## AUTO TRANSMIT TURBOWIN+ FUNCTIONALITY

Newest TurboWin+ 4.0 software includes an auto transmit function for marine observations when coupled with the NOAA Enhanced Manual Observing System (EMOS). Function can be turned on or off easily.

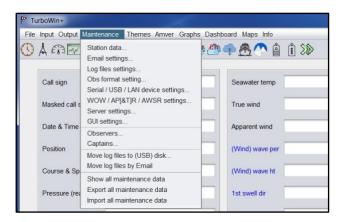
#### **Requirements:**

64 Bit computer with Internet connectivity EMOS unit consisting of a Mintaka StarX and Mintaka Star NOAA supplied Windows USB Driver (Windows 7) NOAA supplied TurboWin+ 4.0 software



**Configuring TW+ 4.0 for auto reporting:** A few changes to the TW+ setup must be made first to the following maintenance screens. **Password is JWS01 (is case sensitive)** 

E-Mail Settings: WOW and AP(&T)R and AWSR Settings: Serial/USB or LAN Connection Settings:



Note: TW+ 4.0 will have to be restarted for changes to take effect.

Any questions or problems please notify :

james.luciani@noaa.gov 908-271-3477 chris.fakes@noaa.gov 832-703-8113

Shipboard Technologies

If you are interested in tracking your observation numbers and quality go to MeteoFrance at

http://esurfmar.meteo.fr/vos-monitoring/info.php

Enter ships call sign and click OK to see your QC.

### E-Mail Settings:

ALL] address recipient	chris.fakes@noaa.gov	cc* james.luciani@noa	a.gov Email subject	EMOS Auto Test HGX
FORMAT 101]***	obs in body     O obs in atta	chment		
SMTP HOST]* ship email addr.		server	password**	port**
GMAIL]* your Gmail address	VOSObservations@gmail.com	Gmail app password		O TLS 💿 SSL
YAHOO]* your Yahoo address		Yahoo app password		● TLS 🔾 SSL
tional ** o		onsult your PMO		
is email recipient	chris.fakes@noaa.gov			
ese log files include important data w	hich is of particular value for climate studies			

Address Receipt: Email Subject:	shipobs@noaa.gov Weather Observation	
•		
Gmail address:	VOSObservations@gmail.com	
Gmail app password:	fmpkwgztevezptgv (all lower case)	SSL
Log Email Receipt:	james.luciani@noaa.gov	

# *If company prefers to transmit via SMTP, following info required.*

SMTP Host:	Company IT to provide
Server:	Company IT to provide
Password:	Company IT to provide
Port:	Company IT to provide

### WOW and AP(&T)R and AWSR Settings:

/OW (Weather Observation Website)	AP[&T]R (Automated Pressure [& Temperature] Reports)
publish on WOW, see: wow.metoffice.gov.uk	✓ report pressure [& temp] auto. (barometer* + GPS)
WOW site ID	1 hour     0 3 hours     6 hours
WOW pin	* recommended: static head or flexible tube to measure outside pressure
reporting interval	AWSR (Automatic Weather Station Reports)
O 5 minutes (barometer connected)	report all measured data automatically (AWS connected)
<ul> <li>10 minutes (barometer connected)</li> <li>15 minutes (barometer connected)</li> </ul>	O 1 hour O 3 hours O 6 hours
O 60 minutes (barometer connected)	AP[&T]R / AWSR send method
	Server Met Center*  GMail** SMTP host** Yahoo Mail**
/OW and AP[&T]R	* Maintenance -> Server settings ***Maintenance -> Email settings
normal steaming draft (metres, e.g. 12.6) 8 [0.0	50.0]
barometer instrument correction** (hPa, e.g0.1) 0 [-4.0	- 4.0] ** average over the whole calibration range (this is NOT the height corr)
minimise TurboW	n+ after WOW or AP[&T]R or AWSR settings are set
after a restart of this compute	er you have to restart TurboWin+ to continue automatic reporting

AP(&T)R (Automated Pressure & Temperature Reports): Check report pressure & temp auto Check 1 Hour

AP(&T)R Send Method: Check Gmail or SMTP if preferred by your company

Average draught: Input average ship's draft (used to compute Sea level Pressure)

Barometer Instrument Correction: Leave blank

Serial/USB or LAN Connection Settings:

		-			
st meteo instrument		2nd meteo instrument	1	GPS	
O Mintaka Duo USB	O OMC-140 AWS LAN	Mintaka StarX WiFi		O GPS (NMEA 0183)	
Mintaka Star USB	OMC-140 AWS serial	🔘 Vaisala HMP155 USE	3	none	
🔘 Mintaka Star WiFi		⊖ none			
🔘 Vaisala PTB220 seri	al				
🔘 Vaisala PTB330 seri	al				
O EUCAWS AWS serial	i .				
🔿 none					
bits per second	57600	bps Cirite R		bits per second	Ŧ
st instrument port settings		2nd instrument port settings		GPS port settings	
data bits	8	data bits		port number	v
uata bits				portifunitier	
parity	none	parity	<b>*</b>		
stop bits	1	stop bits			
port number		port number			
				Use RMC sentence (re	ecommended)
				🔘 use GGA sentence	
	Especially fo	I laptops, set all the energy saving	settings, display excepte	ed, to 'never'	

1st meteo instrument:check Mintaka Star USB2nd meteo instrument:check Mintaka StarX

Verify Port Settings:	(for 1 <sup>st</sup> instrument only)
bits per second	57600
data bits	8
parity	none
stop bits	1
port number	AUTOMATICALLY
GPS:	Click none
GPS Port Settings:	Leave Blank

## Auto Input of EMOS Data

Call sign	HGXTEST	Seawater temp	Present weath.	
Station ID		True wind	Past weath, 1st	
Date & Time obs	7 February 2020 16:00 UTC	Apparent wind	Past weath. 2nd	
Position	29° - 28' N 95° - 05' W	(Wind) wave per	СІ	
Course & Speed	-	(Wind) wave ht	Cm	
Pressure (read+ic)	1013.7 hPa	1st swell dir	Ch	
Pressure (MSL)	1016.59 hPa	1st swell period	Total cloud cov	
Pressure tendency	1.1 hPa	1st swell height	Amount CI (Cm)	
Char. press. tend.	1 (code)	2nd swell dir	ht lowest cloud	
Nir temp	22.9 °C	2nd swell period	lcing	
Wet-bulb temp	14.1 °C	2nd swell height	Ice	
Dew point	7.1 °C	Visibility	Observer	
	more than 30 min	utes to go before next automated upload, s	lease do not add observation data —	

Auto EMOS data will be displayed in Red. Updated automatically every 5 minutes. Message will be displayed in blue shaded box indicating when next observation is to be sent.

Call sign	HGXTEST	Seawater temp	29.7 °C	Present weath.	haze	
Station ID		True wind	180 * / 15 kts	Past weath, 1st		
Date & Time obs	7 February 2020 16.00 UTC	Apparent wind		Past weath. 2nd		
Position	29* - 28' N 95* - 05' W	(Wind) wave per	3 sec	a	2 (code)	
Course & Speed	( <u> </u>	(Wind) wave ht	3 metres	Cm	6 (code)	
Pressure (read+ic)	1013.8 hPa	1st swell dir	150 degr	Ch	8 (code)	
Pressure (MSL)	1016.63 hPa	1st swell period	8 sec	Total cloud cov	6/8	
Pressure tendency	0.9 hPa	1st swell height	2 metres	Amount CI (Cm)	3/8	
Char. press. tend.	1 (code)	2nd swell dir		ht lowest cloud	1500 - 2000 m (5000 - 6500 ft)	
Air temp	22.9 °C	2nd swell period		lcing		
Vet-bulb temp	14.1 °C	2nd swell height		lce	· · · · · · · · · · · · · · · · · · ·	
Dew point	7.1 °C	Visibility	5.5 - 11 nm	Observer		
lew point	7.1 °C	Visibility	5.5 - 11 nm	Observer		

Mates can augment the observation any time 30 minutes after the hour. Click on the weather reporting element. We ask that the Mates record a complete observations every 6 hours at 0006-12-18Z, or when they encounter seas greater than 12 ft or winds greater than 34 kts.

After observation has been transmitted, data inputs will blank out until the next StarX reporting time. To verify if the observation was sent out correctly, Mates can check the System Log under the Info Menu.

Input Output Mainte	enance Themes Amver Graphs Das	shboard Maps	Info	
A 63 📈 🎚 🕬	<b>∿<u>⊂∦</u>≯↑⊴</b> ⊴	• <b>₽</b> ₫(	Statistics (internet) Calculator	
			System log	
Call sign	HGXTEST	Seawater	send System logs	
			About	
Masked call sign		True wind <sup>L</sup>	1	
Date & Time obs	10 December 2019 17.00 UTC	Annarent w	uind	
	Call sign	Image:	Image:	Call sign HGXTEST Seawater System logs About Masked call sign

Observation sent correctly System Logs will look similar to this:

21-Nov-2019 01:00:04 UTC [APR] scheduled upload 21-Nov-2019 01:00:04 UTC [APR] air pressure at sensor height = 1014.96 hPa 21-Nov-2019 01:00:04 UTC [APR] air pressure height correction = 3.25 hPa 21-Nov-2019 01:00:04 UTC [APR] air pressure instrument correction = 0 hPa 21-Nov-2019 01:00:04 UTC [APR] air pressure MSL = 1018.21 hPa 21-Nov-2019 01:00:04 UTC [APR] pressure tendency at sensor height = 0.7 hPa 21-Nov-2019 01:00:04 UTC [APR] pressure characteristic at sensor height = 1 (code) 21-Nov-2019 01:00:04 UTC [APR] RH at sensor height = 65 % 21-Nov-2019 01:00:04 UTC [APR] dew-point at sensor height = 16.0 °C 21-Nov-2019 01:00:04 UTC [APR] air temp at sensor height = 22.9 °C 21-Nov-2019 01:00:04 UTC [APR] wet-bulb temp at sensor height = 18.5 °C 21-Nov-2019 01:00:04 UTC [APR] position parsing ok; GPS position (dd-mm [N/S] ddd-mm [E/W]): 29-31 N 95-03 W 21-Nov-2019 01:00:04 UTC [EMAIL] trying to send obs (body= "BBXX EMOSTEST 2101/ 99295 70950 41/// //// 10229 20160 40182 51007 7//// 8//// 222// 0//// 2//// 80185=") to shipobs@noaa.gov cc none from EMOStest@comcast.net via SMTP\_HOST\_SHIP port 587 attachment none 21-Nov-2019 01:00:04 UTC [EMAIL] found: email tbw.exe 21-Nov-2019 01:00:16 UTC [EMAIL] mail sent successfully 21-Nov-2019 01:00:16 UTC [IMMT] appended immt.log successfully

If not successfully transmitted, there will be a statement concerning why the observation was not sent.

We may request Mates email the system log during any troubleshooting. Click "send System Log" and follow directions.

#### Fallback Procedures:

If the Auto transmit function fails, you can easily fall back to manual transmit of observation by unchecking the APR box on the main page. In manual mode data from the StarX is inputted in TW+ 4.0 but not displayed on the main screen.

P Tu	irboWin+		
File	Input Output Mainter	ance Themes Amver Graphs Dashboard Maps Info	
$\odot$	A 63 🐨 🎚 ° 📢	▶ <b>८∄ ≥ ₸ ऺ ॎॾ</b> ऺ ॎ ॎ २ वि । २ व : २ व . व । २ घ । २ घ । २ घ । २ व । २	
	Call sign	HGXTEST Seawater temp	

If the StarX fails, you can fall back to the Mintaka Star reports only. In the Serial/USB maintenance screen, click None for 2<sup>nd</sup> meteo instrument. Verify Port Settings. Click OK.

meteo instrument	2nd meteo instrument	GPS
) Mintaka Duo USB () OMC-140 AWS	LAN O Mintaka StarX WiFi	O GPS (NMEA 0183)
Mintaka Star USB OMC-140 AWS	serial O Vaisala HMP155 USB	none
🔵 Mintaka Star WiFi	none	
Vaisala PTB220 serial		
Vaisala PTB330 serial		
O EUCAWS AWS serial		
🔾 none		
	2nd instrument port settings	GPS port settings
instrument port settings	2nd instrument port settings	GPS port settings
instrument port settings bits per second 57600	2nd instrument port settings	GPS port settings bits per second
bits per second 57600	bps	bits per second
bits per second 57600 data bits 8	bps     data bits	bits per second     port number
bits per second 57600 data bits 8 parity none	bps     data bits     parity	bits per second port number
bits per second 57600 data bits 8 parity none stop bits 1		bits per second port number

GuardX Placement (StarX Shelter)

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Attach GuardX on bridge wing in a location with unrestricted air flow, and within 60 ft of the bridge mounted Star.•

StarX should be placed upside down in the GuardX. This is to keep water from puddling on the sensor port. ●

Ensure lid is securely attached.

#### StarX Report Screen

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Recommend you keep the Mintaka Star display on the StarX Report screen. Report shows all

observational data, battery voltage, and the last time a report was received from the StarX.• To

get to the StarX reporto O Press green "EXIT" button on the Mintaka Star

Using the green "+ or –" buttons scroll down to "GPS, WiFi, StarX" and press the  $_{\odot}$  green "SELECT" button

Using the green "+ or –" buttons scroll down to "STARX Report" and press the green "SELECT" button

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Battery voltage should be checked occasionally on the StarX Report screen. Once voltage gets below 3.10V, you should consider changing the battery. Notify your servicing PMO when battery is changed.



Trouble Shooting StarX

- 1. Data not getting into TurboWin+.•
  - Check TW+ USB/Serial/Lan settings.
  - Check Mintaka Star settings. Refer to manual. Baud rate is 57600.

Unplug Mintaka Star from computer. Wait 2 minute then plug back in to reset. You should see "Creating Network" displayed. It will take up to 5 minutes before a StarX report is sent.

- 2. No Reports Received from Mintaka StarX
  - •

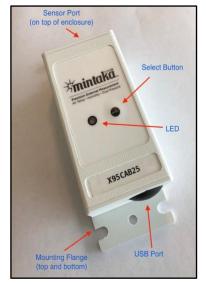
Press "Select" button on StarX. Should see a quick double green flash.

• This will wake up the StarX.

After double flash press "Select" again. Should see one green flash. ● This means a report was sent to the Mintaka Star.

If no green lights are seen, replace battery.

3. Notify your PMO if StarX stops reporting.



**<u>Replacing Battery</u>** (Tadiran Batteries are the only authorized battery for the StarX, if you have any other battery please dispose of locally)

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Battery should be replaced about every 6 to 9 months. ● On the back of the StarX, carefully remove the 6 small screws that hold the backplate in place.

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Remove old battery and replace. Take care – try not to put too much pressure on the circuit board •

#### when inserting new battery.

Press the "Select" button on front of the unit. You should see two quick green flashes. Quickly press "Select" again to send report. ●

On the Mintaka StarX Report screen, battery voltage should be between 3.1V and 3.6V

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Notify your PMO when battery is replaced.



### Fall-back if Mintaka StarX Stops Reporting

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If the StarX stops reporting and replacing the battery does not correct it, in TW+ Maintenance/Serial USB/LAN settings, under 2<sup>st</sup> meteo Instrument select "none".

- •
- Verify the instrument port settings for 1<sup>st</sup> meteo instrument are correct. See *Appendix A*.
- •
- You will have to restart TW+ for setting change to take effect.

Falling back to the Mintaka Star will at least provide TW+ input of Ship's Lat/Long, Course/Speed, pressure and pressure tendency.

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Also use the RH-300 or PHT-771 Digital Psychrometer for air and wet bulb temperature readings.

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Notify your PMO if the Mintaka StarX stops working.