IMPORTANT NOTE

Your OneFix has a WiFi network name “**OneFix-xxxx**” where **xxxx** is your unique 4 digit code. The default Password = “**PASS-xxxx**”, where **xxxx** is the same unique four-digit code at the end of the WiFi network name.

To access the web interface, http://192.168.1.1 or http://onefix.local

OneFix GNSS System

Installation and instruction Manual

www.digitalyachtamerica.com

1. Introduction

Congratulations on the purchase of your OneFix GNSS System. This product is designed to provide the most accurate position fixes currently available in the leisure marine market, with clear indication of the validity and security of the position data.

An optional GPS160 GLONASS sensor is available, which allows OneFix to constantly compare its own position fix to the GLONASS position fix, providing early warning of localised jamming or spoofing.

This Product Guide provides important information that we recommend you read before attempting to install or use this OneFix unit. If you have any concerns or questions, please visit our Support website at https://digitalyacht.support and raise a support ticket.

2. Before you start

You will need the following items and tools to complete the installation:

- OneFix GNSS System.
- GPS antenna and cable.
- Optional GPS160 GLONASS sensor.
- M4 screws (not supplied) or other fixings appropriate to the mounting location.

To configure the unit, you will need:

- A wireless mobile device such as a smart phone or tablet, which has a modern web browser like; Safari, Google Chrome, Firefox, Microsoft Edge, etc.

3. Installation

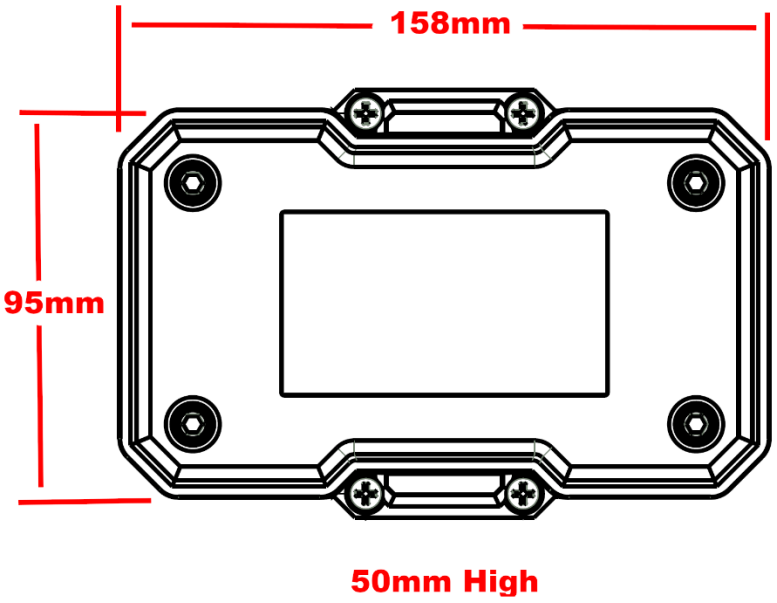
Before starting installation select a suitable location for the OneFix GNSS System. The unit is NOT waterproof, and we only recommend permanent mounting below deck in a dry location. When locating the unit, you should consider:

- Routing of the 12-core Power/Data cable to a suitable power source
- Routing of the integral NMEA 2000 cable to a spare “T-Piece” on the NMEA 2000 network
- Mounting of the GPS antenna and routing the cable to the unit
- If you need Wi-Fi reception around the whole boat
- Maintaining the compass safe distance of 0.5m
- Connection to other devices/accessories

Installation Step 1 – Mechanical Mounting of the Unit

The OneFix can be mounted in any orientation, but we recommend mounting it on a vertical surface with the cables pointing down, so that any moisture drips down the cables and not into the unit. A suitable “Drip Loop” should be used on the GPS antenna cable. The OneFix enclosure has two mounting lugs which feature a 4.5mm slot. We recommend a No.8 wood screw or M4 bolt to secure the unit in place, but please do not apply undue force when tightening which could damage the plastic.

Unit Dimensions



Installation Step 2 – GPS Antenna

- The supplied GPS antenna is designed to be fitted to a standard 1”x14 TPI threaded VHF pole mount, which are available in many different styles from all good marine electronic dealers and chandleries.
- You should ensure the GPS antenna has a good clear view of the entire sky. It is not recommended that the GPS antenna is mounted up a mast where the motion of the vessel will cause the antenna to swing and potentially reduce the accuracy of the GPS position.
- Do not mount your antenna in the direct path of a radar transmitter.
- Feed the 10m cable attached to the GPS antenna, through the pole and screw the antenna onto the pole mount as shown.
- Route the cable to your OneFix unit, adding any necessary extension cables.
- Screw the GPS antenna connector on to OneFix. The GPS connector is the threaded TNC type connector on the top edge of OneFix.
- To avoid moisture dripping down the antenna cable and on to the connector, we strongly recommend that a 100mm diameter “Drip Loop” is located next to the OneFix unit.

Installation Step 3 - Power

- Provide power connections to the unit. Power is connected to the integral 2 core Power cable on the Red and Black wires. The Red wire is the positive (+) connection. The Black wire is the negative (-) connection.
- Connect the stripped wires to the nearest source of primary DC power. Ensure that the supply is connected via an inline 3A fuse (not supplied) or suitable circuit breaker. Add the fuse in the positive power connection to the unit if necessary.
- The OneFix GNSS System is designed for a 12V or 24v DC systems.

Installation Step 4 – Connection to NMEA 0183 equipment

- The OneFix can be connected to other compatible equipment via the NMEA0183 connections on the PWR/DATA cable, via the NMEA 2000 interface cable and/or to a PC via the USB interface.
- A table showing what each of the 12 wires of the PWR/DATA cable does is printed on the OneFix product label and repeated below for your convenience;

Wire colour	Description	Function
RED	Power in +	12/24v Power supply connections
BLACK	Power in -	
ORANGE	NMEA0183 port 1 TX+	NMEA0183 output (4800 or 38,400 baud) intended for connection to chart plotters
BROWN	NMEA0183 port 1 TX-	
YELLOW	NMEA0183 port 1 RX+	NMEA0183 input (4800 or 38,400 baud) intended for connection to GPS160 GLONASS sensor
GREEN	NMEA0183 port 1 RX-	
PINK	1PPS Output	3.3v TTL 1 Pulse Per Second Output*
VIOLET	Relay Ouput	Open Collector Output for Relay Alarm*
WHITE	MOB Switch Input	Activates when shorted to Ground for 3 seconds*
GREY	User Input Switch 1	Activates when shorted to Ground*
LIGHT BLUE	User Input Switch 2	Activates when shorted to Ground*
DARK BLUE	Common Ground	Common ground for switches

**** NOTE – not supported in first release, but will be supported in the Q1/2026 firmware update***

- The NMEA0183 Output (Orange+ and Brown –) of the OneFix should be connected to the Input of the device that needs position data. connect it to a free NMEA Input on the plotter. You can set the baud rate of this port in the OneFix web interface.
- The NMEA 0183 Input (Yellow+ and Green-) of the ONeFix should be connected to the optional GPS160 GLONASS Sensor.

IMPORTANT NOTE – unused wires must be isolated, so they cannot short to each other or any other connections.

Installation Step 5 - Connection to the NMEA2000 Network

- OneFix does not take its power from the NMEA2000 network, just outputs its GNSS data on to the network.
- OneFix has an integral 0.75m NMEA2000 cable terminated in a standard micro male NMEA2000 connector, that will plug straight in to a spare female “T Piece” on many NMEA2000 networks.
- If you need to create a new NMEA2000 network, then you may wish to consider Digital Yacht’s NMEA2000 Starter Kit, that provides all of the cables, connectors and terminators required for a basic NMEA2000 network.
- On some “proprietary” NMEA2000 networks, a special adaptor cable will be required from the manufacturer.
    - Raymarine SeaTalkNG to NMEA2000 Adaptor Cable Part No A06045
    - Simrad Simnet to NMEA2000 Adaptor Cable Part No 24006199
- On many NMEA2000 Multi-Function Displays, you have the facility to view NMEA2000 devices on the network and if your MFD has this feature, use it to check that the OneFix is being seen on the network and selected as the GNSS source on the network.
- A table showing all the NMEA2000 PGNs (messages) that the OneFix transmits and receives are shown below. Please note that the mandatory NMEA 2000 bus management PGNs are not listed.

Transmit PGNs List	
PGN No.	**PGN Title**
126983	Alert
126985	Alert Text
126992	System Time
127258	Magnetic Variation
129025	Position, Rapid Update
129026	COG & SOG, Rapid Update
129029	GNSS Position Data
129044	Datum
129539	GNSS DOPs
129540	GNSS Sats in View

Receive PGNs List	
PGN No.	**PGN Title**
126984	Alert Response
127250	Vessel Heading
128259	Speed, Water Reference
129025	Position, Rapid Update
129026	COG & SOG, Rapid Update
129029	GNSS Position Data

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Installation Step 6 – Power Up

- Apply power to the OneFix and all of the LEDs will flash.
- While OneFix is finding its first position fix the Yellow LED will flash – this can take up to 1 minute.
- As soon as OneFix has a good position fix, the Yellow LED will stop flashing and the Green LED will come ON and stay ON for as long as OneFix has a valid position fix.

Installation Step 7 – Setting Up the Wireless Network

- By default, OneFix creates a wireless network (Access Point), with Name (SSID) = “OneFix-xxxx” and Password = “PASS-xxxx”, where xxxx is a four digit code, unique to your device. For example, if your OneFix creates a wireless network called OneFix-D4T8, then the Wi-Fi password will be PASS-D4T8.
- To connect to OneFix, you need to scan for wireless networks, find it, select it and then enter the default password when prompted.
- As soon as a wireless connection is established, the Status LED will stop flashing and stay permanently ON, whilst a wireless device is connected.
- OneFix is not a router/gateway, so when connected to it, you will not have an internet connection. Some operating system; Windows, iOS, Android, etc. may display “No Internet”, which is normal and not a cause for concern.
- Installation is now complete. The OneFix now needs to be configured using its web interface – see next section.

4. Configuration

The OneFix has an internal web interface for configuration and displaying of the GNSS data.

To access the web interface, connect to the OneFix wireless network, open a web browser (Safari, Chrome, Firefox, Edge, etc.) and either enter the IP address of the OneFix…

http://192.168.1.1

…or if your device supports Bonjour/mDNS you can enter the following URL…

http://onefix.local

…which is useful if you have connected the OneFix to another wireless network and don’t know what IP address it has been given.

You should now see the OneFix web interface, home page.

The home page gives you access to all of the OnFix functionality; the GNSS DATA, STATUS, SECURITY and SETTINGS pages.

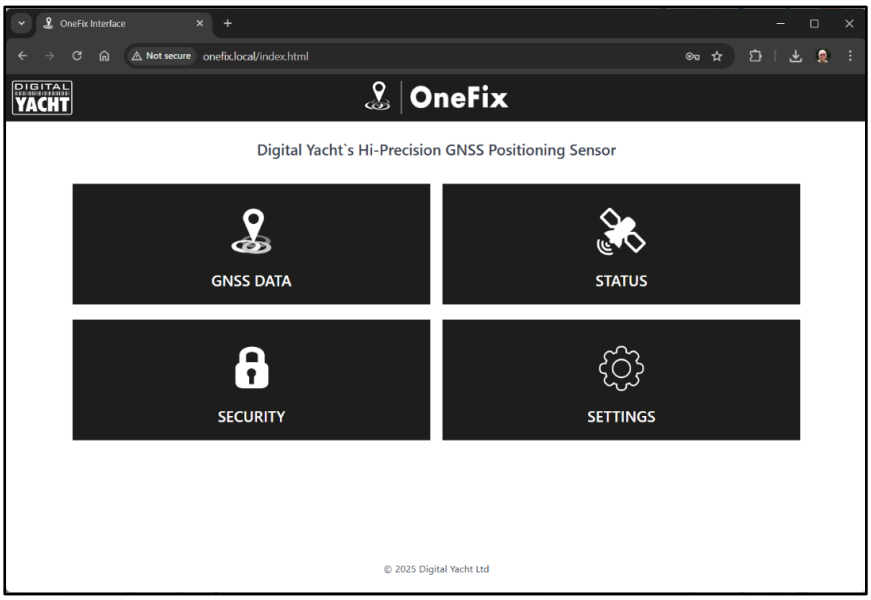

Figure 1

4.1 GNSS Data Page

The GNSS Data page as shown in Fig2, is where you can display the OneFix position, COG/SOG, Time/Date, Fix Quality and Stop Watch.

If you have Heading and Boatspeed data on the NMEA 2000 network then OneFix will also display Tidal Set and Drift as long as the SOG > 2 knots.

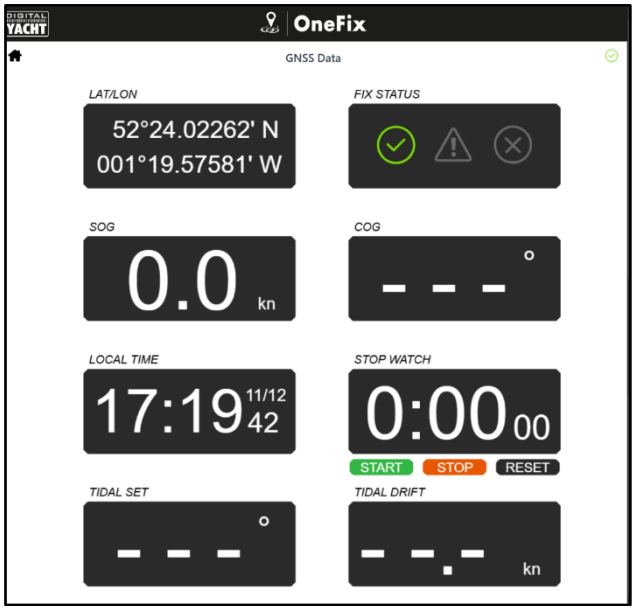

Figure 2

4.2 Status Page

The OneFix Status page as shown in Fig3 provides a graphical display of all the satellites that OneFix is tracking and using for navigation, with their relative signal strengths.

In addition there is a “Sky View” display showing the position of the satellites.

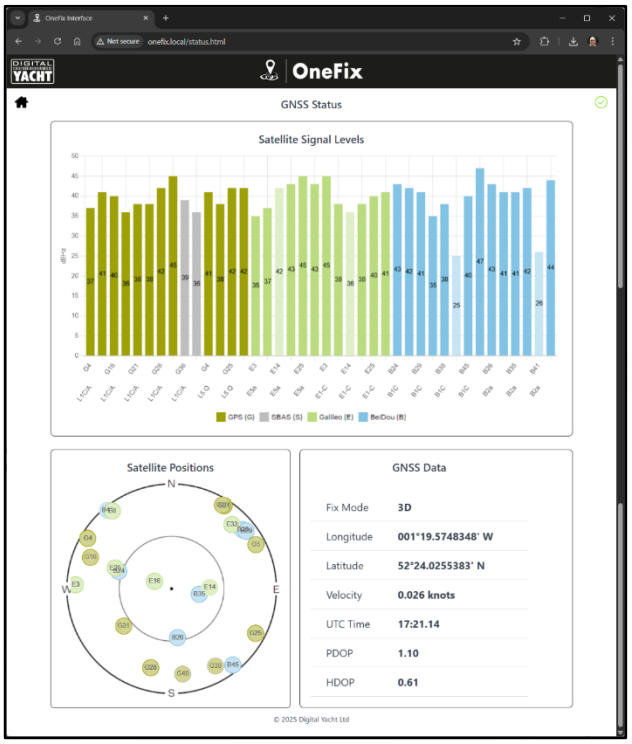

Figure 2

4.3 Security Page

With more and more reports of GPS jamming and spoofing in the Baltic and Eastern Mediterranean, OneFix is designed with security in mind. It is impossible to completely protect against jamming and spoofing but OneFix is constantly monitoring for compromised or strange signals and will warn you if it detects any evidence of jamming or spoofing.

In addition, if you have other GNSS sensors on the NMEA 2000 network, OneFix will constantly compare the position it is calculating to that of the other GNSS sensors.

For ultimate protection, we can supply our GPS160 GLONASS Sensor as an optional accessory. When connected to the OneFix NMEA 0183 Input, the position calculated by the GPS160 from the Russian GLONASS satellites is compared to the OneFix's own position, calculated from the GPS, GALILEO and BEIDOU satellites.

By setting the maximum difference in position that you are comfortable with, OneFix will create an NMEA 2000 Alert if it detects the positions vary by more than the value set.

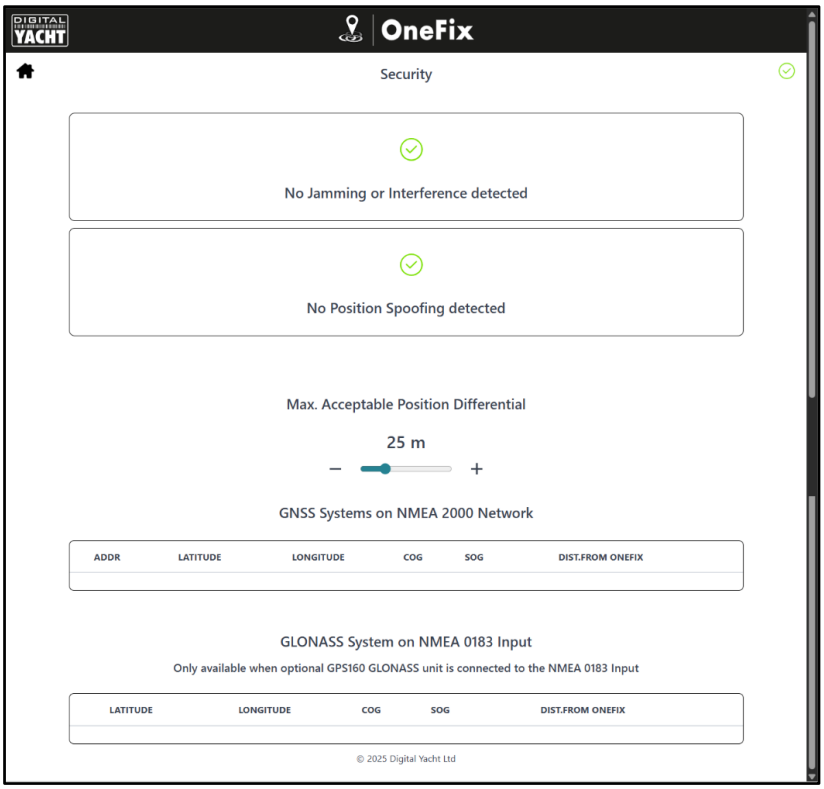

Figure 4

4.4 Settings Page

By default OneFix creates its own wireless access point (AP Mode). On the OneFix SETTINGS page, you can configure the wireless network name (SSID) and the wireless password of the network that OneFix creates as shown in Fig5.

Once changed, click on the UPDATE SETTINGS button to save the new settings - NOTE OneFix will reboot.

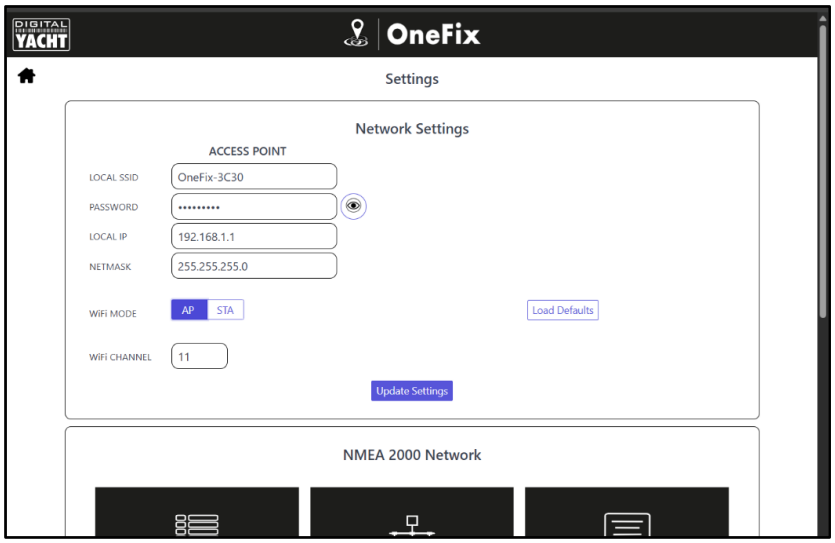

Figure 5

If you already have a wireless router on the boat, you can make OneFix join that network, rather than create its own. Click on the STA (Station Mode) button, select the network you want to connect to from the drop down STATION SSID menu and then type in the wireless password for that network – you can click on the “Eye” icon to see what password you have typed to avoid mistakes.

Click on the UPDATE SETTINGS button to save the new settings - NOTE OneFix will reboot.

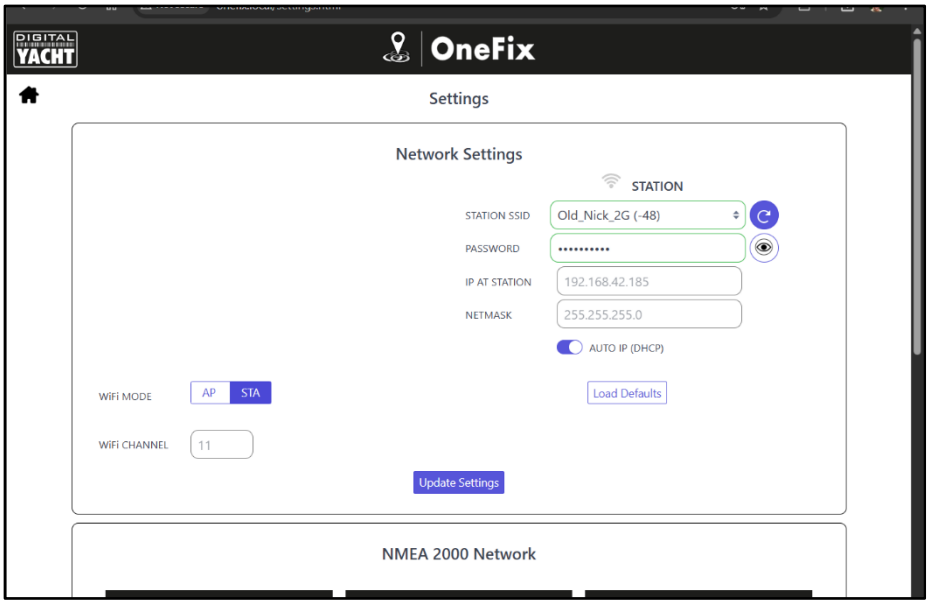

Figure 6

Also on the SETTINGS page are NMEA 2000 network diagnostic tools; PGN LIST, DEVICE LIST and DATA MONITOR.

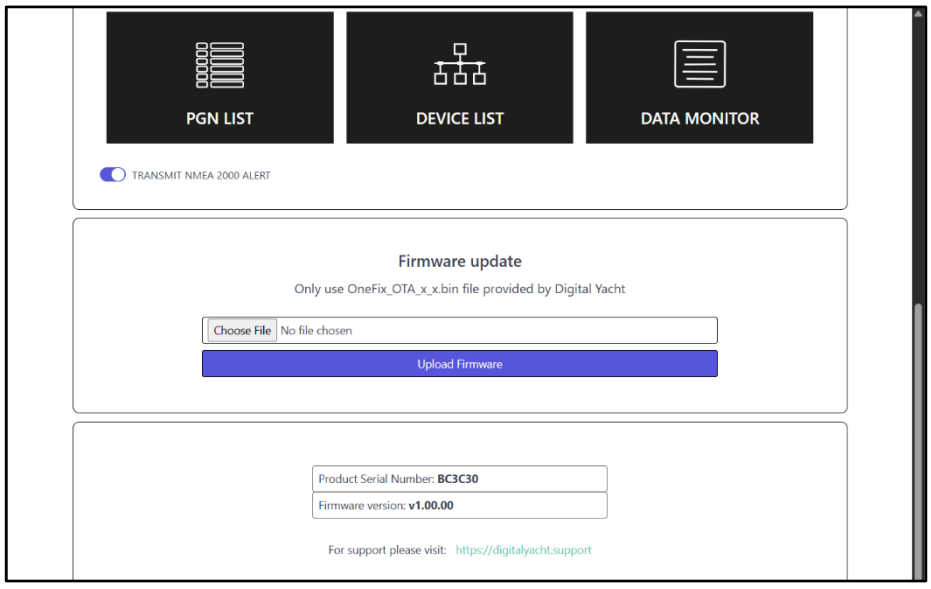

Figure 7

Finally on the SETTINGS page is the firmware update section – see Figure 7. Updates to the firmware can be easily done via the web interface. We will be releasing a large update, which will include the functions that we did not manage to include in the initial release during Q1/2026. Please monitor our https://digitalyacht.support site for new firmware and all of the latest product news on our social media channels.