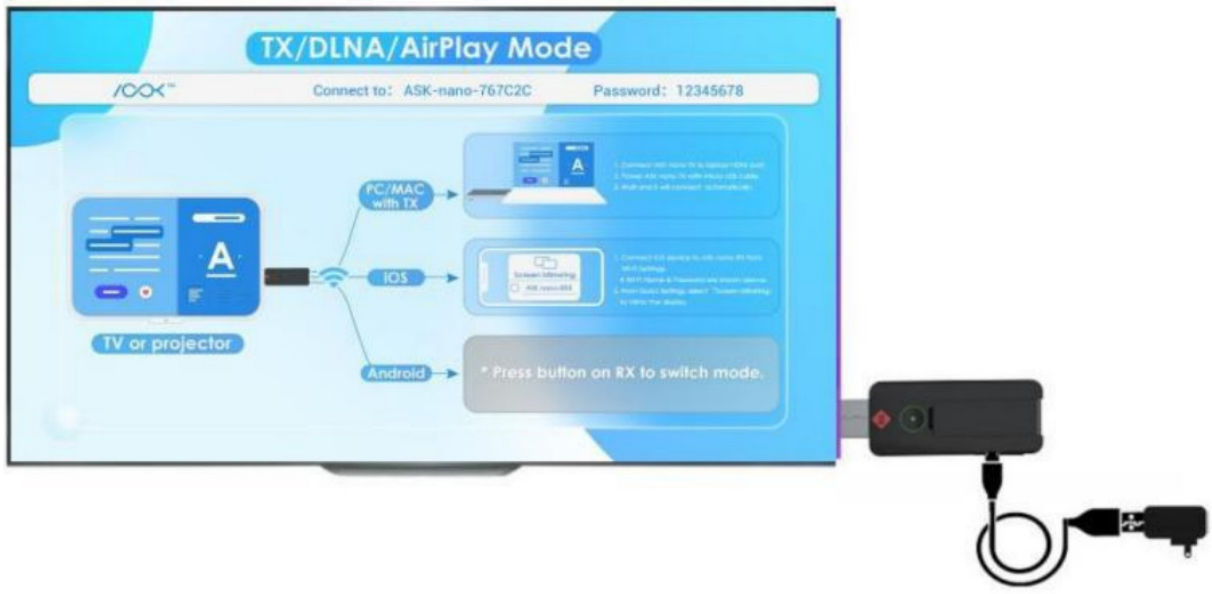
Before delivery, each ASK nano set has been paired, but when extra TX is required, the following steps are the method for users to finish TX/RX pair.

1. If you want to determine whether TX and RX have been paired:
   (1). Powered on RX and TX(power RX up firstly), connect RX to the HDMI port of the display;
   (2). TX and RX will be pairing automatically and the indicator will turn purple after 5 seconds.
2. If you want to **re-pair** the paired ones:
   (1). Powered on RX and TX(power RX up firstly), connect RX to the HDMI port of the display;
   (2). Press the TX button for 5 seconds till it flashes red light quickly.
   (3). Release the button, TX will clear the previous pairing information;
   (4). TX will reboot automatically, and the indicator light on the TX will turn flashing purple showing that it is waiting for the signal source.

Tip: TX will automatically pair to the first RX found, therefore when you do the re-pairing, make sure except for the dedicated RX, other RX around are off.

2.2 Receiver Installation

1. Power on the RX via micro USB to USB cable and power adapter.
2. Connect RX HDMI port to TV, projector, or other displays with HDMI port.



Tip: Power to RX is essential, please prepare a power supply port or power adapter before RX installing. If the display offers a USB power port, use it to supply power for ASK nano RX.

2.3 Transmitter Installation

Application 1:

1. Connect ASK nano TX to laptop HDM port.
2. Wait and it will connect automatically.

Application 2:

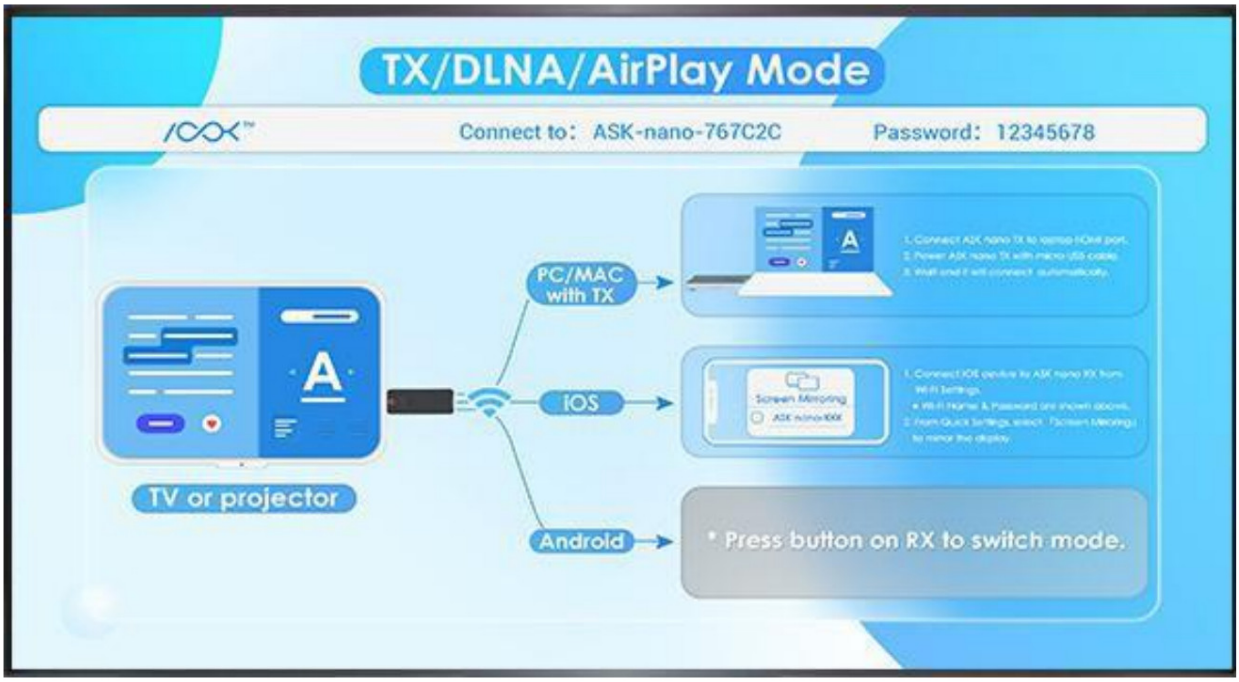
1. Power ASK nano TX with micro USB cable.
2. Connect ASK nano TX to laptop HDM port.
3. Wait and it will connect automatically.

Tip: Try Application 1 first, if the projection is not successful, try Application 2. The USB port on a laptop can be used to supply power for ASK nano TX.

Chapter 3 Use Your Product

3.1 Homepage

After RX is connected to the big screen, the screen enters the homepage. You can find the hotspot and password on top of the homepage. RX hotspot name : ASK nano-XXXXXX; Password : 12345678;



3.2 Computer Screen Projection by TX

TX/DLNA/AirPlay

TX/DLNA/Airplay is designed for TX and iOS device projection.

Application 1

1. Connect ASK nano TX to laptop HDM port.
2. The indicator on TX will turn from red → flashing red → flashing blue → finally static blue indicating that the projection is successful.

Application 2

If it is an unsuccessful to project, try Application 2.

1. Power ASKnano TX with micro USB cable. the indicator light will turn from red → flashing red→ flashing
2. Plug the HDMI jack to a computer when the TX flashes purple and it will project automatically.

Exit and Continue Projection

Press the button on TX to exit the projection and press the button again to continue the projection.

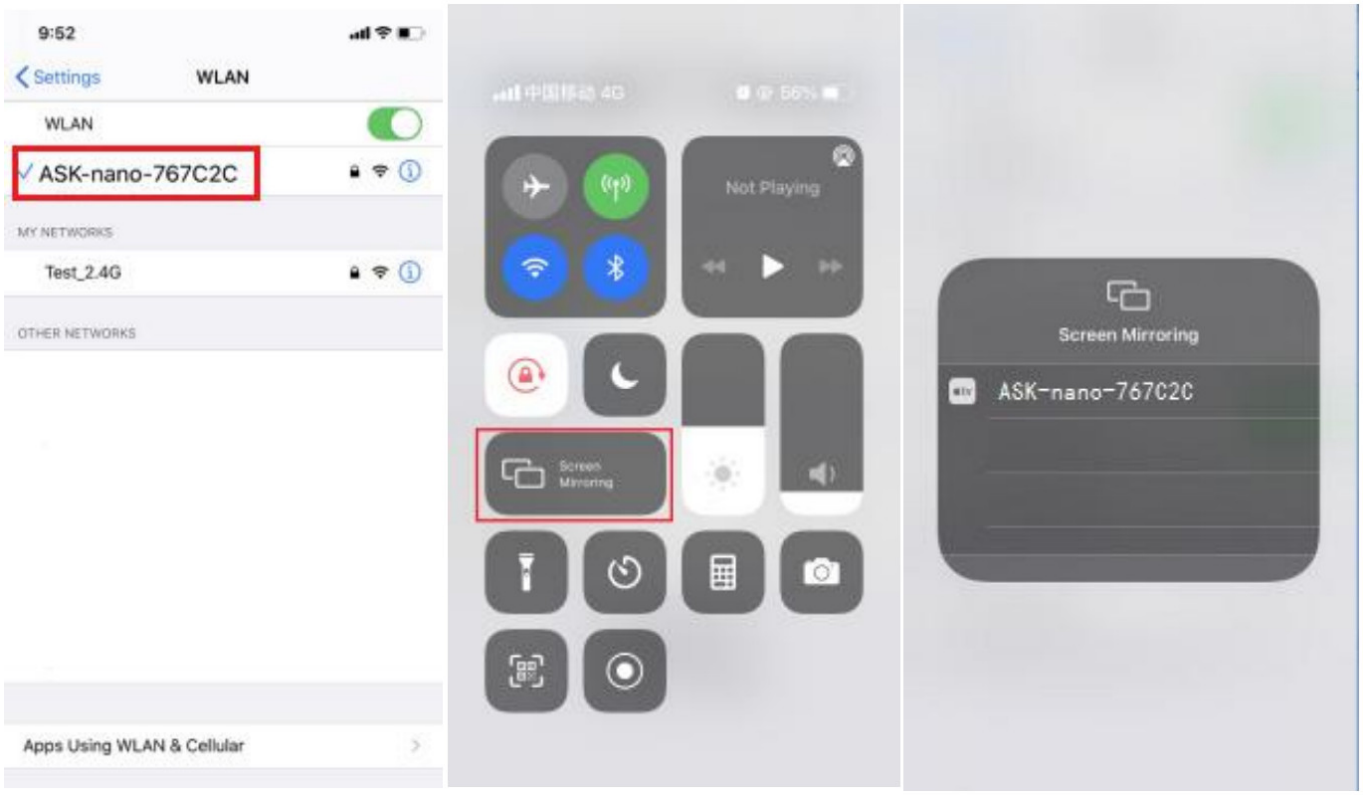
3.3 Phone Screen Projection

3.3.1 iOS

Select two modes of projection: “Mirror” and “Streaming” which can be done on the web menu, as mentioned in 3.5<Menu>

If Airplay is set as Mirror, keep RX in TX/DLNA/AirPlay Mode.

- See the current mode above the TV graphic on the display/product 2.
- Connect iOS device to ASK nano RX from Wi-Fi Settings.
- Wi-Fi Network: ASK nano-XXXXXX
- Password: 12345678
- 3. From Quick Settings, select Screen Mirroring to mirror the display.



Tip: Airplay"Stream" mode, please find **3.5.4 Airplay Mode**

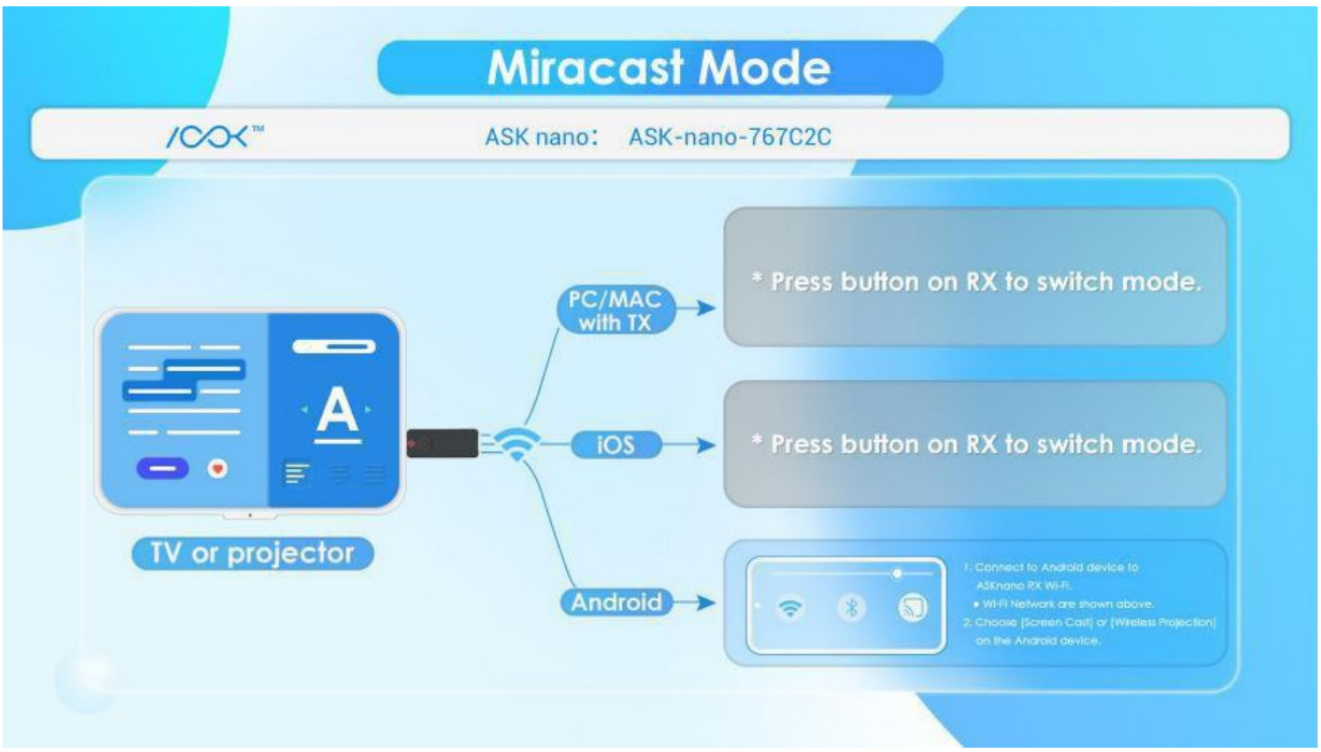
3.3.2 Android

Miracast Mode

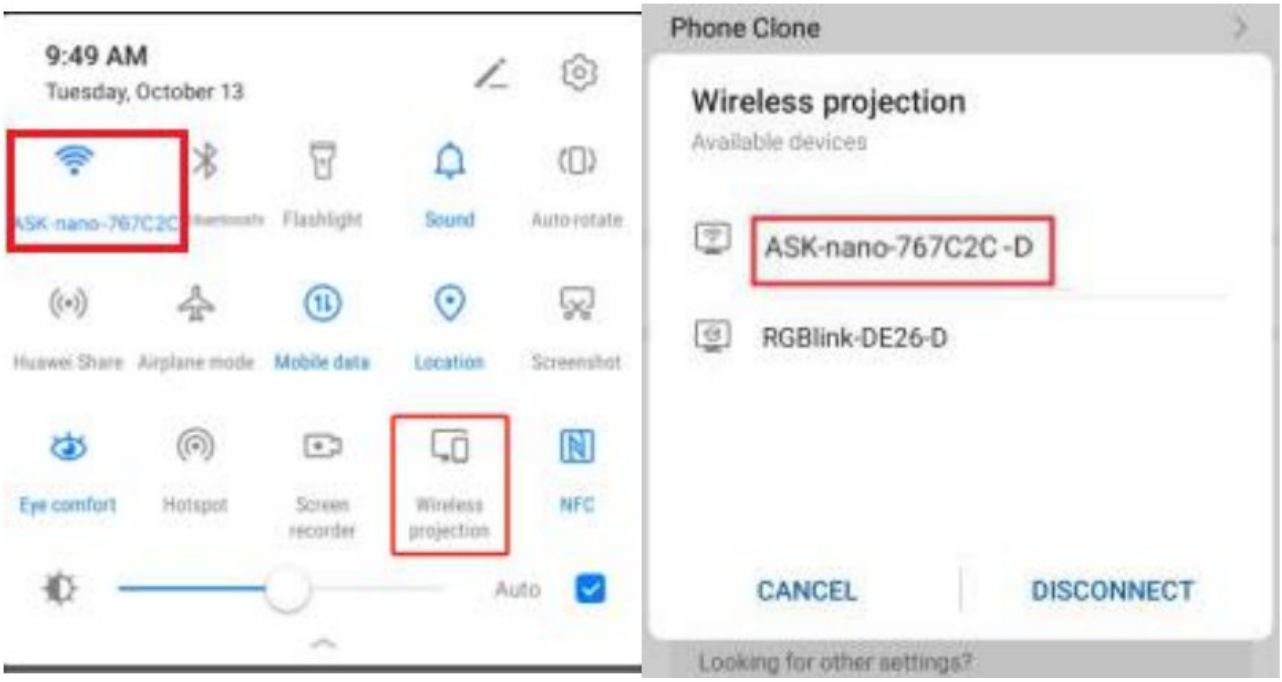
Miracast mode is designed for the Andriod device to project.

The screen projection steps of Android phones in Miracast Mode are as follows:

1. Press the button on the RX to enter Miracast Mode. The screen on the RX will show "Miracast Mode".



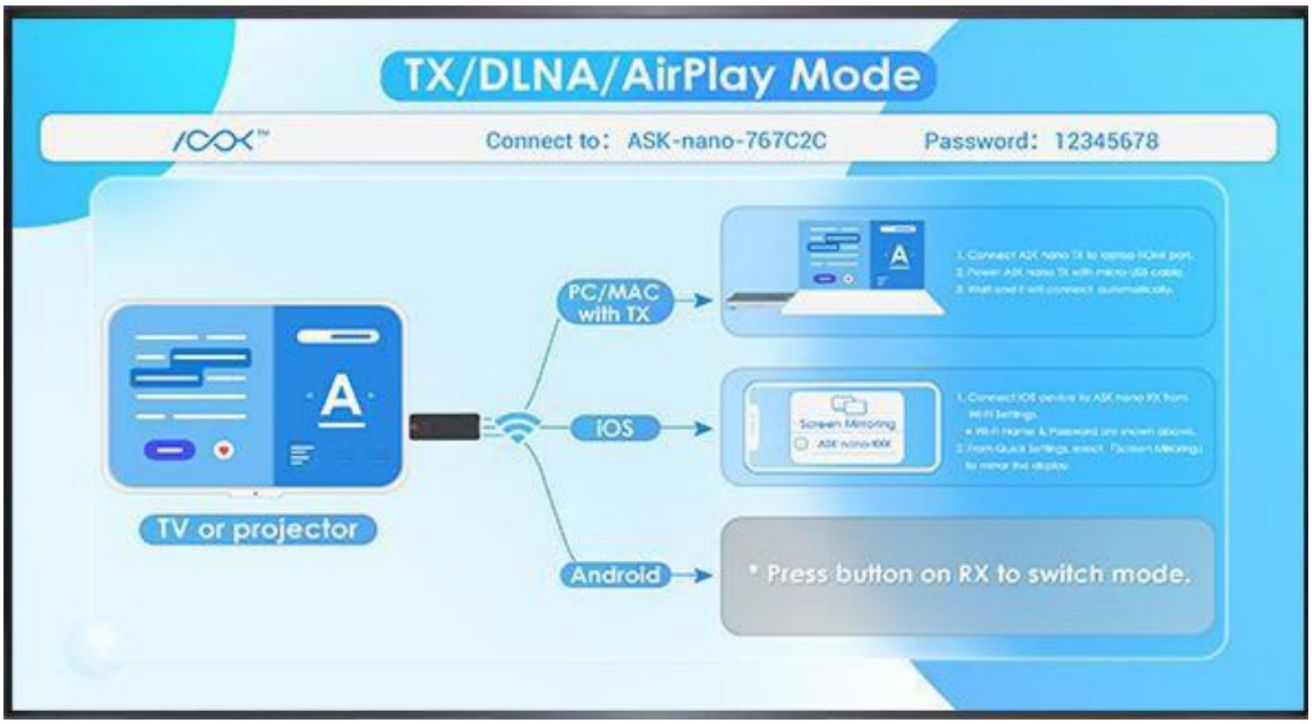
2. Find "Wireless Projection" in the general list, and select ASK nano from the list to project the current image of the phone.



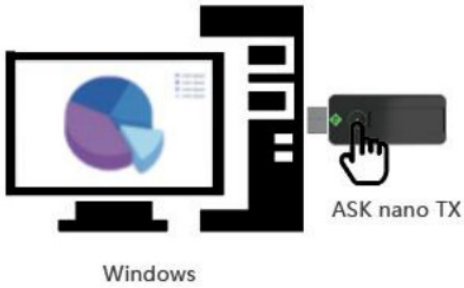
Tip: When clicking “Wireless Projection”, select “Yes” on the WLAN setting, and the mobile phone does not need to be connected to any LAN WIFI.

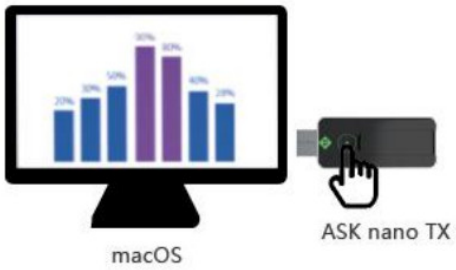
3.4 Demonstration Example

The demonstration example is based on a scene when using the Windows computer, macOS computer, Android phone, and iPhone simultaneously.



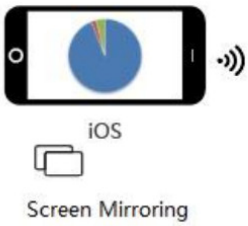
1. When using a Windows computer to project, plug TX HDMI, then the screen of the computer can be cast to the big display after several seconds;
2. If users want to cast another laptop, MacOS for example, plug HDMI of another paired TX to it, then the screen of the MacOS will replace that of the Windows computer. Press the button on the TX of the Windows computer, and the screen of the Windows computer will replace the MacOS one.





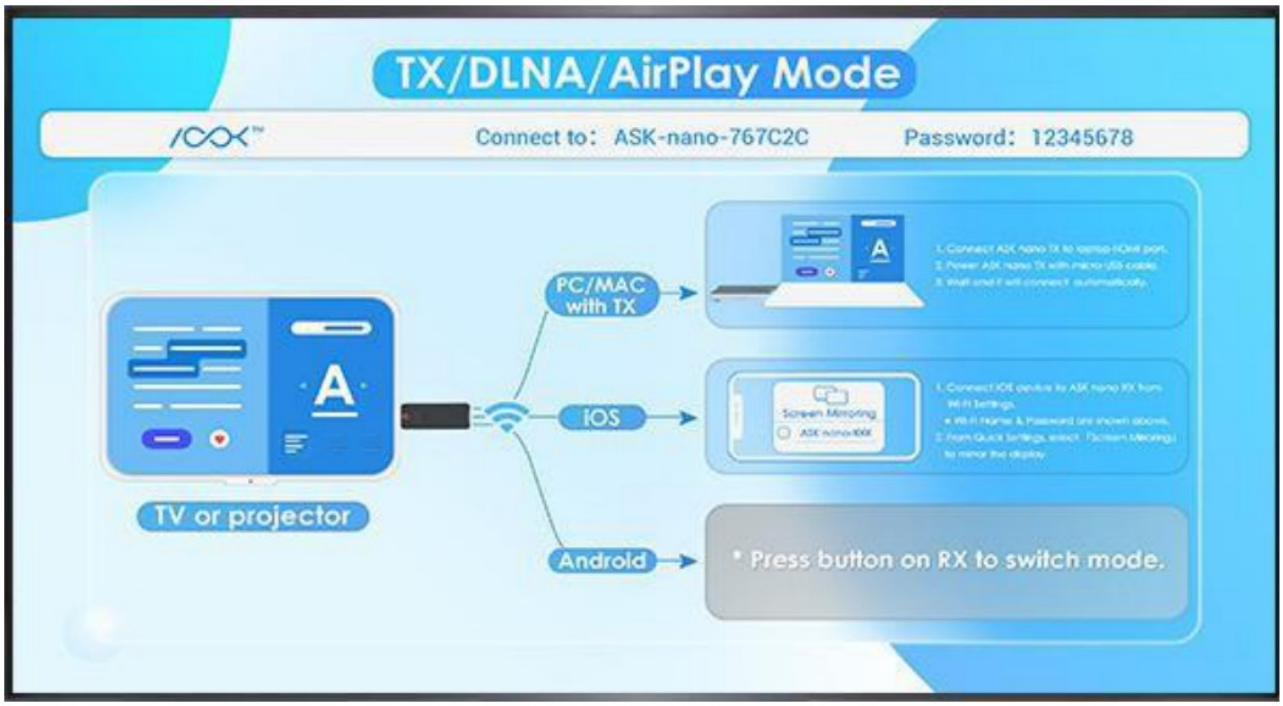
Push TX projection key and the current image of macOS computer wil replace that of Windows computer

3. When Andriod's smartphone screen is needed to cast, press the TX button to exit projection first and then press the RX button to switch to Miracast mode. Find Wireless Projection in setting and choose ASK-nano-XXXXX. The Android screen will be cast.
4. When an iOS device screen for example iPhone is required to display on the big screen, press the RX button again to switch back to TX/DLNA/Airplay mode. Connect to the ASK-nano-XXXXX in the wifi setting. Open up the Screen Mirroring list to find the ASK-nano-XXXXX-ITV, select it and the iPhone screen is cast.



3.5 Web Page Menu

After RX is connected to the big screen, the screen enters the homepage.

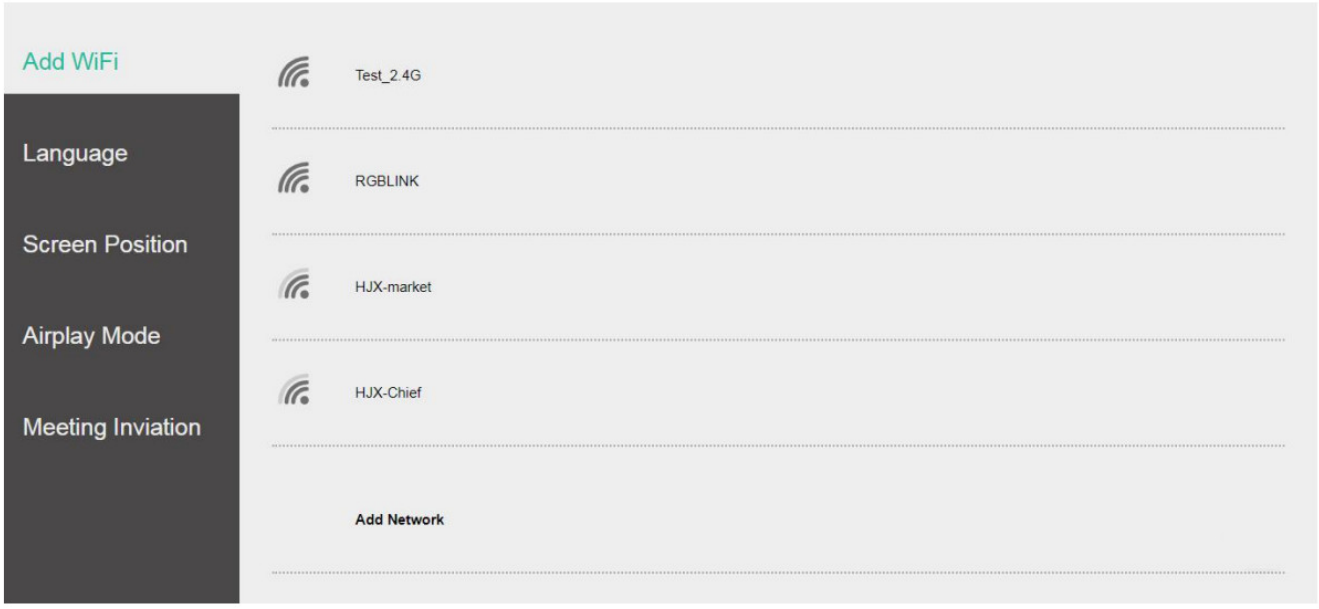


The steps to enter the menu are as follows:

1. Select and connect ASK-nano-XXXXXX from the WIFI List on your mobile phone or computer; RX hotspot name: ASK-nano-XXXXXX; Password: 12345678;
2. type the IP address 192.168.XX.1 of RX in the website bar on your phone or computer. An IP address is shown on the right corner of the homepage.

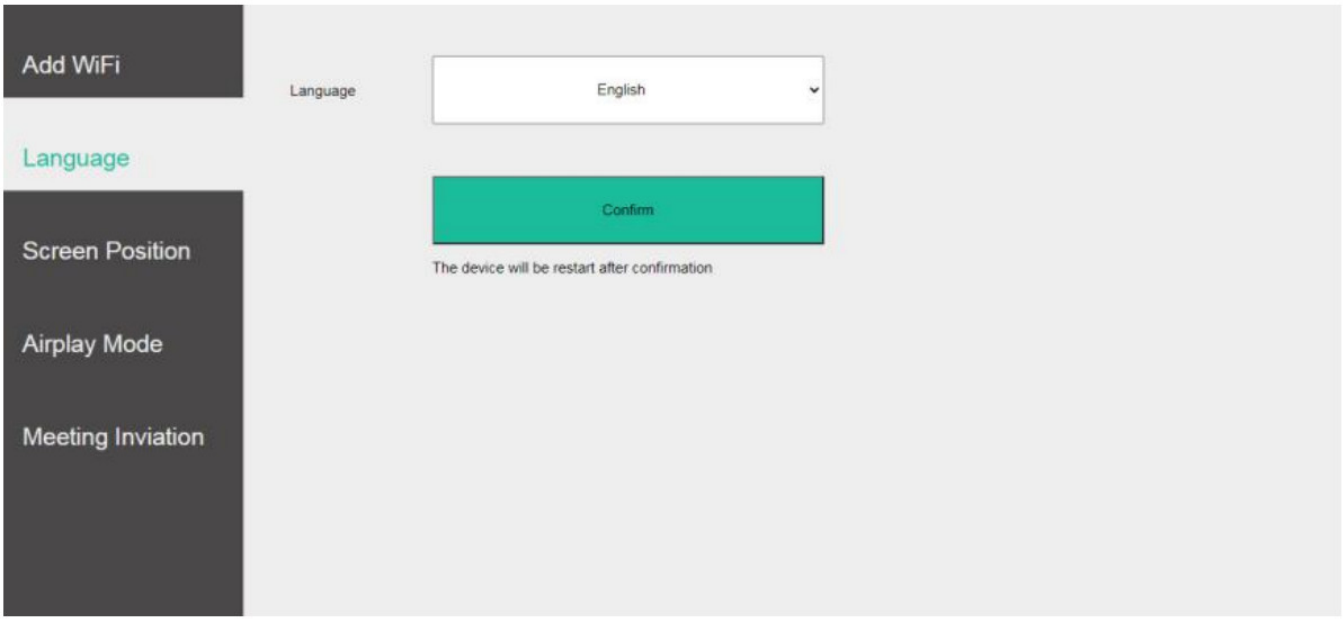
3.5.1 Add Wireless Network

1. Enter the web menu.



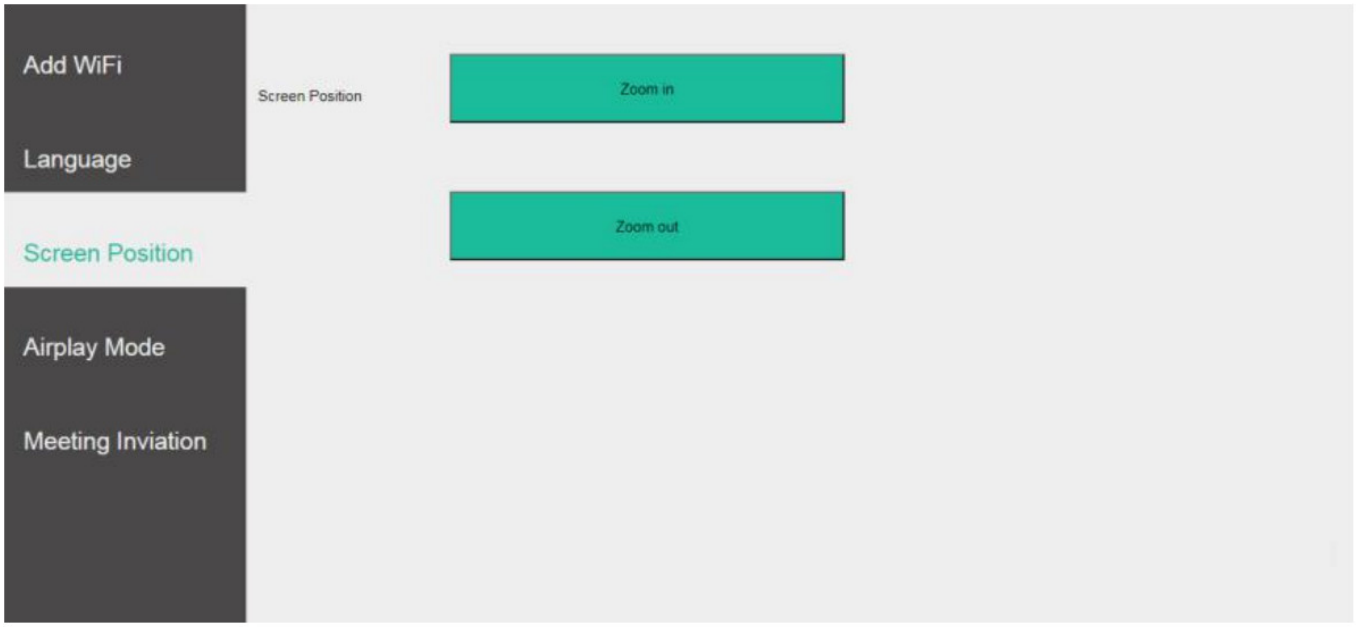
2. Click “Add WIFI” and select the network to be added from the WIFI list.

3.5.2 Language



For the time being, Ask nano support the English language only.

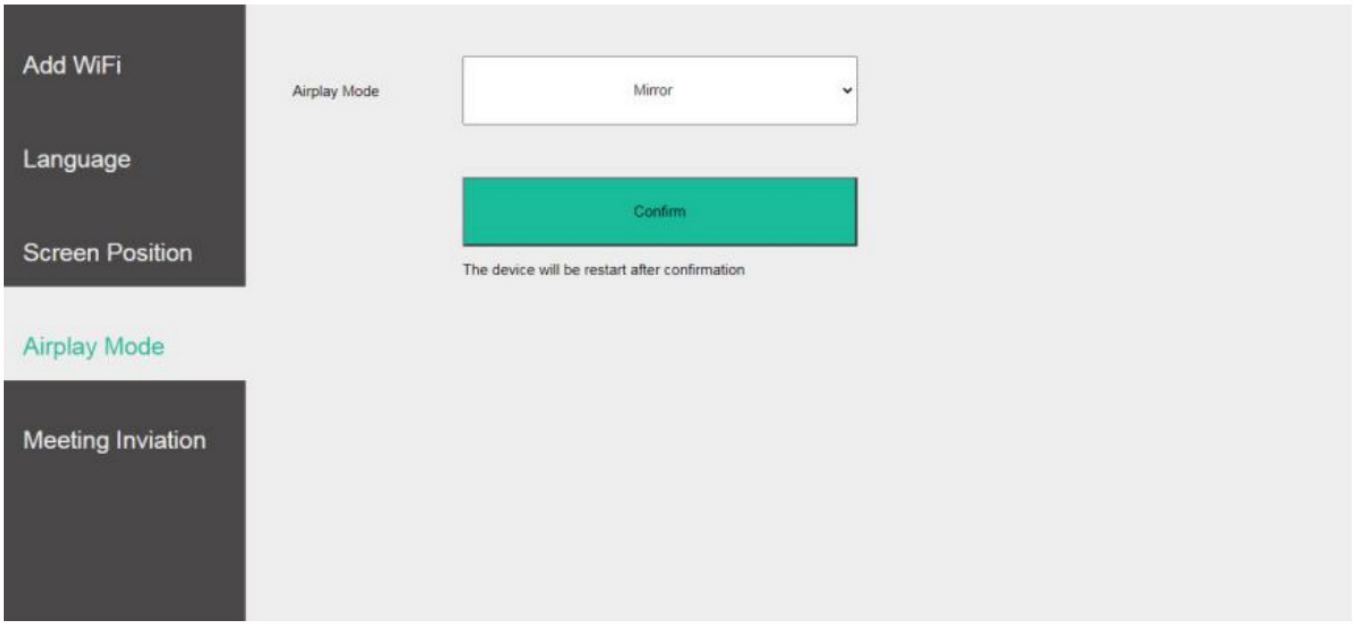
3.5.3 Screen Position



Click “Screen Position” to **Zoom in or Zoom out** the image of the big screen.

3.5.4 Airplay Mode

For devices that support AirPlay, users can select the screen projection mode of “Mirror” or “Streaming.”



” Mirror” means to cast the current image of the iOS device, while “streaming” means that when using iQIYI, Tencent, and other video APPs on the iOS device to play video, the video is only played on the big screen instead of on Below is an example when AirPlay is set as Streaming, the iQIYI video page on the iOS device:

Chapter 4 Order Codes

4.1 Product Code

450-0101-02-0…… ASK nano TX
450-1002-01-1 ……ASK nano Starter Set (TX*1+RX*1)

4.2 Optional Accessory

910-0013-01-0,…….. USB-C to HDMI Adapter

Chapter 5 Support

5.1 Contact Us

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Chapter 6 Appendix

6.1 FAQ

Trouble Shooting

Q: What if PC casting fails?

A:

- Press the switch on ASK nano RX to switch mode.
- Power the ASK nano TX by Micro-USB cable.
- Power your PC

Q: Why is there higher latency and picture distortion compared to HDMI cable?

A: Wireless transmission is a process of signal encoding and decoding, therefore, signal latency and picture distortion is unavoidable.

Q: What if the Android phone projection does not work?

A: Press the switch button on ASK nano RX to switch the casting mode.

Q: What are the differences between the two cast Mode?

A:

- TX/DLNA/AirPlay Mode

  ASKnano TXor iOS phone can cast in this mode
- Miracast Mode

  Android phones can cast in this mode ASKnano TX and iOSphone could not cast in this mode

Q: What if I want to exit PC projection?

A: Press button on ASK nano TX

6.2 Specification

Receiver

Connectors	Output	HDMI	1×HDMI-A
	Power	USB	1×microUSB
Performance	Output Resolutions	HDMI VESA	Up to 1920×1080@60
	Supported Standard	HDMI	1.3
Power	Input Voltage	DC 5V/0.5A	
	Max Power	2.5W	
Environment	Temperature	0℃~70℃	
	Humidity	10%~85%	
Physical	Weight	Net	0.026kg
		Packaged	0.24kg(TX*1+RX*1)
	Dimension	Net	85mm×32mm×13mm
		Packaged	120mm×120mm×50mm(TX*1+RX*1)

Transmitter

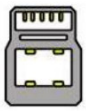
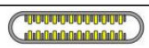
Connectors	Output	HDMI	1×HDMI-A
	Power	USB	1×microUSB
Performance	Input Resolutions	HDMI VESA	720×480@60 | 720×576@50| 1280×720@50/60 | 1920×1080@24/25/30/50/60
	Supported Standard	HDMI	1.3
Power	Input Voltage	DC 5V/0.5A	
	Max Power	2.5W	
Environment	Temperature	0℃~70℃	
	Humidity	10%~85%	
Physical	Weight	Net	0.027kg
		Packaged	0.24kg(TX*1+RX*1)
	Dimension	Net	85mm×32mm×13mm
		Packaged	120mm×120mm×50mm(TX*1+RX*1)

6.3 Terms & Definitions

- **RCA:** Connector used primarily in consumer AV equipment for both audio and video. The RCA connector was developed by the Radio Corporation of America.
- **BNC:** Stands for Bayonet Neill-Concelman. A cable connector is used extensively in television (named for its inventors). A cylindrical bayonet connector that operates with a twist-locking motion.
- **CVBS:** CVBS or Composite video is an analog video signal without audio. Most commonly CVBS is used for the transmission of standard definition signals. In consumer applications, the connector is typically RCA type, while in professional applications the connector is BNC type.
- **YPbPr:** Used to describe the color space for progressive scan. Otherwise known as component video.
- **VGA:** Video Graphics Array. VGA is an analog signal typically used on earlier computers. The signal is non-interlaced in modes 1, 2, and 3 and interlaced when used in mode
- **DVI:** Digital Visual Interface. The digital video connectivity standard was developed by DDWG (Digital Display Work Group). This connection standard offers two different connectors: one with 24 pins that handle digital video signals only and one with 29 pins that handle both digital and analog video.
- **SDI:** Serial Digital Interface. Standard definition video is carried on this 270 Mbps data transfer rate. Video pixels are characterized by a 10-bit depth and 4:2:2 color quantization. Ancillary data is included on this interface and typically includes audio or other metadata. Up to sixteen audio channels can be transmitted. Audio is organized into blocks of 4 stereo pairs. The connector is BNC.
- **HD-SDI:** high-definition serial digital interface (HD-SDI), is standardized in SMPTE 292M this provides a nominal data rate of 1.485 Gbit/s.
- **3G-SDI:** standardized in SMPTE 424M, consists of a single 2.970 Gbit/s serial link that allows replacing dual-link HD-SDI.
- **6G-SDI:** standardized in SMPTE ST-2081 released in 2015, 6Gbit/s bitrate and able to support 2160p@30.
- **12G-SDI:** standardized in SMPTE ST-2082 released in 2015, 12Gbit/s bitrate and able to support 2160p@60.
- **U-SDI:** Technology for transmitting large-volume 8K signals over a single cable. a signal interface called the ultra high definition signal/data interface (U-SDI) for transmitting 4K and 8K signals using a single optical cable. The interface was standardized as the SMPTE ST 2036-4.
- **HDMI:** High Definition Multimedia Interface: An interface used for the transmission of uncompressed high definition video, up to 8 channels of audio, and control signals, over a single cable.
- **HDMI 1.3:** was released on June 22, 2006, and increased the maximum TMDS clock to 340 MHz (10.2 Gbit/s). Support resolution 1920 × 1080 at 120 Hz or 2560 × 1440 at 60 Hz). It added support for 10 BPC, 12 BPC, and 16 BPC color depth (30, 36, and 48 bit/px), called deep color.
- **HDMI 1.4:** released on June 5, 2009, added support for 4096×2160 at 24 Hz, 3840×2160 at 24, 25, and 30 Hz, and 1920×1080 at 120 Hz. Compared to HDMI 1.3, 3 more features were added which are HDMI Ethernet Channel (HEC), audio return channel (ARC),3D Over HDMI, a new Micro HDMI Connector, and an expanded set of color spaces.
- **HDMI 2.0,** released on September 4, 2013, increases the maximum bandwidth to 18.0 Gbit/s. Other features of HDMI 2.0 include up to 32 audio channels, up to 1536 kHz audio sample frequency, the HE-AAC and DRA audio standards, improved 3D capability, and additional CEC functions.
- **HDMI 2.0a:** was released on April 8, 2015, and added support for High Dynamic Range (HDR) video with static metadata.
- **HDMI 2.0b:** was released in March 2016, supports HDR Video transport and extends the static metadata signaling to include Hybrid Log-Gamma (HLG).
- **HDMI 2.1:** was released on November 28, 2017. It adds support for higher resolutions and higher refresh

rates, Dynamic HDR including 4K 120 Hz and 8K 120 Hz.

- **DisplayPort:** A VESA standard interface primarily for video, but also for audio, USB, and other data. DisplayPort (DP) is backward compatible with HDMI, DVI, and VGA.
- **DP 1.1:** was ratified on 2 April 2007, and version 1.1a was ratified on 11 January 2008. DisplayPort 1.1 allow a maximum bandwidth of 10.8 Gbit/s (8.64 Gbit/s data rate) over a standard 4-lane main link, enough to support 1920×1080@60Hz
- **DP 1.2:** introduced on 7 January 2010, effective bandwidth to 17.28 Gbit/s support increased resolutions, higher refresh rates, and greater color depth, maximum resolution 3840×2160@60Hz
- **DP 1.4:** publish on 1 Mar 2016. overall transmission bandwidth of 32.4 Gbit/s, DisplayPort 1.4 adds support for Display Stream Compression 1.2 (DSC), DSC is a “visually lossless” encoding technique with up to a 3:1 compression ratio. Using DSC with HBR3 transmission rates, DisplayPort 1.4 can support 8K UHD (7680×4320) at 60 Hz or 4K UHD (3840×2160) at 120 Hz with 30 bit/px RGB color and HDR. 4K at 60 Hz 30 bit/px RGB/HDR can be achieved without the need for DSC.
- **Multi-mode Fiber:** Fibers that support many propagation paths or transverse modes are called multi-mode fibers, generally have a wider core diameter, and are used for short-distance communication links and for applications where high power must be transmitted.
- **Single-mode Fiber:** Fibers that support a single mode are called single-mode fibers. Single-mode fibers are used for most communication links longer than 1,000 meters (3,300 ft).
- **SFP:** small form-factor pluggable is a compact, hot-pluggable network interface module used for both telecommunication and data communications applications. optical fiber connector: terminates the end of an optical fiber, and enables quicker connection and disconnection than splicing. The connectors mechanically couple and align the cores of fibers so light can pass. 4 most common types of optical fiber connectors are SC, FC, LC, and ST.
- **SC:** (Subscriber Connector), also known as the square connector was also created by the Japanese company Nippon Telegraph and Telephone. SC is a push-pull coupling type of connector and has a 2.5mm diameter. Nowadays, it is used mostly in single-mode fiber optic patch cords, analog, GBIC, and CATV. SC is one of the most popular options, as its simplicity in design comes along with great durability and affordable prices.
- **LC:** (Lucent Connector) is a minor factor connector (uses only a 1.25mm ferrule diameter) that has a snap coupling mechanism. Because of its small dimensions, it is the perfect fit for high-density connections, XFP, SFP, and SFP+ transceivers. FC :(Ferrule Connector) is a screw-type connector with a 2.5mm ferrule. FC is a round-shaped threaded fiber optic connector, mostly used on Datacom, telecom, measurement equipment, and single-mode laser.
- **ST:** (Straight Tip) was invented by AT&T and uses a bayonet mount along with a long spring-loaded ferrule to support the fiber.
- **USB:** Universal Serial Bus is a standard that was developed in the mid-1990s that defines cables, connectors, and communication protocols. This technology is designed to allow a connection, communication, and power supply for peripheral devices and computers.
- **USB 1.1:** FullBandwidth USB, the specification was the first release to be widely adopted by the consumer market. This specification allowed for a maximum bandwidth of 12Mbps.
- **USB 2.0:** or HiSpeed USB, specification made many improvements over USB 1.1. The main improvement was an increase in bandwidth to a maximum of 480Mbps.
- **USB 3.2:** Super Speed USB with 3 varieties of 3.2 Gen 1(original name USB 3.0), 3.2Gen 2(original name USB 3.1), 3.2 Gen 2×2 (original name USB 3.2) with speed up to 5Gbps,10Gbps,20Gbps respectively.
- USB version and connectors figure:

	Type A	Type B	Mini A	Mini B	Micro-A	Micro-B	Type C
USB 2.0							
USB 3.0							
USB 3.1&3.2							

- **NTSC:** The color video standard used in North America and other parts of the world was created by the National Television Standards Committee in the 1950s. NTSC utilizes an interlaced video signal.
- **PAL:** Phase Alternate Line. A television standard in which the phase of the color carrier is alternated from line to line. It takes four full images (8 fields) for the color-to-horizontal images (8 fields) for the color-to-horizontal phase relationship to return to the reference point. This alternation helps cancel out phase errors. For this reason, hue control is not needed on a PAL TV set. PAL, is widely used in needed on a PAL TV set. PAL, is widely used in Western Europe, Australia, Africa, the Middle East, and Micronesia. PAL uses a 625-line, 50-field (25 fps) composite color transmission system.
- **SMPTE:** Society of Motion image and Television Engineers. A global organization, based in the United States, that sets standards for baseband visual communications. This includes film as well as video and television standards.
- **VESA:** Video Electronics Standards Association. An organization facilitating computer graphics through standards. HDCP: High-bandwidth Digital Content Protection (HDCP) was developed by Intel Corporation and is in wide use for the protection of video during transmission between devices.
- **HDBaseT:** A video standard for the transmission of uncompressed video (HDMI signals) and related features using Cat 5e/Cat6 cabling infrastructure.
- **ST2110:** A SMPTE-developed standard, ST2110 describes how to send digital video over IP networks. Video is transmitted uncompressed with audio and other data in a separate stream. SMPTE2110 is intended principally for broadcast production and distribution facilities where quality and flexibility are more important.
- **SDVoE:** Software-Defined Video over Ethernet (SDVoE) is a method for transmission, distribution, and management of AV signals using a TCP/IP Ethernet infrastructure for transport with low latency. SDVoE is commonly used in integration applications. Dante AV: The Dante protocol was developed for and widely adopted in audio systems for the transmission of uncompressed digital audio on IP-based networks. The more recent Dante AV specification includes support for digital video.
- **NDI:** Network Device Interface (NDI) is a software standard developed by NewTek to enable video-compatible products to communicate, deliver, and receive broadcast-quality video in high quality, low latency manner that is frame-accurate and suitable for switching in a live production environment over TCP (UDP) Ethernet-based networks. NDI is commonly found in broadcast applications.
- **RTMP:** Real-Time Messaging Protocol (RTMP) was initially a proprietary protocol developed by Macromedia (now Adobe) for streaming audio, video, and data over the Internet, between a Flash player and a server.
- **RTSP:** The Real-Time Streaming Protocol (RTSP) is a network control protocol designed for use in entertainment and communications systems to control streaming media servers. The protocol is used for establishing and controlling media sessions between endpoints.
- **MPEG:** Moving Picture Experts Group is a working group formed from ISO and IEC developing standards that allow audio/video digital compression and Transmission.

- **H.264:** AVC (Advanced Video Coding) or MPEG-4i is a common video compression standard. H.264 was standardized by the ITU-T Video Coding Experts Group (VCEG) together with the ISO/IEC JTC1 Moving Picture Experts Group (MPEG).
- **H.265:** Also known as HEVC (High-Efficiency Video Coding)H.265 is the successor to the widely used H.264/AVC digital video coding standard. Developed under the auspices of ITU, resolutions up to 8192×4320 may be compressed.
- **API:** An Application Programming Interface (API) provides a predefined function that allows access to capabilities and features or routines via software or hardware, without accessing source code or understanding the details of the inner working mechanism. An API call may execute a function and/or provide data feedback/report.
- **DMX512:** The communication standard developed by USITT for entertainment and digital lighting systems. The wide adoption of the Digital Multiplex (DMX) protocol has seen the protocol used for a wide range of other devices including video controllers. DMX512 is delivered over a cable of 2 twisted pairs with 5pin XLR cables for connection.
- **ArtNet:** An ethernet protocol based on TCP/IP protocol stack, mainly used in entertainment/events applications. Built on the DMX512 data format, ArtNet enables multiple “universes” of DMX512 to be transmitted using Ethernet networks for transport.
- **MIDI:** MIDI is the abbreviation of Musical Instrument Digital Interface. As the name indicates the protocol was developed for communication between electronical musical instruments and latterly computers. MIDI instructions are triggers or commands sent over twisted pair cables, typically using 5pin DIN connectors.
- **OSC:** The principle of the Open Sound Control (OSC) protocol is for networking sound synthesizers, computers, and multimedia devices for musical performance or show control. As with XML and JSON, the OSC protocol allows sharing of data. OSC is transported via UDP packets between devices connected on an Ethernet.
- **Brightness:** This usually refers to the amount or intensity of video light produced on a screen without regard to color. Sometimes called black level.
- **Contrast Ratio:** The ratio of the high light output level is divided by the low light output level. In theory, the contrast ratio of the television system should be at least 100:1, if not 300:1. In reality, there are several limitations. Well-controlled viewing conditions should yield a practical contrast ratio of 30:1 to 50:1.
- **Colour Temperature:** The color quality, expressed in degrees Kelvin (K), of a light source. The higher the color temperature, the bluer the light. The lower the temperature, the redder the light. Benchmark color temperatures for the A/V industry include 5000°K, 6500°K, and 9000°K.
- **Saturation:** Chroma, Chroma gain. The intensity of the color, or the extent to which a given color in any image is free from white. The less white in a colour, the truer the color or the greater its saturation. Saturation is the amount of pigment in a color, and not the intensity.
- **Gamma:** The light output of a CRT is not linear with respect to the voltage input. The difference between what you should have and what is actually output is known as gamma.
- **Frame:** In an interlaced video, a frame is one complete image. A video frame is made up of two fields, or two sets of interlaced lines. In a film, a frame is one still image of a series that makes up a motion image. Genlock: Allows synchronization of otherwise video devices. A signal generator provides a signal pulse that connected devices can reference. Also, see Black Burst and Color Burst.
- **Blackburst:** The video waveform without the video elements. It includes the vertical sync, horizontal sync, and the Chroma burst information. Blackburst is used to synchronize video equipment to align the video output.

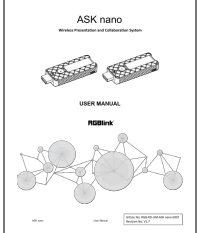
- **ColourBurst:** In color TV systems, a burst of subcarrier frequency is located on the back part of the composite video signal. This serves as a color synchronizing signal to establish a frequency and phase reference for the Chroma signal. The Colour burst is 3.58 MHz for NTSC and 4.43 MHz for PAL.
- **Colour BarsA:** standard test pattern of several basic colors (white, yellow, cyan, green, magenta, red, blue, and black) as a reference for system alignment and testing. In the NTSC video, the most commonly used color bars are the SMPTE standard color bars. In the PAL video, the most commonly used color bars are eight full-field bars. On computer monitors, the most commonly used color bars are two rows of reversed color bars
- **Seamless Switching:** A feature found on many video switchers. This feature causes the switcher to wait until the vertical interval to switch. This avoids a glitch (temporary scrambling) which often is seen when switching between sources.
- **Scaling:** A conversion of a video or computer graphic signal from a starting resolution to a new resolution. Scaling from one resolution to another is typically done to optimize the signal for input to an image processor, or transmission path or to improve its quality when presented on a particular display.
- **PIP:** Picture-In-Picture. A small image within a larger image is created by scaling down one of the images to make it smaller. Other forms of PIP displays include Picture-By-Picture (PBP) and Picture-With-Picture (PWP), which are commonly used with 16:9 aspect display devices. PBP and PWP image formats require a separate scaler for each video window.
- **HDR:** is a high dynamic range (HDR) technique used in imaging and photography to reproduce a greater dynamic range of luminosity than what is possible with standard digital imaging or photographic techniques. The aim is to present a similar range of luminance to that experienced through the human visual system.
- **UHD:** Standing for Ultra High Definition and comprising 4K and 8K television standards with a 16:9 ratio, UHD follows the 2K HDTV standard. A UHD 4K display has a physical resolution of3840x2160 which is four times the area and twice both the widthandheightofaHDTV/FullHD (1920 x1080) video signal.
- **EDID:** Extended Display Identification Data. EDID is a data structure used to communicate video display information, including native resolution and vertical interval refresh rate requirements, to a source device. The source device will then output the provided EDID data, ensuring proper video image quality.

6.4 Revision History

The table below lists the changes to the ASK nano User Manual.

Format	Time	ECO#	Description	Principal
V1.0	2020-12-07	0000#	Release	Sylvia
V1.1	2021-01-18	0001#	1. Modify RX and TX pairing method 2. Add Meeting Invitation 3. Add a cable to connect TX and Android phone.	Sylvia
V1.2	2021-04-22	0002#	1. Revise the description	Sylvia
V1.3	2021-06-08	0003#	1. Add FAQ	Sylvia
V1.4	2021-11-18	0004#	1. Add a 2.4G wireless cable connection diagram 2. Add FAQ–7	Sylvia
V1.5	2022-01-18	0005#	1. Delete HDMI adapter accessory	Sylvia
V1.6	2022-02-28	0006#	1. Update resolution of TX/RX	Sylvia
V1.7	2022-05-10	0007#	1. Update resolution of TX 2. Update the projection page of RX	Aster

Documents / Resources

	RGBlink ASKnano Wireless Presentation and Collaboration System [pdf] User Manual ASKnano Wireless Presentation and Collaboration System, Wireless Presentation and Collaboration System, Collaboration System

References