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PILOT CHECKLIST
CURIOPlayer X5

Thank you for testing PlayNetwork's CURIOPlayer X5. Within this document, you will find everything that you need to know in order to get started with your CURIOPlayer X5 pilot test.

Feel free to contact your Sales or Client Management contact with any questions.

ABOUT THE CURIOPLAYER X5

Specifications

- Small form factor: 5" x 5"x 0.9" - 7 ounces
- Processor: dual-core
- Cortex A9 processor
- CPU: quad-core mali 400
- OS: Android™ 4.1.1
- Memory: 1 GB DDR3
- Internal storage: 16 GB NAND flash, 10 GB media storage
- External storage: SD card up to 64 GB
- Audio output: dual-zone mono
- Network: ports 80, 443 TCP and 53 TCP/UDP
- One-year warranty
- Power: 240 VAC Rated, DC 5V, 3A adapter included (CE, FCC, CCC certified)

CURIOPlayer X5 Network Requirements

Unrestricted outbound Internet access on HTTP and HTTPS (TCP ports 80, 443 and 53 TCP/UDP)

Content Security

- Content is encoded in a proprietary format that is unreadable and unplayable by other applications and devices
- Content is securely delivered to the CURIOPlayer X5 over HTTPS
- CURIOPlayer X5 does not accept inbound TCP connections

How it Works

The CURIOPlayer X5 communicates with cloud services to perform the following operations:

Retrieves content and scheduling updates, configuration changes, and PlayNetwork software updates.

Posts current diagnostics information for PlayNetwork Customer Support.

Connects to PlayNetwork Content Delivery Network cloud services.

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CURIOPLAYER X5 SET-UP GUIDE

1 Plug the network cable into the CURIOPlayer X5 and the other end into a port on the router.

2 Place the CURIOPlayer X5 on or near the amplifier.

3 Move the amplifier so that the back is visible and accessible. Connect the RCA cable to the CURIOPlayer X5 into the port closest to the power button. Next, connect the other end of the audio cable into your amplifier. The connections are dependent upon the brand and model of your amplifier.

4 Plug the power cable into the CURIOPlayer X5 and then into an existing surge protector or outlet. The player will automatically power up and start playing music; this usually takes about a minute. Music will play even when not connected to the Internet. It may be helpful to have a store partner confirm that music is playing in the store since music may not be audible in the back room.
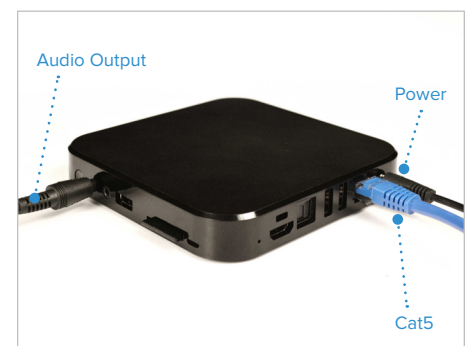
A blue light on the front panel will light up when the player is on. Turn on the amplifier and be ready to adjust the volume. If music doesn't begin playing within 2 minutes, unplug the power cable and plug it back in. This will restart the CURIOPlayer X5.

5 Using the most recent version of Chrome or Safari, navigate to https://curioplayer.apps.playnetwork.com. Enter your CURIOPlayer X5 player MAC address* in the box, and click Go. Characters must be in all lowercase, each pair of characters separated by a colon. Login to the user interface using the credentials provided to you by PlayNetwork.

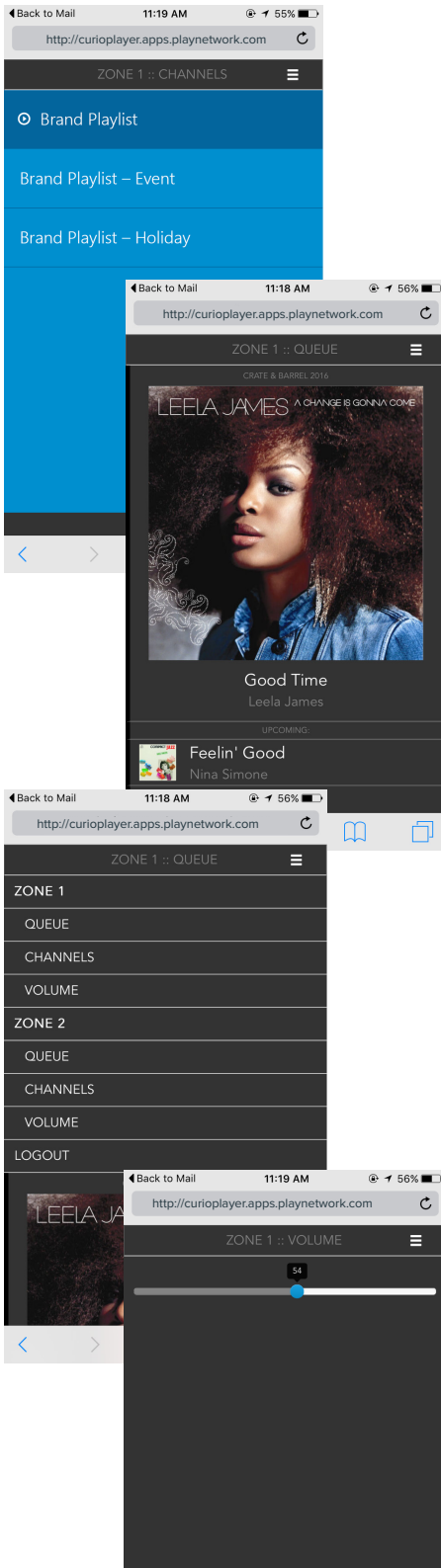*The CURIOPlayer X5 MAC address can be found on the side of the device, and is 12 characters.*

Amplifier Connection

For a one-zone concept plug the white end of the RCA cable into Line in on the back of your amplifier.

CURIOPLAYER X5 UI

Channel View

- View list of available channels (if applicable).
- Tap (or click) on the channel name to change default channel.
- Change takes effect at end of currently queued songs.

Play Queue

- The song name and title featured at the top of the screen indicates what is currently playing.
- Scroll down to see what songs are up next.

Navigation Menu

- From any view, tap (or click) the 3 bar icon to reveal the main menu.
- Tap (or click) the zone queue or channels to control the music playback (if applicable).

Adjust Volume

- From the main menu, tap (or click) the navigation item called "volume" to reveal the volume bar.
- Tap (or click), hold, and move the slider left to decrease the volume and right to increase the volume.
- Use the icon in the top right corner to navigate back to the queue.

CURIOPLAYER X5 UI

Router/Firewall Settings

Preferred Method

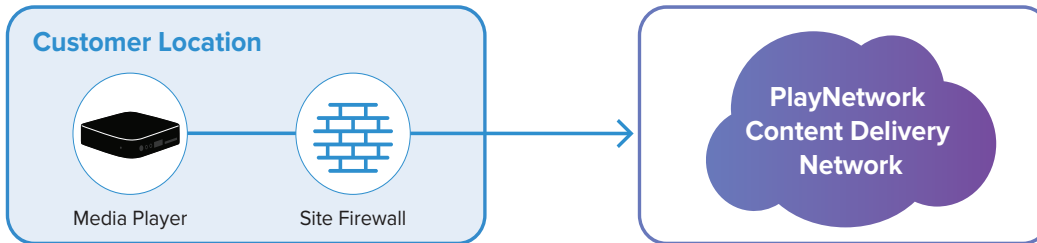| Source	Destination	Port / Protocol	Outbound	Inbound
Player VLAN or Player IP	Any	443 (TCP)	Allow	Deny
Player VLAN or Player IP	Any	80 (TCP)	Allow	Deny
Player VLAN or Player IP	client selected DNS server	53 (UDP)	Allow	Deny

Alternate Option 1

Source	Destination	Port / Protocol	Outbound	Inbound
Player VLAN or Player IP	*apps.playnetwork.com	443 (TCP)	Allow	Deny
Player VLAN or Player IP	*apps.planetwork.com	80 (TCP)	Allow	Deny
Player VLAN or Player IP	client selected DNS server	53 (UDP)	Allow	Deny

Alternate Option 2

Source	Destination	Port / Protocol	Outbound	Inbound
Player VLAN or Player IP	curioplayer.apps.playnetwork.com	443 (TCP)	Allow	Deny
Player VLAN or Player IP	curioplayer.apps.playnetwork.com	80 (TCP)	Allow	Deny
Player VLAN or Player IP	client selected DNS server	53 (UDP)	Allow	Deny

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CURIOPLAYER X5 NETWORK REQUIREMENTS

Network Topology

Customer Location

Media Player   Site Firewall

PlayNetwork Content Delivery Network

Please contact your IT department or network service provider to make the following changes for the CURIOPlayer.

Player Network Requirements

- IP address via DHCP or static (IP address, gateway, subnet mask, primary DNS, and secondary DNS)

- DNS resolution

- Internet access to communicate with PlayNetwork's Content Delivery Network

Router / Firewall settings

Preferred Method

Whitelist using the following preferred method:

Source	Destination	Port / Protocol	Outbound	Inbound
Player VLAN or Player IP	Any	443 (TCP)	Allow	Deny
Player VLAN or Player IP	Any	80 (TCP)	Allow	Deny
Player VLAN or Player IP	client selected DNS server	53 (UDP)	Allow	Deny

Items in bold are recommended.

CURIO PLAYER X5 NETWORK REQUIREMENTS

Alternate Option 1

Source	Destination	Port / Protocol	Outbound	Inbound
Player VLAN or Player IP	*.apps.playnetwork.com	443 (TCP), 80 (TCP)	Allow	Deny
Player VLAN or Player IP	*.hs.llnwd.net	443 (TCP)	Allow	Deny
Player VLAN or Player IP	*.cloudfront.net	443 (TCP)	Allow	Deny
Player VLAN or Player IP	client selected DNS server	53 (UDP)	Allow	Deny

Items in bold are recommended

Alternate Option 2

(URLs are subject to change.)

| Source	Destination	Port / Protocol	Outbound	Inbound
Player VLAN or Player IP	playnet.hs.llnwd.net	443 (TCP)	Allow	Deny
Player VLAN or Player IP	gc-device-api.apps.playnetwork.com	443 (TCP)	Allow	Deny
Player VLAN or Player IP	master-gc-key-api.apps.playnetwork.com	443 (TCP)	Allow	Deny
Player VLAN or Player IP	master-player-svc.apps.playnetwork.com	443 (TCP)	Allow	Deny
Player VLAN or Player IP	master-gc-playback-api.apps.playnetwork.com	443 (TCP)	Allow	Deny
Player VLAN or Player IP	schedule.apps.playnetwork.com	443 (TCP) & 80 (TCP)	Allow	Deny
Player VLAN or Player IP	connectivity.apps.playnetwork.com	80 (TCP)	Allow	Deny
Player VLAN or Player IP	client selected DNS server	53 (UDP)	Allow	Deny
Player VLAN or Player IP	*.cloudfront.net	443 (TCP)	Allow	Deny
Player VLAN or Player IP	content-api.apps.playnetwork.com	443 (TCP)	Allow	Deny
Player VLAN or Player IP	cloud.apps.playnetwork.com	443 (TCP)	Allow	Deny

Items in bold are recommended

Installation Tips

- PlayNetwork recommends the media player utilize a private IP address and is installed on a non-PCI guest or vendor network that does not require authentication.

- If a login is required for the guest network, the media player's MAC address must be filtered to bypass the login before plugging the player into the network. The MAC address is located on the player. Player reboot is required after the MAC has been filtered.

- Enable Auto-Negotiation and Auto-Duplex on the network port the player is using.

- Enable PortFast on the port to enable the player to obtain a DHCP address.

- Disable port security so MAC filtering is not required on the port.

CURIOPLAYER X5 **CONNECTIVITY TOOL**

Troubleshooting

To test network connectivity:

- Disable WiFi on your laptop.

- Remove the Ethernet cable connected to the CURIOPlayer and plug it into a laptop to test the port/cable.

- Use Chrome to browse to the following website: https://connectivity.apps.playnetwork.com/
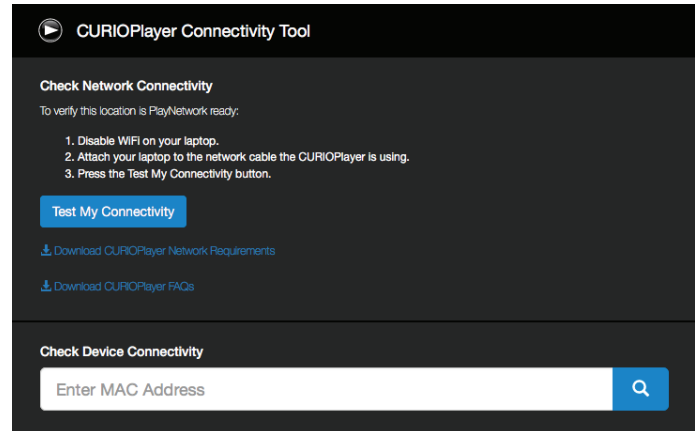
Click Test My Connectivity button:

- Results of the test will be displayed. If you see a hostname in red, contact your IT department or network provider to whitelist that hostname.

- After your IT department or network provider has made the appropriate changes, run the test again until all tests have passed.

- After confirming that all tests have passed, please reconnect the network cable to the CURIOPlayer and then power cycle the player.

CURIOPLAYER X5 TECHNICAL QUESTIONS

How It Works

How does the CURIOPlayer communicate with PlayNetwork systems?

The CURIOPlayer initiates a connection to PlayNetwork's content delivery network. The CURIOPlayer sends periodic status information throughout the day, but only retrieves content updates, configuration changes, and PlayNetwork application updates during a specified download window.

How are network settings added to the CURIOPlayer?

The CURIOPlayer ships pre-configured with either DHCP or customer provided static IP addressing.

Does the CURIOPlayer stream music?

No, the CURIOPlayer does not stream audio. The CURIOPlayer only plays content that is located on the CURIOPlayer's local storage.

CURIOPlayer Network Configuration

Should the CURIOPlayer utilize DHCP or a static IP address?

The CURIOPlayer can utilize either DHCP or static settings. It can be configured with the settings that best fit your network infrastructure.

What information is required for the player to use a static IP?

The following will need to be provided to PlayNetwork for each location: static IP address, gateway, subnet mask, primary DNS, and secondary DNS.

Can the CURIOPlayer use a public IP address?

A public IP address is not recommended for the CURIOPlayer. PlayNetwork recommends the CURIOPlayer utilize a private IP address and is on a non-PCI guest or vendor network that does not require authentication.

Can a public DNS be used?

Yes, if a public DNS is used, TCP/UDP port 53 is required to be opened for outbound traffic from the player.

Can the network settings change after the player is online at the customer location?

Yes, the player's network settings can change. The customer will need to notify PlayNetwork prior to when the changes need to take effect. PlayNetwork will adjust the network settings on PlayNetwork servers. The CURIOPlayer will check into the server and download the new network settings.

How does the player synchronize time?

The local player time is synced by contacting PlayNetwork servers.

Content, Updates, and Bandwidth

How does the CURIOPlayer get content?

The CURIOPlayer ships pre-loaded with music content and downloads new content when available.

How large are music updates and how often do music updates happen?

Downloads range between 50-120MB. Downloads typically occur once per month.

How does PlayNetwork ensure the delivery of content to the correct player?

The delivery of the correct content to the CURIOPlayer from the PlayNetwork CDN is based on the device ID and the music concept attached to the ID.

What is the recommended minimum bandwidth requirement for the CURIOPlayer?

T1 (1.5Mbps) is the minimum bandwidth recommended per location.

Is it possible to throttle the amount of bandwidth each location utilizes for downloads?

Yes, bandwidth throttling is available. Throttling options include 256Kbps, 512Kbps, 1Mbps, 2Mbps, and 4Mbps. Throttling options are set by PlayNetwork. The default throttle is 1Mbps. (Using a different throttle option per location is not supported.)

Can a download window be configured so music downloads only happen during off-peak business hours?

Yes, download windows may be configured. An example of a typical download window is 1am-5am.

The download window is based on the player's local time. The default download window is open 24 hours.

What happens when a content download is interrupted or cannot finish during the download window?

If the CURIOPlayer does not complete a content download within the download window, it will attempt to continue the content download during the next download window.

CURIOPLAYER X5 **TECHNICAL QUESTIONS**

How long does a music download take assuming a typical 100MB music update per month?

Bandwidth throttle	Time for download to complete (once per month)
1Mbps	Approximately 15 minutes
512Kbps	Approximately 30 minutes
256Kbps	Approximately 1 hour

Note: These are theoretical estimates based on online download calculators.
PlayNetwork recommends testing the player in the customer environment to obtain real-world estimates.

Can IP addresses be used instead of URLs for whitelisting?

No, URLs are required because the hosted load-balancers do not have statically assigned IP addresses.

Can firewall rules use wildcards instead of a using the fully qualified domain name (FQDN) to limit the number of firewall rules required?

Yes, wildcards may be used if your firewall supports it.

Can the player be installed in a location with open outbound ports such as a vendor or guest network?

Yes, the CURIOPlayer may be installed on a network with ports 443 (TCP), 80 (TCP), and 53 (TCP/UDP) open outbound. PlayNetwork recommends the CURIOPlayer utilize a private IP address and is installed on a non-PCI guest or vendor network that does not require authentication.

Can the CURIOPlayer be installed on a network with a login or splash page?

Yes, however if a login is required, the CURIOPlayer's MAC address must be filtered to bypass the login BEFORE plugging the player into the network. (The Ethernet MAC address is listed on the player.)

Can the player use a proxy?

Yes, the CURIOPlayer can be configured to utilize a proxy. Websockets must be enabled to access the player UI and for other functionality. If your location utilizes a proxy, the following will be required:

- Proxy name
- Proxy port
- Username and password (if authentication is required)

Is music content securely delivered?

- Content is securely delivered to the CURIOPlayer X5 over HTTPS.
- Content is in a proprietary format that is unreadable and unplayable by other applications and devices.
- CURIOPlayer X5 does not accept inbound TCP connections.

Does the CURIOPlayer only allow connections initiated by the player?

Yes, all connections are initiated by the player.

Should content filtering or deep packet inspection be disabled?

Yes, disable content filtering or bypass deep packet inspection for the player.

How should the network port be configured?

- Enable Auto-Negotiation and Auto-Duplex on the network port the player is using.
- Enable PortFast on the port to enable the player to obtain a DHCP address.
- Disable port security so MAC filtering is not required on the port.

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CURIOPLAYER X5 TESTING CHECKLIST

Player Form Factor

Player fits within desired rack/storage space

Yes   No

Player box includes the following:

CURIOPlayer X5

Power supply

6 ft. 1/8th in. – 3.5 mm stereo to dual male RCA audio cable

14 foot Cat5e network cable

Installation

Installation instructions are easy to follow

DISAGREE   1   2   3   4   5   AGREE

Comments:

Music plays on Zone 1 within 2 minutes

Yes   No

Music plays on Zone 2 (If applicable)

Yes   No

Audio messages play (if applicable)

Yes   No

NowPlaying information is accurate (if applicable)

Song Title   Yes   No

Artist   Yes   No

Album   Yes   No

Information displayed represents what song is being heard

Yes   No

Network Connection

Connects via DHCP (or via static IP if applicable: configured at the time of provisioning)

Yes   No

Player outputs sound from the audio port when online

Yes   No

Player outputs sound from the audio port when offline (from memory)

Yes   No

Player Web UI

CURIOPlayer Web UI was accessible

Yes   No

Channel select function works properly

Yes   No

User instructions were easy to follow

Yes   No

Volume control function works properly

Yes   No

Comments:

CURIOPLAYER X5 TESTING CHECKLIST

Bandwidth and Connectivity

When viewing the PlayNetwork Connectivity web application, it is clear how to use the tool

DISAGREE   1   2   3   4   5   AGREE

Comments:

With a laptop directly connected to the network port, are all results passing after clicking the "Test My Connectivity" button within the Connectivity Tool

Yes   No

After connecting the player to the desired network port, are all results green when entering the MAC address in the "Check Device Connectivity" field of the Connectivity Tool

Yes   No

Player operates within download timeframes

Yes   No

Player operates within throttling rules

Yes   No

Test actual bandwidth consumed based on "real world" network conditions

Average Kbps during a scheduled content update window:

_____

Average Kbps outside of a scheduled content update window:

_____