

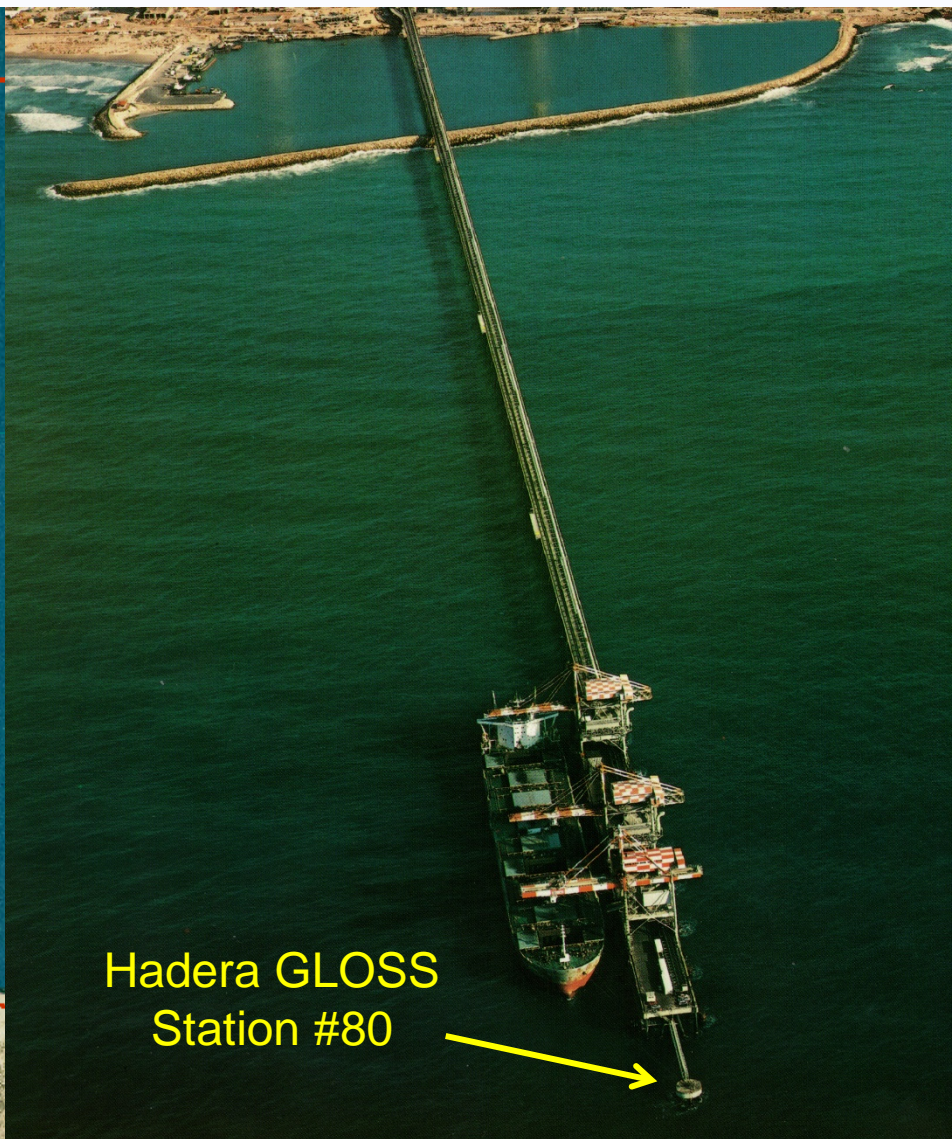
Concise presentation of sea level monitoring state in Israel

Sea level monitoring stations in Israel

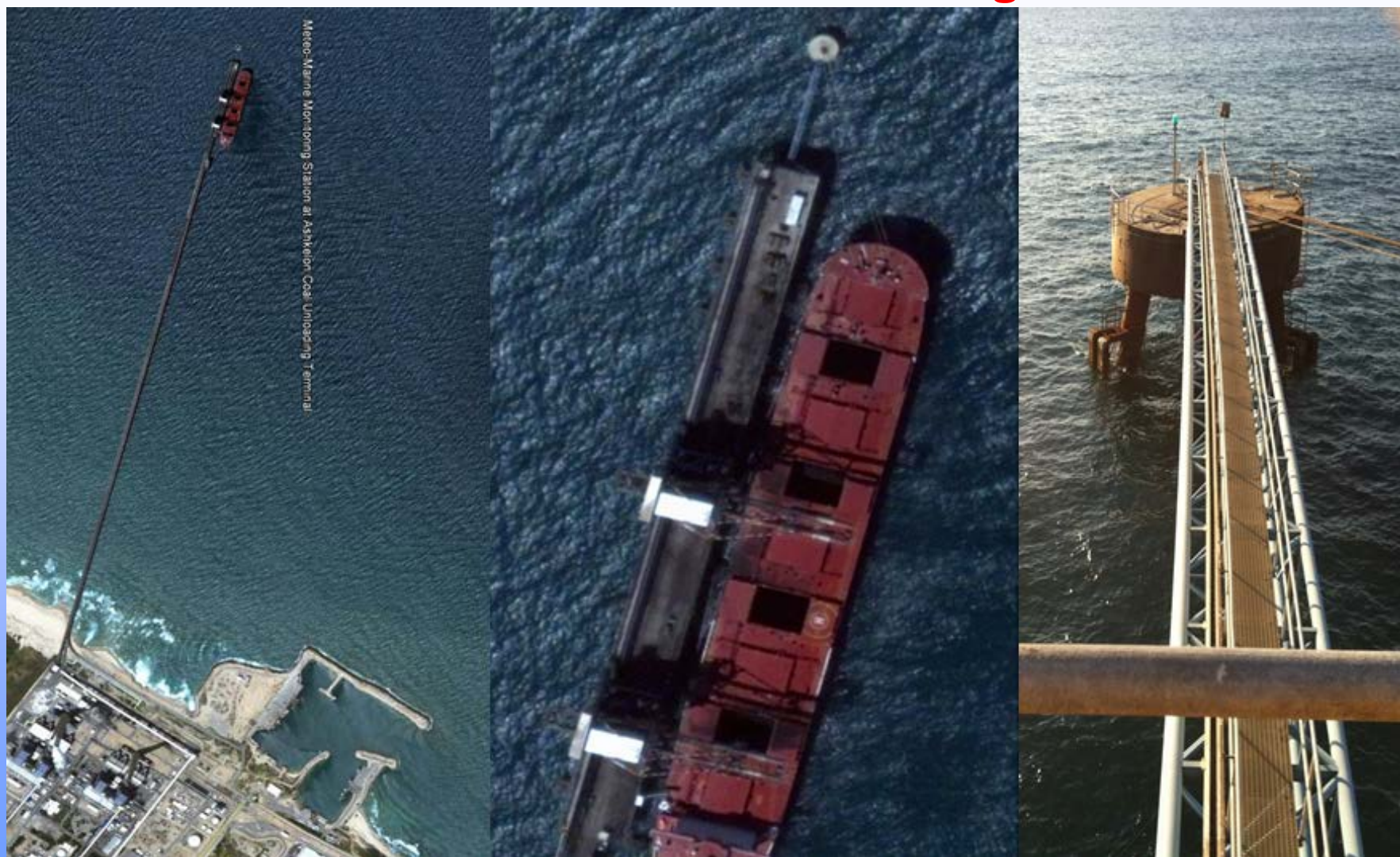


Sea	Site	Responsible	Measuring Method	Sensor Name	Data Transfer	Sampling Rate (sec)	Averaging over (min)	Accuracy (mm)
		Institution						
Mediterranean	Ashkelon Port	IOLR	Water & Atm Pressure	Paroscientific Digiquartz	Modem hourly	0.5	0.25	1
	Ashkelon marina	SOI	Float+Shaft encoder	Ott Thales	Logger, weekly	5	5	10
	Ashdod port	IOLR	Water & Atm Pressure	Paroscientific Digiquartz	Modem hourly	0.5	0.5	1
	Ashdod port	SOI	Radar	Ott Kalesto	Logger, weekly	20	5	1
	Tel Aviv marina	SOI	Float+Shaft encoder	Ott Thales	Logger, weekly	5	5	10
	Hadera coal pier	IOLR	Water & Atm Pressure	Paroscientific Digiquartz	Modem hourly	0.5	0.25	1
	Haifa port, Qishon mouth	IOLR	Microwave Radar	Miros SM-094/10W Range Finder	Wireless Internet	0.5	0.25	1
Red	Acre marina	SOI	Float+Shaft encoder	Ott Thalimedes	Logger, weekly	60	5	10
	Elat IUI pier	IOLR+IUI	Water & Atm Pressure	Paroscientific Digiquartz	Modem hourly	0.5	0.25	1
	Elat anchorage	SOI	Float+Shaft encoder	Ott Thales	Logger, monthly	5	5	10





Ashkelon Sea Level Monitoring Station



MIROS

SM-094 RANGE FINDER

The MIROS Range Finder is designed for measurement of

- Airgap and draught
- Ocean wave profiles and tidal variations
- Water level in dams, rivers, canals, lakes etc.

The sensor emits a microwave FM chirp signal and receives the echo from the water surface. The signal propagation delay given by the distance from the antenna to the water surface causes a beat signal in the receiver. By means of advanced signal processing the beat frequency is converted to an accurate distance.

The planar patch antenna results in small physical dimensions and low weight.

The FM chirp is generated by a digitally synthesized frequency sweep oscillator with absolute frequency linearity and high stability. The sensor therefore provides accurate range measurements and high long term stability.

Due to the low frequency of operation (compared to laser sensors), fog, rain and water spray will not cause measurement problems.

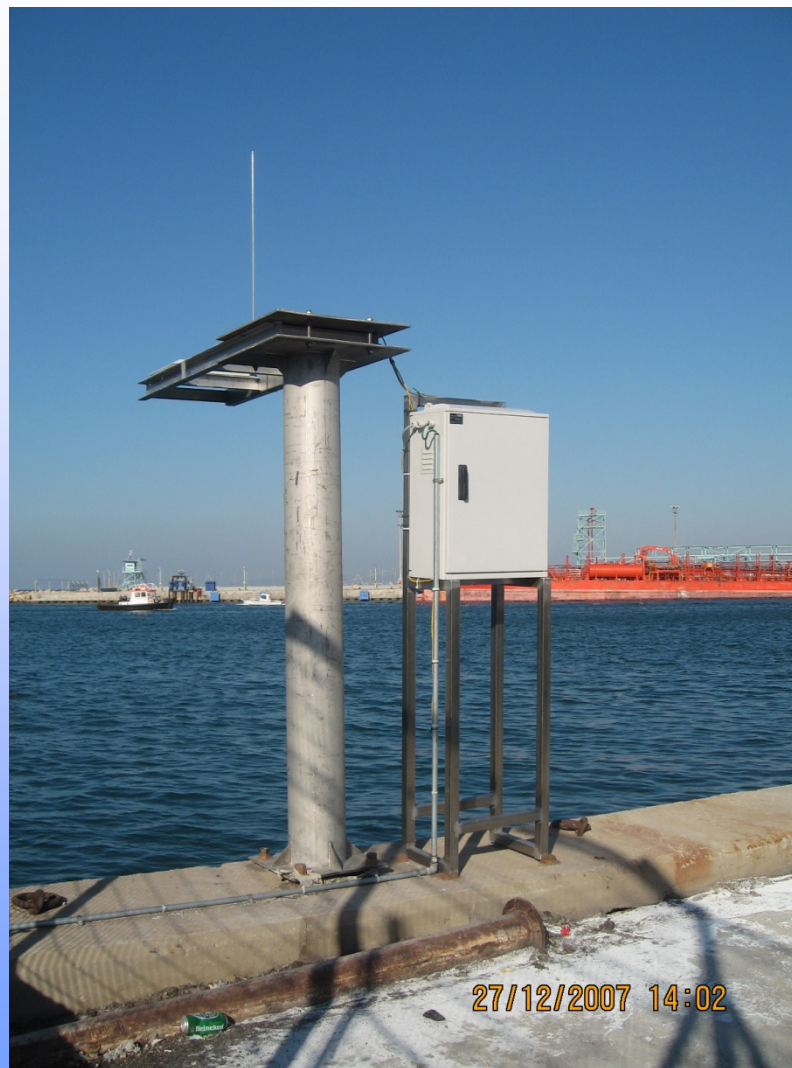
The sensor signal processing is performed by a micro-controller. The sensor provides the measured range as well as an averaged range with 1 mm resolution. Averaging time constant may be selected by user. The signal output may either be continuous at selected rate, or single measurements in response to user request.

SM-094 is available in different range versions with different antenna beam width.




Specifications		
Microwave Transceiver	Triangular FM	
Modulation:	8.4 - 9.8 GHz	
Frequency:	0.25 mW (-6 dBm)	
Output power:		
Wide Beam Antenna		
Beam width:	10° (-3 dB one way)	
Gain:	> 16 dB	
Range:	SM-094/10: 1 - 10 m	
	SM-094/20W: 1 - 20 m	
Narrow Beam Antenna		
Beam width:	3° (-3 dB one way)	
Gain:	> 24 dB	
Range:	SM-094/20N: 3 - 20 m	
	SM-094/50: 3 - 50 m	
	SM-094/85: 3 - 85 m	
Measurement Error		
Individual measurements:	< 1 cm	
Averaged measurements:	< 1 mm	
Power Requirements		
Voltage:	22 - 32 VDC (nominal 24 VDC)	
Current:	0.2 A	
Environmental		
Temperature:	-30 - +50 °C	
Humidity:	10 - 100 %RH	
Housing		
Material:	Aluminium AL67S	
Finish:	Enamelled	
Colour:	Gray, RAL 7036	
Ingress protection:	Designed to meet IEC IP66	
		Note: Specifications are subject to change without prior notice.
		DB/095 rev. 03

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Miros radar sea level station near Gadot wharf in Haifa Kishon port



MedGLOSS RT Monitor.vi LogMeIn - Remote Session

File Edit Operate Tools Window Help About

CIESM & IOC/UNESCO MedGLOSS NEAMTWS station **Hadera** operated by **Lazar**

Station Name
Hadera

Latitude
Deg: 32 Min: 28

Water Density [gr/cm³]
1.026

Benchmark [m]
11.919

31/10/2013 11:21:58 U.T.

Water Temperature [Celsius]
25.3

Atm. Pressure [mbar] **Sea Level [m]**
1011.05 0.0898

Connection
O.K.

STOP

Wind Data **Wind Settings**

Wind Speed [m/s] 1.072E+9	Wind Gust [m/s] 0	Wind Direction [Deg] 071646719
Speed Ch. 1	Gust Ch. 3	Direction Ch. 2

Aanderaa I.D. 578 Baud Rate Aanderaa 1200 bps

Sensors History

Time: 11:13 to 11:21

Wind Direction & Magnitude

Time: 11:13, Sea L., Atm. P., W. Temp., Wind S.

File Name Out - Minute
c:\Hadera_MedGloss\20131031\Hadera201310311121.txt

File Name Out - Hour
c:\Hadera_MedGloss\20131031\Hadera2013103111.hou

File Name Out - Day
c:\Hadera_MedGloss\20131031\Hadera20131031.day

Path to a save directory
c:\Hadera_MedGloss

No. Sigma to filter
Three Sigma

Sea Level [m]
Atm. Pressure [mbar]
Water Temp. [Celsius]
Wind Speed [m/s]

Wireless Network Connection is not connected
 Wireless network unavailable



SEA LEVEL STATION MONITORING FACILITY

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Map

Station lists

Station details

Services

[previous station] Station at GMT [next station]

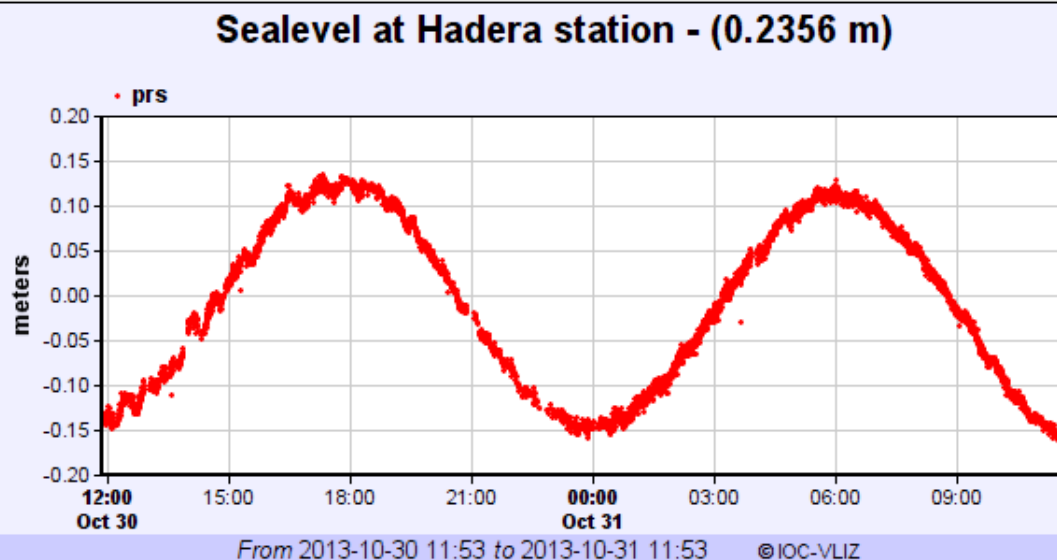
[more details]

[show data]

[show on map]

[monitor]

Station metadata	
Code	hade
Country	Israel
Location	Hadera
Status	Operational
Local Contact	Israel Oceanographic and Limnological Research Ltd (Israel)
GLOSS ID	80 [goto handbook]
Latitude	32.47053
Longitude	34.863057
Connection	FTP box
Sensor 1	
Type of sensor	prs
Sampling rate (min)	0.25



Period	Signals	Data
<input type="text" value=""/> <input type="radio"/> 12h <input checked="" type="radio"/> day <input type="radio"/> 7 days <input type="radio"/> 30 days	<input checked="" type="checkbox"/> Remove outliers <input type="checkbox"/> Remove spikes	<input checked="" type="radio"/> Relative levels= signal - average over selected period <input type="radio"/> Absolute levels= as received <input type="radio"/> Offset signals= relative signals + offset

Tip:use left icons to zoom & scroll





SEA LEVEL STATION MONITORING FACILITY

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[Map](#)

[Station lists](#)

[Station details](#)

[Services](#)

[previous station] Station at GMT [next station]

[more details] [show data] [show on map] [monitor]

Station metadata	
Code	askl
Country	Israel
Location	Ashkelon
Status	Operational
Local Contact	Israel Oceanographic and Limnological Research Ltd (Israel)
Latitude	31.634928
Longitude	34.493757
Connection	FTP box
Sensor 1	
Type of sensor	prs
Sampling rate (min)	0.25

Sealevel at Ashkelon station - (0.1823 m)

From 2013-10-30 11:50 to 2013-10-31 11:50 ©IOC-VLIZ

Period	Signals	Data
<input type="text" value=""/> <input type="radio"/> 12h <input checked="" type="radio"/> day <input type="radio"/> 7 days <input type="radio"/> 30 days	<input checked="" type="checkbox"/> Remove outliers <input type="checkbox"/> Remove spikes	<input checked="" type="radio"/> Relative levels= signal - average over selected period <input type="radio"/> Absolute levels= as received <input type="radio"/> Offset signals= relative signals + offset

Tip:use left icons to zoom & scroll



Monthly averaged sea level changes at the Mediterranean coast of Israel during 04/1992-03/2013 (based on measurements at Hadera GLOSS Station 80 operated by IOLR)

