



NETTHINGS UNIVERSAL DISPLAY

USER GUIDE



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GETTING STARTED

This version of the User Guide has been updated for Software Version 2.1.7 of the NetThings Display. Where required, please visit <u>www.netthings.co.uk/support</u> for software versions and information.

1.1 POWERING UP THE DISPLAY

The NetThings Display will start up and launch when an active power source is applied to the DC jack connector. In the situation where power is removed from the display, the battery will eventually deplete and the display will switch off, however, as soon as the power source is re-established, the display will start and launch into any content that has been setup. Previous versions required a button press to enable the device.



RESTARTING THE DISPLAY

Once running the NetThings application, the display can be restarted at any point by making a single press to the power button. Access to the power button is located on the right hand side of the display using the allen key provided.



Do not apply excessive force to the button.

The Display can also be rebooted or switched off by pressing and holding the power button. A pop-up option will appear and the following options are available.

Operation of the second secon



NOTE: On older versions the automatic start up on power was not included. In this case, follow this procedure:

- Press the power button once quickly and release. The battery indicator should appear.
- Once the battery indicator is on the screen, press the power button again, but hold the button on.
- When the battery indicator disappears and a screen showing 4 penguins appears, release the power button.
- The unit will now power up.



During the start up process, the following screens will be observed. No user input is required at this point.





::::



SETTING THE LOCALE

When the Display starts for the first time, or there are no historical settings, the following option screen will be shown. Select the desired language and the time can also be set here if incorrect.

Unselect the tick box if this dialog box is not required again. Locale configuration is also available in *GENERAL SETTINGS*. Click *OK* to continue.



CONNECTING TO A SOURCE

Making a connection to a DHCP router

This section describes the process connecting to a network with DHCP. If a Static IP connection is required, go to either section 2.3 or 2.4 and complete, then return to section 2.2.

If there are no historical settings, an option of WIFI or ETHERNET will be available. Choose the required option.

2.1

For WIFI connection follow the steps below. WPS can be used as an optional connection method. For ETHERNET connection skip

to section 2.2.

6.0.1 F716XR_2018-04-27		
	Connection Type	
	TAP HERE FOR SETTINGS	

WIFI connection only

Select the Network from the list that has been discovered. (See next page for alternative option to use WPS if preferred)

Wi-F		:
On		•
▼.	NT_0004A36D2471	
	ewifi	
▼.	NWifi	
₹.	NT_0004A36D2FBE	
₹.	NT_0004A36D167B	
₹.	NT_0004A36D4C72	
₹.	NT_0004A36D424D	
₹.	NT_0004A36D3BC2	
E	ACK	NEXT

WIFI connection only

Enter the password for the network and click *CONNECT*.



Skip the WPS sections if the password has been entered via the keypad.

WIFI connection only

Alternative method using WPS

If WPS is available on the Network, select the top right hand tap and select *Advanced*

Wi-Fi	Add network
On	Refresh
NT_0004A36D2FBE	Advanced
🔨 ewifi	
🔨 NWifi	
NT_0004A36D2471	
NT_0004A36D3BC2	
🖡 NT_0004A36D424D	
NT_0004A36D4C72	
🖡 NT_0004A36D167B	
BACK	NEXT

WIFI connection only

Alternative method using WPS

Select *WPS Push Button* feature and enable WPS on the Source.

← Advanced Wi-Fi
Network notification Notify whenever a public network is available
Keep Wi-Fi on during sleep Always
Install certificates
Wi-Fi Direct
WPS Push Button
WPS Pin Entry
MAC address 18.fe/34.73:ed:f9
IP address Unavailable

WIFI connection

Alternative method using WPS

The WPS system should connect.

Advanced Wi-Fi Network notification Notify whenever a public network is available Keep Wi-Fi on during sleep Aways Install certificates Wi-Fi Direct WPS Push Button WPS Pin Entry MACadress 18/e34/73/ardr19

Using either the password method or via WPS, a connection to the network should now be present. Click Next

Wi-F	ï	
On		•
▼.	ewifi Connected	
-	NT_0004A36D2471	
T	NT_0004A36D2FBE	
-	NT_0004A36D167B	
-	NT_0004A36D4C72	
-	NWifi	
-	NT_0004A36D424D	
	BACK	NEXT

2.2

Manage and Display Content

The application will now search and find all sources available on the network.

6.0.1 F716XR_2018-04-27			AF	PP Version: 2.1.7+rev	.c7d7773
	ding Content So				

Once search and discovery is		
complete, the Networks and		
Content Sources configuration		
screen is shown.		

Display Content in Kiosk Mode 중 SSID: ewifi 00507fea0a40 10.0.0.1 245ebe026efe 10.0.0.3 109836b3896e 10.0.0.4 109836b3896c 10.0.0.5 • 00155d503700 • 00c0b7eda6e4 10.0.0.10

 \equiv Networks and Content Sources

The discovery process will list the MAC address and associated IP addresses. The list is sorted by IP address in ascending order.

Select the desired Source by clicking on the blue arrow. This will add it to the content to be displayed.

Any number of sources can be selected, or if desired, the same source can be selected numerous times, with a different manually added URL. This could be different content, for example web pages, from the same source.

\equiv Networks and Content Sources	
중 SSID: ewifi	Display Content in Kiosk Mode
(to switch to Ethernet, plug in Ethernet cable and reboot) C Sources visible on current network	 ✓ 0004a36d2471 SSID: ewifi
08002767c537 10.0.0.117	•
080027d8cf7f 10.0.0.118	•
0862667e6110 10.0.0.120	•
28f10e3376cc 10.0.0.121	•
0004a36d2471 10.0.0.123	•
00155d503701 10.0.0.124	•
ADD SOURCE MANUALLY	PREVIEW

Click on the box to expand and view configuration options.

- The source can be renamed if required.
- Https can be enabled.
- A custom URL can be added. Include any custom port numbers in the URL, :8080, :8443 etc. A colon must be used before port numbers.
- Click to collapse the box and save any changes.

■ Networks and Content Sources		
중 SSID: ewifi		Display Content in Kiosk Mode
(to switch to Ethernet, plug in Ethernet cable and reboot) C Sources visible on current network		▲ 0004a36d2471 📰
080027d8cf7f 10.0.0.118	•	Set Source Name
0862667e6110 10.0.0.120	+	Use https
28f10e3376cc 10.0.0.121	+	10.0.0.123 Set Custom URL
0004a36d2471 10.0.0.123	•	
00155d503701 10.0.0.124	•	
0004a334a4b7 10.0.0.128	•	
ADD SOURCE MANUALLY		PREVIEW

Example Content Configuration

Set Source Name: first-floor

Use https: Enabled

Set Custom URL: :8443/first-floor/index.html

■ Networks and Content Sources **Display Content in Kiosk Mode** 0004a36d2471 SSID: ewifi C Sources visible on current network 08002767c537 first-floor 080027d8cf7f 10.0.0.118 • 10.0.0.123 :8443/first-floor/index.html 0862667e6110 • 28f10e3376cc 10.0.0.121 • 0004a36d2471 10.0.0.123 00155d503701 10.0.0.124 -

Collapse the input box to save the settings.



Repeat the previous steps for each source to be added

To reorder press and hold the			
drag and drop handle found on			
the right of each saved source,			
then drag up or down.			



The source at the top of the list is always displayed first.

\equiv Networks and Content Sources **Display Content in Kiosk Mode** ■ C Sources visible on current network 080027d8cf7f 10.0.0.118 • 0862667e6110 28f10e3376cc ≡ • 28f10e3376cc 10.0.0.121 0004a36d2471 10.0.0.123 00155d503701 10.0.0.124 • 0004a334a4b7 10.0.0.128 -ADD SOURCE MANUALLY



To remove a Source, swipe left from the centre and click the remove button. This only removes this reference to the Source. It remains available in the device list.

\equiv Networks and Content Sources		
중 SSID: ewifi		Display Content in Kiosk Mode
(to switch to Ethernet, plug in Ethernet cable and reboot) C Sources visible on current network		✓ 0004a36d2471 (first-floor) SSID: ewifi
080027d8cf7f 10.0.0.118	•	2667e6110
0862667e6110 10.0.0.120	•	T
28f10e3376cc 10.0.0.121	•	
0004a36d2471 10.0.0.123	•	
00155d503701 10.0.0.124	•	
0004a334a4b7 10.0.0.128	•	
ADD SOURCE MANUALLY		PREVIEW

Option

Sources can also be added manually, by using the 'Add Source Manually' button.

\equiv Networks and Content Sources					
중 SSID: ewifi	Add Source Manuall		n Kiosk Mode		
(to switch to Ethernet, plug in Ethernet cable and reboot)			71 (first-floor)		
C Sources visible on current network 080027d8cf7f 10.0.0.118	CANCEL	SAVE	0		
0862667e6110 10.0.0.120	⇒				
- + .	1	2	3	⊠	
* / ,	4	5	6		
() =	7	8	9		
	*	0	#		

The *General Settings* Menu can be accessed from the top left hand menu icon and any changes required should be made before launching any content.

In particular, the option to view content in browser rather than the default kiosk mode is found here.

See the *GENERAL SETTINGS* page later in this guide for details of each settings feature.

\equiv General Settings	
Language : ENGLISH (UNITED STATES) Date : 07/18/2018, 12:32 GMT+01:00 ADJUST Brightness Level Dimming Behavior : ON 5 minute(s) until screen dims to	Configuration Password : OFF Settings Hint at Start Up : ON Configure NTP : OFF NTP server address View Content in Browser : OFF
Source Rotation : ON	RESET DISPLAY
App Version: 2.1.7+rev.c7d7773 Android Version: 6.0.1 Display Model: rock	chip F716XR

Once the Content has been selected and setup, click *Preview*.

\equiv Networks and Content Sources		
중 SSID: ewifi		Display Content in Kiosk Mode
(to switch to Ethernet, plug in Ethernet cable and reboot)		✓ 0004a36d2471 (first-floor) SSID: ewifi
080027d8cf7f 10.0.0.118	•	✓ 0862667e6110 SSID: ewifi
0862667e6110 10.0.0.120	•	✓ 28f10e3376cc SSID: ewifi
28f10e3376cc 10.0.0.121	•	
0004a36d2471 10.0.0.123	•	
00155d503701 10.0.0.124	•	
0004a334a4b7 10.0.0.128	•	
ADD SOURCE MANUALLY		PREVIEW

After clicking *Preview*, content from the top of the list is displayed. A preview bar is displayed providing easy access back to the configuration screen

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	\simeq	s

If more than one Source has been chosen, then an additional ribbon will be available at the bottom of the loaded screen. It will show the current Source and produce a list of Sources to change to if required.

This ribbon can be removed by disabling the *Source Rotation* in *GENERAL SETTINGS*.

Once satisfied with the Content that is displayed, Click *LAUNCH*. An option box will be presented. Clicking NO will simply close the dialog, clicking *YES* will enter the Display into kiosk mode. Once in kiosk mode a restart of the display will be required to make any further changes to the setup.





Option

If viewing in Brower mode, the display will start the content within the browser chosen within the General Settings. For convenience, the application will create a web page at launch, displaying all the Sources that have been enabled.

Wait for the localhost:8080 page to load.

For speed and ease going forward, it is suggested this page is bookmarked on first load. Clicking on the tabs for any of the Sources added, will launch that content in a separate Tab.



THE UNIVERSAL DISPLAY SHOULD NOW BE READY TO VIEW CONTENT. CHANGES CAN BE MADE TO THE GENERAL SETTINGS AS REQUIRED, SEE SECTION 3

BACK

When connected by Ethernet to the source and there is no DHCP available, the *Connection Type* dialog box is displayed. Click on *ETHERNET*





Click on *Ethernet* in the Networks and Content Sources page and then *Ethernet* again in the Wireless & Networks menu Wireless & networks
Aeroplane mode
Tethering & portable hotspot
Ethernet
VPN
Mobile networks
Mobile plan

Scroll to the bottom of the screen and select *Ethernet IP mode*. Select *static*.



2.3

NEXT

Enter network settings for Static Ethernet connection.

A value must be added to each field before the settings can be saved.

Click *Connect* and then *Next* to find content on the network.

← Ethernet		
Ethernet Ethernet is disabled	Ethernet IP address	•
IP address 0.0.0.0	192.168.0.10 Gateway	
netmask 0.0.0.0	192.168.0.1	
gateway 0.0.0.0	255.255.255.0	
DNS1 0.0.0.0	0.0.0.0 DNS 2	
DNS2 0.0.0.0	0.0.0.d	
Ethernet Ip mode	CANCEL CONNECT	

Any Sources already connected to the same network will be found.



Add the content to be displayed and Preview and then Launch the pages using *Preview* as per the methods described in *Section 2.2*

■ Networks and Content Sources	
←> Ethernet (to switch to WIF), unplug Ethernet cable and reboot)	Display Content in Kiosk Mode (source switching available)
C Sources visible on current network	✓ 74c246cd3ddc (Niagara) SSID: Ethernet
400d105d58f0 →	
74c246cd3ddc →	
4851b71762e5	Ţ
ADD SOURCE MANUALLY	PREVIEW

When the *Connection Type* dialog box is displayed. Click on *WIFI*.



Select the network to join.

Wi-F	i	
On		
▼4	NT_0004A36D2471	
▼4	ewifi	
▼a	NWifi	
₹.	NT_0004A36D2FBE	
▼.	NT_0004A36D167B	
▼.	NT_0004A36D4C72	
▼.	NT_0004A36D424D	
▼4	NT_0004A36D3BC2	
E	BACK	NEXT

Click on *Advanced Options* and then drop the *IP Settings* box to reveal the option to choose *Static.*



Scroll the entry box down and enter the network settings for Static Ethernet connection.

A value must be added to each field before the settings can be saved.

Wi-Fi		NWifi			
On		None		*	
🔷 ewifi		IP settings Static		•	
🔨 NT_00	004A36D2FBE	IP address 192.168.1.128			
🔽 NWifi		Gateway 192.168.1.1			
🔽 NT_00	004A36D424D	Network prefix length			
🔽 NT_00	004A36D3BC2	24			
🗙 NT_00	004A36D167B	8.8.8.8			
🔽 NT_00	004A36D2471	DNS 2 8.8.4.4			
NT_0	004A36D4C72		CANOFI	000101507	
BACK			CANCEL	CONNECT	NEXT

Scroll to the top of entry box and ensure the password is entered and all the configuration detail for the static IP is present. Then click *Connect*.

Wi-Fi On			ſ	NW Pass											1			
	NT_0004/	A36D2FE	BE	•••	how pas	ssword									I			
BAC	NWifi K		l	_	nced op						c	ANCEL	CON	¥ INECT	l			
q	W	2	е	3	r	4	t	5	у	6	u	7	i	8	0	9	p	×
	а	s		d		f		g		h		j		k		I		•
	Z	2	х		С		V		b		n		m		!		?	<u>+</u>
?123	,																	٢

The network chosen should now show as connected. Click *Next* to find content on that network.



Any Sources already connected to the same network will be found.



Add the content to be displayed and Preview and then Launch the pages using *Preview* as per the methods described in *Section 2.2*

\equiv Networks and Content Sources	
SSID: NWifi (to switch to Ethernet, plug in Ethernet cable and reboot)	Display Content in Kiosk Mode
C Sources visible on current network	ŠSID: NWIFI
00507fea0a40 10.0.0.2	•
245ebe026efe 10 0.0.3	•
109836b3896e 10.0.0.4	•
109836b3896c 10.0.0.5	•
00155d503700 10.0.0.6	• 1
00155d503701 10.0.0.7	• 🖌
ADD SOURCE MANUALLY	PREVIEW



Various Display settings can be configured by selecting *General Settings* accessed from the button in the top left hand corner or by swiping from the left edge of the screen.

Menu		
Networks and Content Sources		Display Content in Kiosk Mode
General Settings		
	MANUALLY	PREVIEW

The following can be configured from within the General Settings menu:

- Change the language.
- Set the Date/ Time/ Time Zone.
- Adjust the brightness and dimming behaviour.

• Switch off source rotation. Enabled if more than one source has been configured. Default is ON.

- Enable the password for the configuration screen.
- Add an NTP Server if required.
- View the content in a Browser.
- Reset the display.

\equiv General Settings	
Language : ENGLISH (UNITED KINGDOM) - Date : 20/07/2018, 15:39 BST ADJUST Brightness Level	Configuration Password : OFF Settings Hint at Start Up : ON Configure NTP : OFF NTP server address
Dimming Behaviour : ON simminute(s) until screen dims to	View Content in Browser : OFF 🛛 ●
Source Rotation : ON	RESET DISPLAY

3.1 Time & Date Settings

To change the date or time, click *ADJUST* in the General Settings.

Deselect Automatic date & time and time zone, then adjust as required. Reselect Automatic buttons once finished, then click *NEXT*.

Date & time	
Automatic date & time Use network-provided time	٠
Automatic time zone Use network-provided time zone	٠
Set date 19 December 2017	
Set time 12.08	
Select time zone GMT+00:00 Greenwich Mean Time	
Use 24-hour format 13:00	٠
васк	NEXT

3.2

Content Browsers

Enabling content browsers. By default, this is off. Content will be displayed by the Kiosk browser, within the NetThings Application. This gives a full browser experience in a full frame environment. If, however the content design is such that a typical internet browser is preferred, options are available.

\equiv General Settings			
Language : ENGLISH (UNITED KINGDOM) Date : 20/07/2018, 16:33 BST ADJUST Brightness Level Dimming Behaviour : ON 5 minute(s) until screen dims to	Configuration Password : OFF (Settings Hint at Start Up : ON (Configure NTP : OFF MTP server address MTP server address Mozela Browser : ON (Secet a Web Browser Google Chrome (Mozella Firefox		
App Version: 2.1.7+rev.c7d7773 Android Version: 6.0.1 Display Model: rockchip F716XR			



Adjusting the dimming behaviour

To turn the dimming off:

- Set the dimming value to 0 or blank.
- Ensure the brightness level and dimming level are the same.

NOTE: Turning off dimming: the display may be affected by temporary image ghosting if a static image is displayed for a prolonged period.

3.4 Hint & Password Settings	6.0.1 F716XR_2018-04-27	APP Version: 2.1.7+rev.c7d7773
Should the network connection or content need to be changed at any point, restart the Display by pressing the power button once. By default there is a hint for accessing the settings, <i>TAP HERE</i> <i>FOR SETTINGS</i> . This hint can be turned off in General Settings if required.	TAP HERE FOR SETTINGS	
If required, a password prompt can be enabled to control the access to the settings menu. The password is: <i>ipd_admin</i>	Device Setup Passaord LOGIN	

Reset the Display

The display can be restored to factory settings using the *RESET DISPLAY* button.

This process will reset all the settings in the General Settings page to default. It will clear all network settings, content sources and browser caches.

\equiv General Settings	
Language : ENGLISH (UNITED KINGDOM) Date : 20/07/2018, 16:33 BST ADJUST Brightness Level Dimming Behaviour : ON 5 minute(s) until screen dims to	Configuration Password : OFF Settings Hint at Start Up : ON Configure NTP : OFF NTP server address View Content in Browser : ON Select a Web Browser Gogle Chrome Mozilla Firefox RESET DISPLAY
App Version: 2.1.7+rev.c7d7773 Android Version: 6.0.1 Display Model: rock	chip F716XB

Confirm YES to proceed with the reset function.

After a few seconds the Display will reboot and prompt the user in the same manner as a Display that has been factory programmed.

(Note: no customer branding files are removed during the reset process)

\equiv General Settings				
Language : ENGLISH (UNITE	ED STATES) 🔫	Configuration Password	:ON 🥌	
Date : 07/26/2018, 13:41 G	Reset Display		ON 🦔	
Brightness Level	This will: Remove all saved content sou	urces. heir default, including language and timezone.		
Dimming Behavior : ON	ON 🌑			
5 minute(s) until screen dims to	crean dims to The display will restart once the reset is complete. Do you wish to continue?			
•	NO	YES		



3.5

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