

DUAL FREQUENCY SYSTEM



Active Antenna element

Wide-Band Receive Array
Sultanate of Oman

WERA can be configured with **Dual-Band Antenna Systems** tuned to two independent frequencies or with **Wide-Band Antennas**

Frequency Management menu accessible via Web Interface



Transmit Array

Freq. Management(1):	16.100	to	16.200	[MHz]	<input checked="" type="checkbox"/> Prescan	<input checked="" type="checkbox"/> Adapt Frequency	<input checked="" type="checkbox"/> DPT
Freq. Management(2):	24.400	to	24.600	[MHz]	<input checked="" type="checkbox"/> Enable 2nd Frequency Range		
Bandwidth Reduction:	3000 m [50.0 kHz]		max. allowed Range Cell Depth				

Always a wavelength ahead !



We will find the best suited system configuration for your application !

Dual-Band Antenna Systems

In general the WERA Dual-Band option is suited to operate in **two independent frequency bands** in a **time sharing mode**. The time slots should be defined according to the requirements of the application. It is possible to switch the frequency band after each acquisition cycle, up to 4 times per hour.

These systems are perfect suited for:

- getting best data at various sea states
- provide longest ranges for current measurements and higher resolution for shorter ranges
- getting long ranges for current measurements and good wave data for shorter ranges

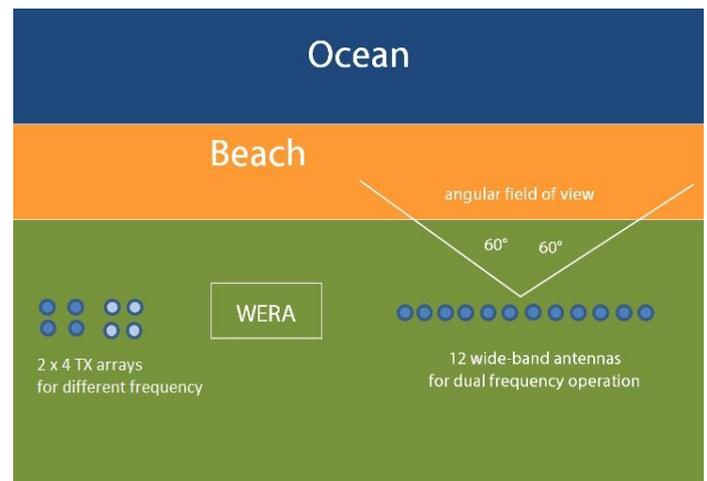
There are several options to configure a dual-band antenna system. The preferred option is a version with just one antenna array in line which can be used for two different frequencies. This option is well suited if the difference between the two operating frequencies is less than a factor of two.

The receive antenna system:

- One antenna system with wide-band antennas installed in one line
- At least 12 antennas are used for both frequencies
- The antenna array spacing (length) is designed for the higher frequency
- At the higher frequency the system quality is perfect
- At the lower frequency the radar beam is wider causing some smoothing in azimuth

The transmit antenna system:

- Two independent 4 or 2 pole Tx arrays
- High antenna efficiency and good isolation to Rx array
- Easy to install



Wide-Band Antenna System

The active antennas are optimised for a very wide frequency band. These systems are perfect suited to improve the data availability.

- Higher data availability at no additional costs

Frequency Management

WERA can be configured to use an automatic frequency management. In that case the two allocated bands are scanned prior to each acquisition cycle, e.g. every 15 minutes. The system would use the band with the better signal to noise performance. This operation mode is well suited for the wide-band antenna systems.

This frequency management includes the option to adapt the radar bandwidth to the actual radio interference situation. In case of a polluted radio frequency band the bandwidth can be reduced to ensure a high quality data acquisition.