

# *Marine RADAR*



Model : Yar27 series



NB 2676

**Approved**  
[www.yonzoe.com](http://www.yonzoe.com)



## ***Improved Target Detection; Easy***

The YAR27 series of ARPA radar is designed to meet the exacting standards of the IMO for all kinds of ships.

-19"LCD display unit employs an effective display diameter larger than 250 mm.

-23"LCD display unit employs an effective display diameter larger than 340 mm.

Target detection is enhanced by signal enhanced processing hardware.

Two guard zones can be set at required ranges in any sector. Other ship's movements are assessed by advanced target tracking software and alerted by CPA/TCPA data readouts.

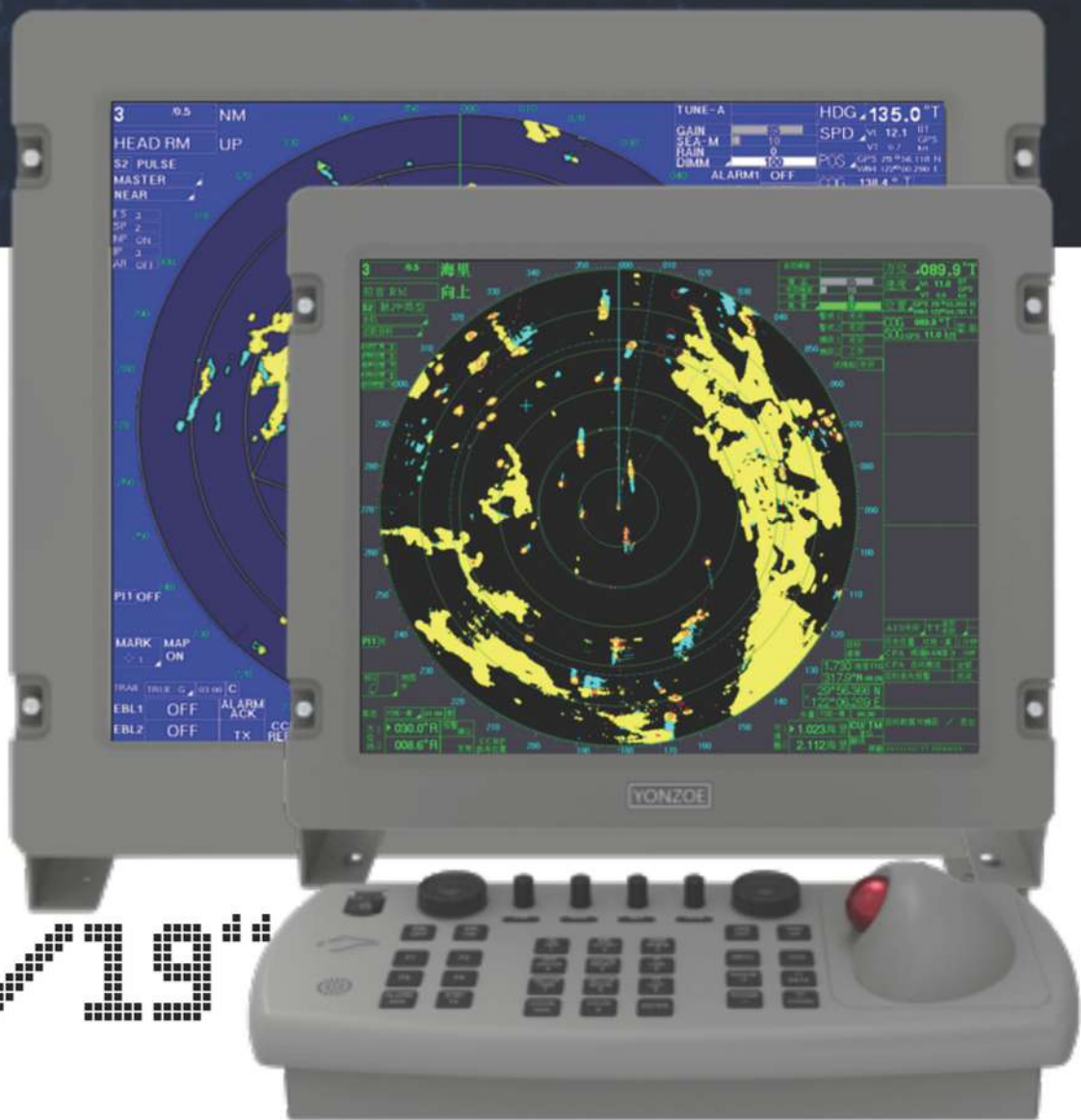
The YAR27 series can display AIS-equipped ships, when connected with an AIS transponder/receiver.

The radar antenna is available in length of 4, 6.5, or 8 ft.

Optional Power Output 12.5KW/25KW

-Most of the Parts are easy to get and interchangeable with Model FAR2xx7Series

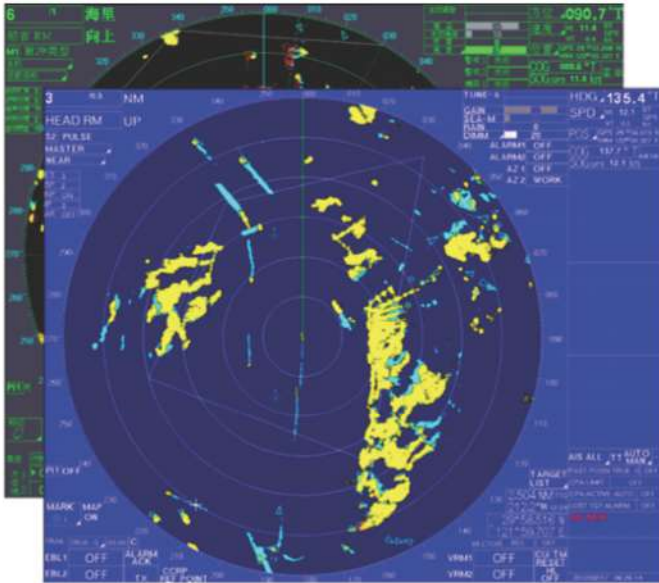
*Easy to Use; Reliable Performance*



23" / 19"



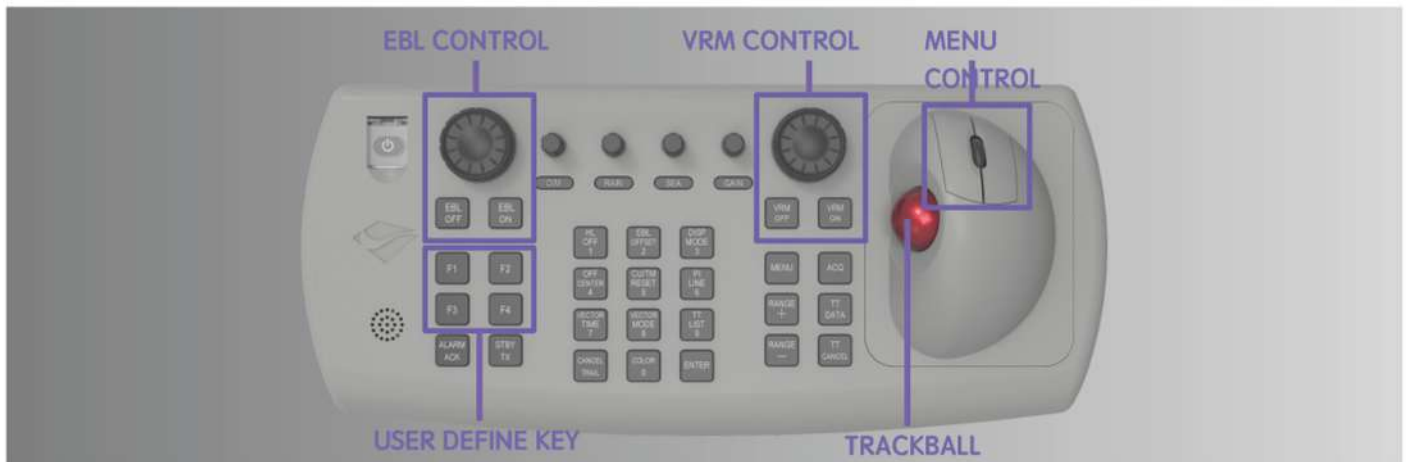
**YAR27**



## EN/CHN Optional

- ◆ Unique noise reduction and wave, rain clutter suppression technology, strong small target detection ability
- ◆ 0.125NM~96.0NM 14 ranges
- ◆ S1, S2, M1, M2, M, L six pulse options
- ◆ 200 ARPA targets
- ◆ 1000 AIS target display
- ◆ Relative/ground wake function
- ◆ Support 200 waypoints and 30 route planning.
- ◆ The complete equipment self-check function is convenient for maintenance.
- ◆ Optional built-in radar performance monitor (PM).
- ◆ YAR27 series ARPA radar passed the CCS product approval demonstration of China Classification Society
- ◆ EC EU marine directive equipment MED B mode and D mode

**Keyboard, trackball, with user-defined function keys, easy to control, and an optional Chinese keyboard**




**RAX12 (4ft); RAX20 (6ft); RAX24 (8ft) meet your needs**



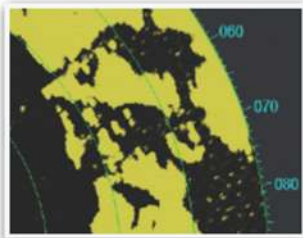
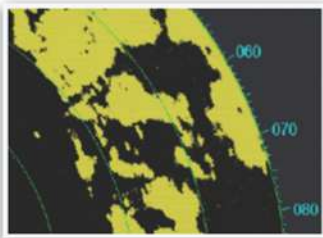


**For ships equipped with AIS equipment, click for more information**

|  |                          |
|--|--------------------------|
|  |                          |
| AIS A  | MMSI: 412373480 <b>1</b> |
| DI HAI 3   |                          |
| RNG: 4.860NM   | SOG: 0.0kn               |
| BRG: 302.8 ° R   | COG: 194.1 ° T           |
| HDG: Missing   | ROT: Missing             |
| CPA: 4.176NM   | TCPA: 12.3T              |
| BCP: 173.0NM   | BCI: 99.59               |
| PDS: LOW   | 29 ° 56.833N             |
|  | 122 ° 06.095E            |
| NAV STATUS: AT ANCHOR  |                          |
|  |                          |
| AIS A  | MMSI: 636013579 <b>0</b> |
| MESDAR   |                          |
| RNG: 7.834NM   | SOG: 0.7kn               |
| BRG: 315.1 ° R   | COG: 295.6 ° T           |
| HDG: 283 ° T   | ROT: 5.4 ° /min          |
| CPA: 4.343NM   | TCPA: 19.0S              |
| BCP: -34.78NM  | BCI: 99.59               |
| PDS: HIGH  | 29 ° 55.231N             |
|  | 122 ° 06.562E            |
| NAV STATUS: CONSTRAINED BY HER DRAUGHT   |                          |

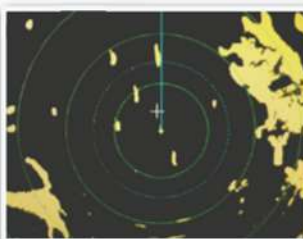
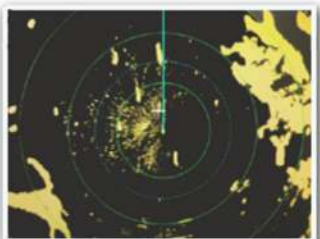
## AIS Info Contains:

1. Ship static data, including ship name, call sign, MMSI, IMO, ship type, ship length, ship width, etc.;
2. Ship dynamic data, including longitude, latitude, heading, course, speed, etc.;
3. Ship voyage data, including ship status, draft, destination, ETA, etc.



## Echo-Strech

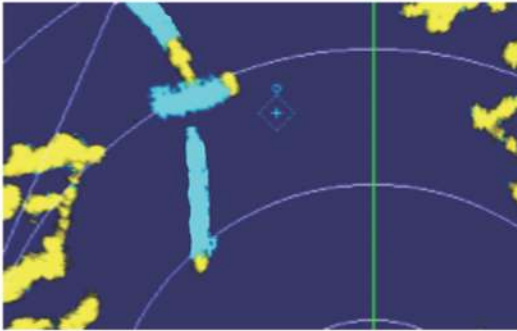
The echo stretch function is used to amplify the target in the range and azimuth direction to make the echo full and bright, and it can be used on any range. The Yar27 system has three options for echo stretch levels



## Sea wave, rain and snow clutter suppression/noise suppression

Clutter refers to the echoes of non-interested targets. These echoes will enter the receiving system and cause interference to the classification and recognition of targets, which may easily cause false alarms. Usually contains rain, snow and sea clutter; the Yar27 series has advanced sea clutter; rain clutter; noise processing circuits and algorithms, which greatly reduces the occurrence of false alarms.

## ○ Tail



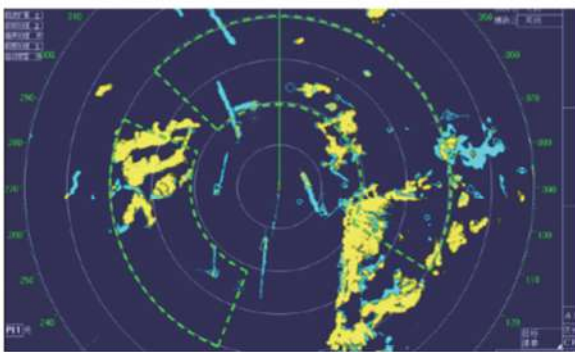
The target trajectory feature will produce a monotonous or gradual afterglow effect on all objects on the display. The shadow persistence draws the display content like a simulated PPI. The monotonic trajectory is very useful for showing the movement of one's own boat and the trajectory of other boats in a specific fishing operation. The tracking time can be adjusted to 15 seconds, 30 seconds, 1, 3, 6, 15, 25 minutes. The target path is expressed in a different color from the background. The unique feature of this radar is that you can select "True Wake" or "Relative Wake" mode in the "Relative Motion" menu (only "True" can

## ○ Radar Map



Up to 200 waypoints and 30 routes can be stored. Each route can contain up to 30 waypoints. Radar map is a combination of map lines and markers. Users can define and input navigation area, route planning and monitoring data. The radar chart can hold 3,000 lines and markers. Map data can be stored and recalled for repeated use in the regular navigation area.

## ○ Alarm Zone



### 1. Auto capture zone

Two automatic acquisition areas can be set in sectors or arbitrary polygons. They also act as restricted areas. The target in the automatic acquisition area is displayed as a dashed circle. The operator can manually obtain important targets without restriction.

### 2. CPA Zone

When the predicted heading (vector) of the target tracking symbol violates the CPA/TCPA set by the operator, the target tracking symbol will become a triangle. The operator can easily change the vector length to evaluate the target movement trend.

### 3. Alarm Zone

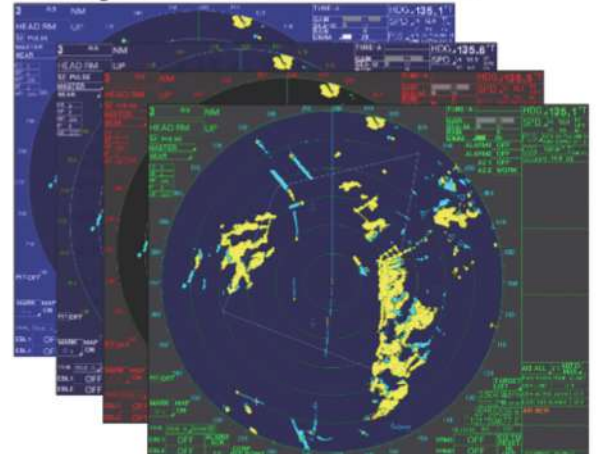
When the target enters the area set by the operator, the protection zone will generate visual and audible alarms.

## ○ Performance Monitor



The round boat complies with the international maritime and CCS mandatory regulations to ensure your navigation safety. It can be shipped with a built-in performance monitor PM, or it can be installed later

## ○ variety themes to choose from



## Specifications

### • Antenna & Scanner Unit

| Name                              | Parameters  | Note                    |           |           |
|-----------------------------------|---|-------------------------|-----------|-----------|
| Output frequency                  | 9410±30MHz  |                         |           |           |
| Output power (peak)               | RTR12   | RTR25                   |           |           |
|                                   | 12.5kW  | 25.0kW                  |           |           |
| Antenna                           | Type  | Slotted waveguide array |           |           |
|                                   | Polarization  | Horizontal              |           |           |
|                                   | Model   | RAX12                   | RAX20     | RAX24     |
|                                   | Length  | 4ft(1.2m)               | 6.5ft(2m) | 8ft(2.4m) |
|                                   | Beam width(H)                                       | 1.85°                   | 1.25°     | 0.95°     |
|                                   | Beam width(V)                                       | 22°                     | 22°       | 22°       |
|                                   | Sidelobe within ±10°                                | -24dB                   | -28dB     | -28dB     |
| Sidelobe outside ±10°             | -30dB   | -32dB                   | -32dB     |           |
| Rotation                          | 24rpm   |                         |           |           |
| Pulse length                      | 0.075us;0.15us;0.3us;0.5us;0.7us;1.2us              |                         |           |           |
| Pulse repetition frequency        | 500Hz;600Hz;1000Hz;1500Hz;3000Hz                    |                         |           |           |
| IF                                | 60MHz   |                         |           |           |
| Minimum range                     | 25m   |                         |           |           |
| Range discrimination              | 25m   |                         |           |           |
| Range accuracy                    | 1% of maximum range in use or 30m, which is greater |                         |           |           |
| Bearing accuracy                  | ≤1°   |                         |           |           |
| <b>Environmental conditions</b>   |   |                         |           |           |
| Ambient temperature               | -25°C~+70°C   | IEC 60945 Ed.4          |           |           |
| Storage temperature               | -30°C~+70°C   | IEC 60945 Ed.4          |           |           |
| Waterproof                        | IPX6  | IEC 60529               |           |           |
| <b>Performance monitor(RPM-X)</b> |   |                         |           |           |
| Frequency                         | 9410±45,MHz   |                         |           |           |
| Input power                       | +8~-+28dBm  |                         |           |           |
| Input pulse length                | ≥1us  |                         |           |           |
| Output power(second pulse)        | -56~-36dBm  |                         |           |           |
| Step level                        | +9~-11dB  | First to second pulse   |           |           |
| Temperature                       | -30°C~+80°C   |                         |           |           |

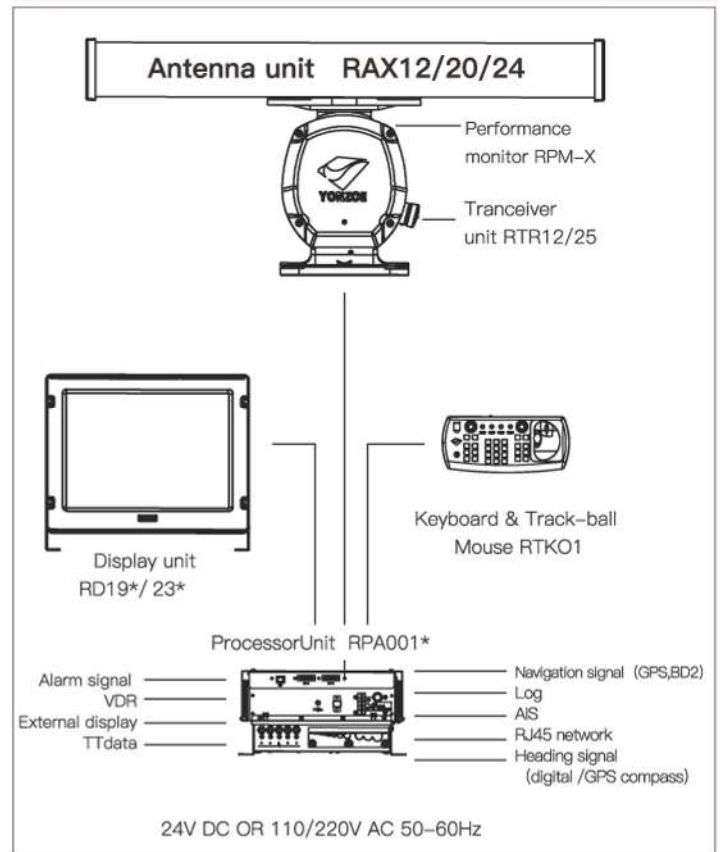
\*RPM-X is an optional

### • Display & Processor Unit

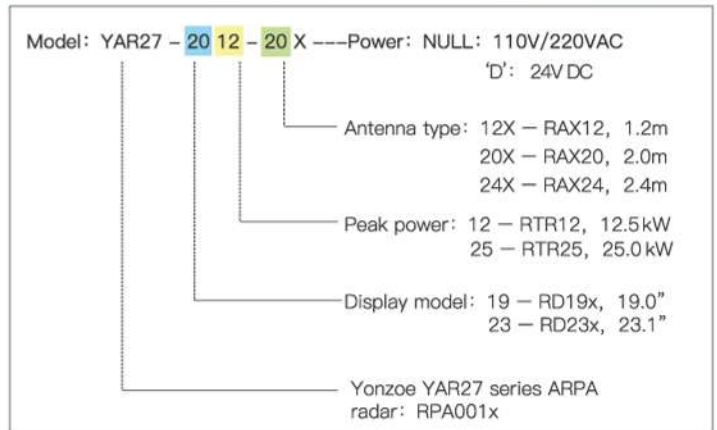
| Name                     | Parameters  | Note      |                       |                     |                 |      |     |     |   |    |    |    |    |    |
|--------------------------|---|-----------|-----------------------|---------------------|-----------------|------|-----|-----|---|----|----|----|----|----|
| Display size,model       | RD19x   | RD20x     | RD23x                 |                     |                 |      |     |     |   |    |    |    |    |    |
|                          | 19.0"   | 20.1"     | 23.1"                 |                     |                 |      |     |     |   |    |    |    |    |    |
| Effective radar diameter | 290mm   | 295mm     | 340mm                 |                     |                 |      |     |     |   |    |    |    |    |    |
| Resolution               | 1280x1024   | 1600x1200 | 1600x1200             |                     |                 |      |     |     |   |    |    |    |    |    |
| Color                    | Yellow,Green echoes in 32 levels  |           |                       |                     |                 |      |     |     |   |    |    |    |    |    |
| Range unit               | (NM) or (KM)  |           |                       |                     |                 |      |     |     |   |    |    |    |    |    |
| Display mode             | Head up relative motion;<br>Head up true bearing relative Motion;<br>North up relative motion;<br>North up true motion;<br>Course up relative m |           |                       |                     |                 |      |     |     |   |    |    |    |    |    |
|                          | Relative or true trails   |           |                       |                     |                 |      |     |     |   |    |    |    |    |    |
|                          | Target track  |           |                       |                     |                 |      |     |     |   |    |    |    |    |    |
|                          | Auto or manual  |           |                       |                     |                 |      |     |     |   |    |    |    |    |    |
| Radar map                | Navline, waypoints,shorelines,buoys,etc   |           |                       |                     |                 |      |     |     |   |    |    |    |    |    |
| Range(NM)                | 0.125   | 0.25      | 0.5                   | 0.75                | 1.0             | 1.5  | 2   | 3   | 6 | 12 | 24 | 32 | 48 | 96 |
| No.of rings              | 5   | 5         | 5                     | 5                   | 6               | 5    | 4   | 6   | 6 | 6  | 6  | 4  | 6  | 8  |
| Ring interval(NM)        | 0.025   | 0.05      | 0.1                   | 0.25                | 0.25            | 0.25 | 0.5 | 0.5 | 1 | 2  | 4  | 8  | 8  | 12 |
| Interface                | COMPASS;NAVIGATOR;LOG;AIS;<br>VDR;ARPA DATA;ALARM;RJ45  |           |                       | Network is optional |                 |      |     |     |   |    |    |    |    |    |
| Power                    | Monitor   | RD01      | 110VAC(85-130V)-2.0A  |                     | with 'D' for DC |      |     |     |   |    |    |    |    |    |
|                          |   | RD01D     | 220VAC(170-260V)-1.0A |                     |                 |      |     |     |   |    |    |    |    |    |
|                          | Processor   | RPA001    | 110VAC(85-130)-4.0A   |                     |                 |      |     |     |   |    |    |    |    |    |
|                          |   | RPA001D   | 220VAC(170-260)-2.0A  |                     |                 |      |     |     |   |    |    |    |    |    |
| Temperature              |   |           |                       |                     |                 |      |     |     |   |    |    |    |    |    |
| Ambient temperature      | -15°C~+55°C   |           |                       | IEC 60945           |                 |      |     |     |   |    |    |    |    |    |
| Storage temperature      | -30°C~+70°C   |           |                       | IEC 60945           |                 |      |     |     |   |    |    |    |    |    |
| Waterproof               | IPX0  |           |                       |                     |                 |      |     |     |   |    |    |    |    |    |

\*Connect cable: 30m Standard, cable mode is "RC25".

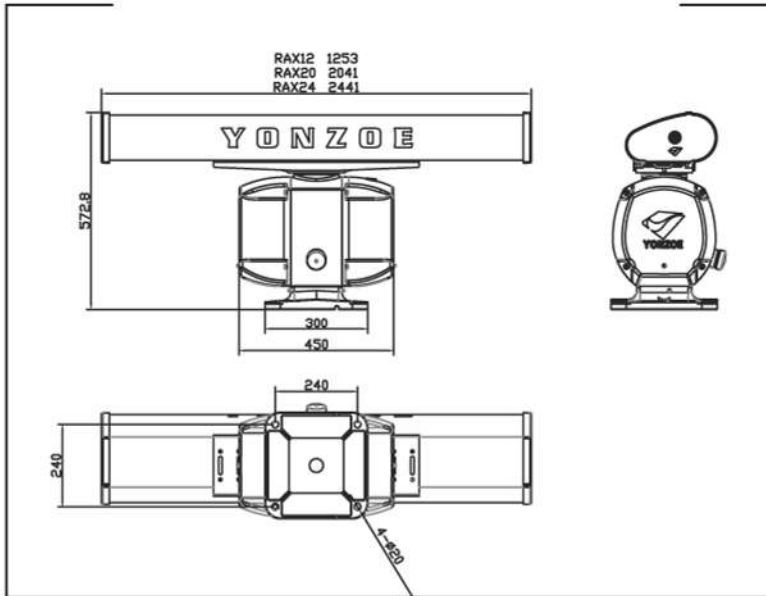
## Connections



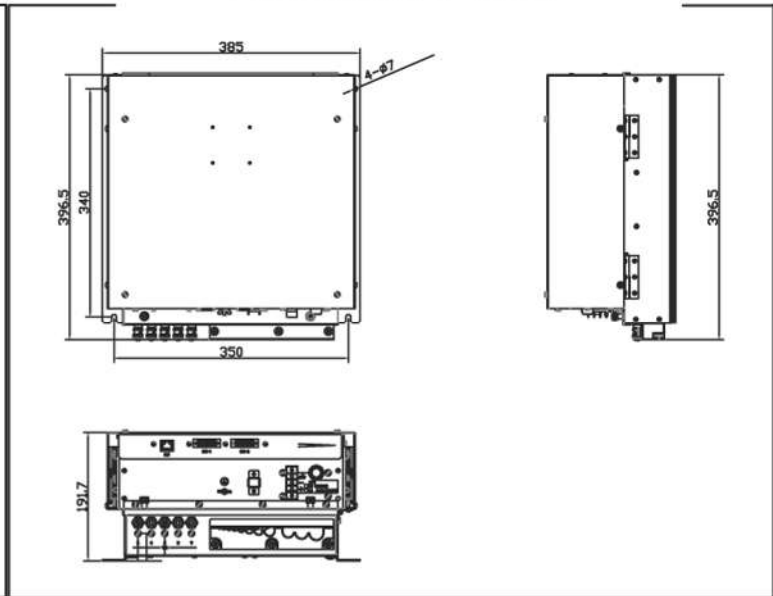
## Selection Tree



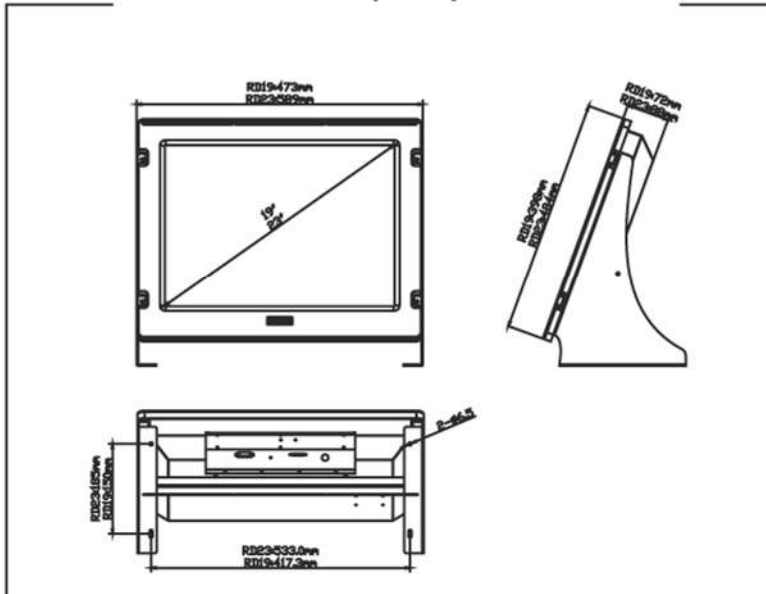
### Scanner/ Transciever



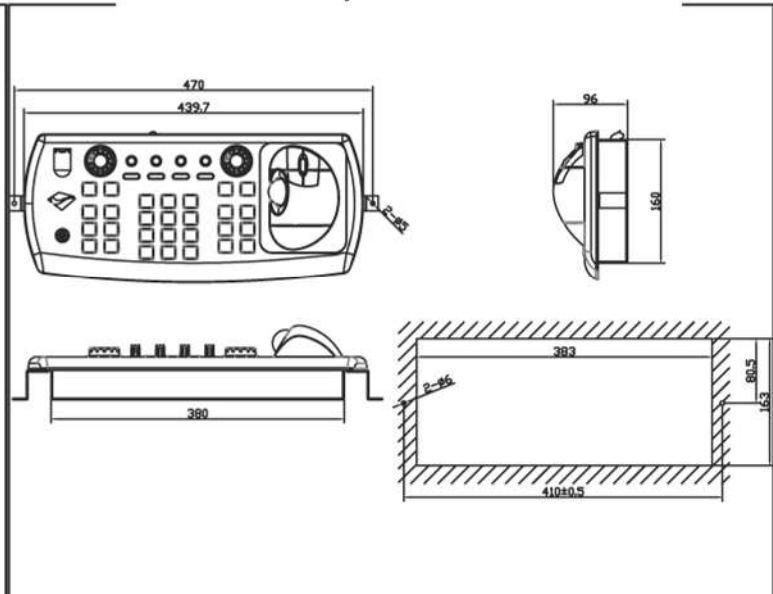
### Proccesor Unit



### Display



### KeyBoard



Add: 3rd floor, Block 5, Lane 1130, Tongpu Road, Putuo District, Shanghai  
 2000333, P.R.China | Zip: 200333 | Tel: 021-62582566  
 Fax: 021-62582567 | E-mail: [marketing@yonzoe.com](mailto:marketing@yonzoe.com)





| ITEM           | NAME                    | YAR27-SERIES                  | FAR-2XX7 SERIES      |
|----------------|-------------------------|-------------------------------|----------------------|
| TRANSCIEVER    | RF Main PCB             | 110602-RFC0x                  | 03P9346              |
|                | MF PCB                  | 110602-IFP0x                  | 03P9335              |
|                | Modulation PCB          | 110602-PMD0x-12               | 03P9244A             |
|                |                         | 110602-PMD0x-25               | 03P9244B             |
|                | POWER PCB               | 110602-RPW0x                  | 03P9348              |
|                | INTERFACE BOARD         | 110602-RIO0x                  | 03P9349              |
|                | ENCODING BOARD          | 110602-HBC0x                  | 03P9347              |
|                | TRANSFORMER             | RTX12/RTX25                   | RT-9025/RT-9023      |
| PROCESSOR UNIT | POWER PCB               | 110602-MPW0x<br>110602-MPW0xD | 03P9339<br>03P9338   |
|                | MAIN BOARD              | 110602-MBD0x                  | 03P9337              |
|                | HV PCB                  | 110602-HVB0x                  | HV9017               |
|                | INTERFACE BOARD         | 110602-MIO0x                  | 03P9342              |
| KEYBOARD       | KEYBOARD WITH TRACKBALL | 110602-KEY0x                  | RCU-014              |
| DISPLAY        | DISPLAYER               | 110602-DDR0x                  | MU-201CR<br>MU-231CR |

Add: 3rd floor, Block 5, Lane 1130, Tongpu Road, Putuo District, Shanghai  
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