



Complied with
IALA V-128
Basic, Standard
and Advanced

V700 can build up safety
and security together with users.

- Multi-radar integration
- VTS system for large-scale systems
- Linking with CCTV camera
- Integration with VHF coast station
- Microwave multiplex communications available
- Meteorological sensors incorporated
- Solid-state X-band radar available
- Complied with IALA V-128 Basic, Standard and Advanced
- Complied with IMO Resolution A.857(20)

JRC's VTS -performance features

Unique features

With JRC's highly reliable VTS solution, harbours of any size and on any location can benefit from automatic real-time traffic monitoring, warning and simulation features and broadcasting services that integrate seamlessly with the operator workstation.

About VTS

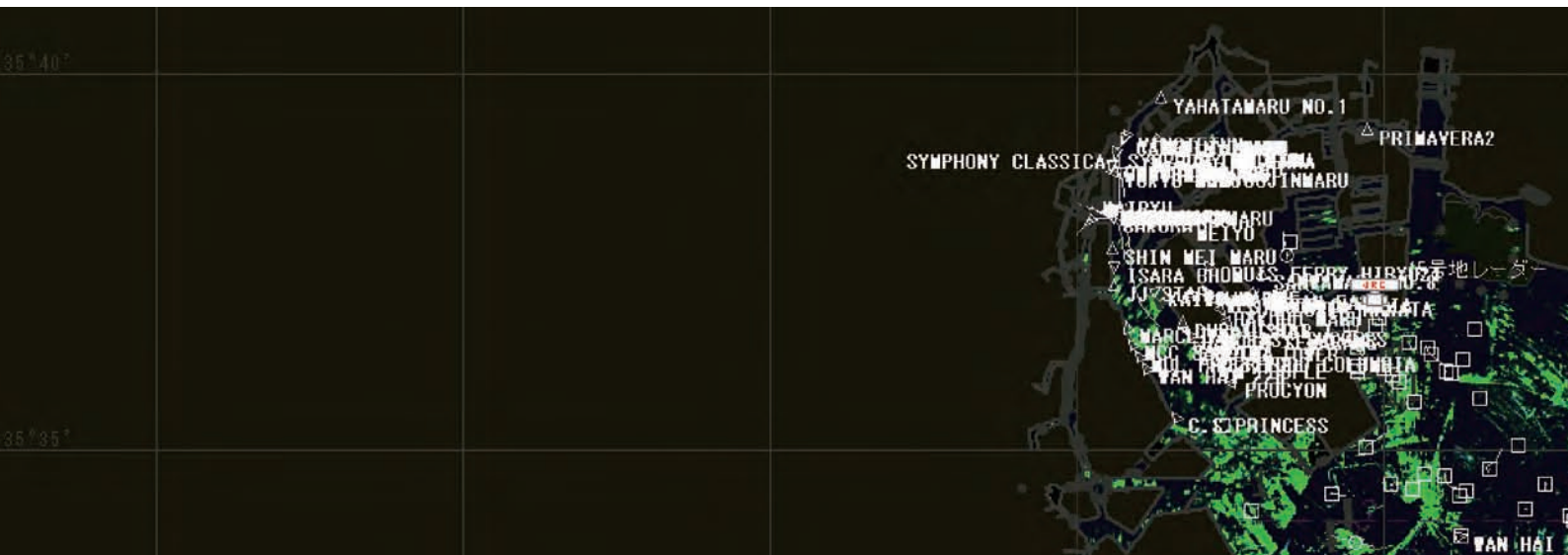
A Vessel Traffic System (VTS) is a marine traffic monitoring system establishing by harbour or port authorities. This service is designed to improve safety and efficiency of navigation, safety of life at sea and the protection of the marine environment. The VTS traffic image is compiled and collected by means of advanced sensors, such as radar, AIS, CCTV, VHF direction finder, and VHF or other cooperative systems.

Operating environment

JRC's VTS solution integrates all information in to a (single) operator working environment for ease of use and in order to allow for effective traffic organisation and communication. The intuitive and simple interfacing coincides with logical on-screen symbols and marks characterised with colouring. This way, all factors influencing the traffic as well as information about other participating vessels and their intension can be monitored, evaluated and responded upon, all via a central location in the port management area.

Reducing environmental impact

VTS is the balance of performance and energy efficiency. From designing for energy reduction to improve the recycling rate, JRC's design philosophy focuses on the future of our products. JRC strongly believes that reducing the environmental impact of our business starts with the design of products. JRC's VTS is designed to offer excellent environmental performance throughout its life cycle and to be energy efficient, which helps to reduce the environmental impacts associated with Carbon Dioxide (CO2), saving us all from using more of our valuable natural resources.



VTS -system flexibility

AIS base station

The AIS base station is a broadcast communication system, operating in the VHF maritime frequency band, and is capable of automatic vessel information data transmission to other neighbouring vessel's and to the operation center ashore. Information transferred includes identification, position, course, speed, and ship's dimensions, draught, type and cargo information. The AIS base station is fully compliant with international UAIS performance standards. It reduces VHF communication and improves target tracking, especially during bad weather conditions.

CCTV camera system

Closed Circuit Television (CCTV) integration is an important enhancement to the daily operation. The camera system allows pan, tilt, zoom and it has wiper functionality. It can be remotely controlled and can automatic acquisition targets, all simply via the operator console.

Transmitter/receiver

JRC's dual-25kW X-band transmitter/receiver has the advantage that it can be easily installed and maintained, due to a simplified mechanical construction design. A solid state construction is adapted to the electronic circuit blocks allowing for a highly reliable operational performance.

The amplifier, included in the receiver, uses a so-called logarithmic amplification so that unnecessary sea and rain clutter restraining the radar video signal can be easily suppressed in the system operation, which allows for improved radar observation.

Meteorological monitor system

JRC's meteorological monitoring system is an efficient tool for collection, storage and presentation of data from a range of various meteorological sensors, which measures wind speed, wind gust, wind direction, and also air temperature, air pressure, and the relative humidity. The information gathered from the various sensors is presented in an easy format. The meteorological sensors are lightweight and have a rugged modular design, which also can have low power consumption, as it is available as solar powered version.

Management information system

JRC offers total turnkey solutions, fully integrated and tailored to your unique operational needs. The management information system is a database system that extends data handling, ensuring that essential information becomes available in time for navigational decisionmaking. JRC's powerful database server includes a tightly integrated information backbone, allowing full sharing of information about arrival, departures, and transits among all the maritime parties, whilst processing continuously changing elements of the traffic.

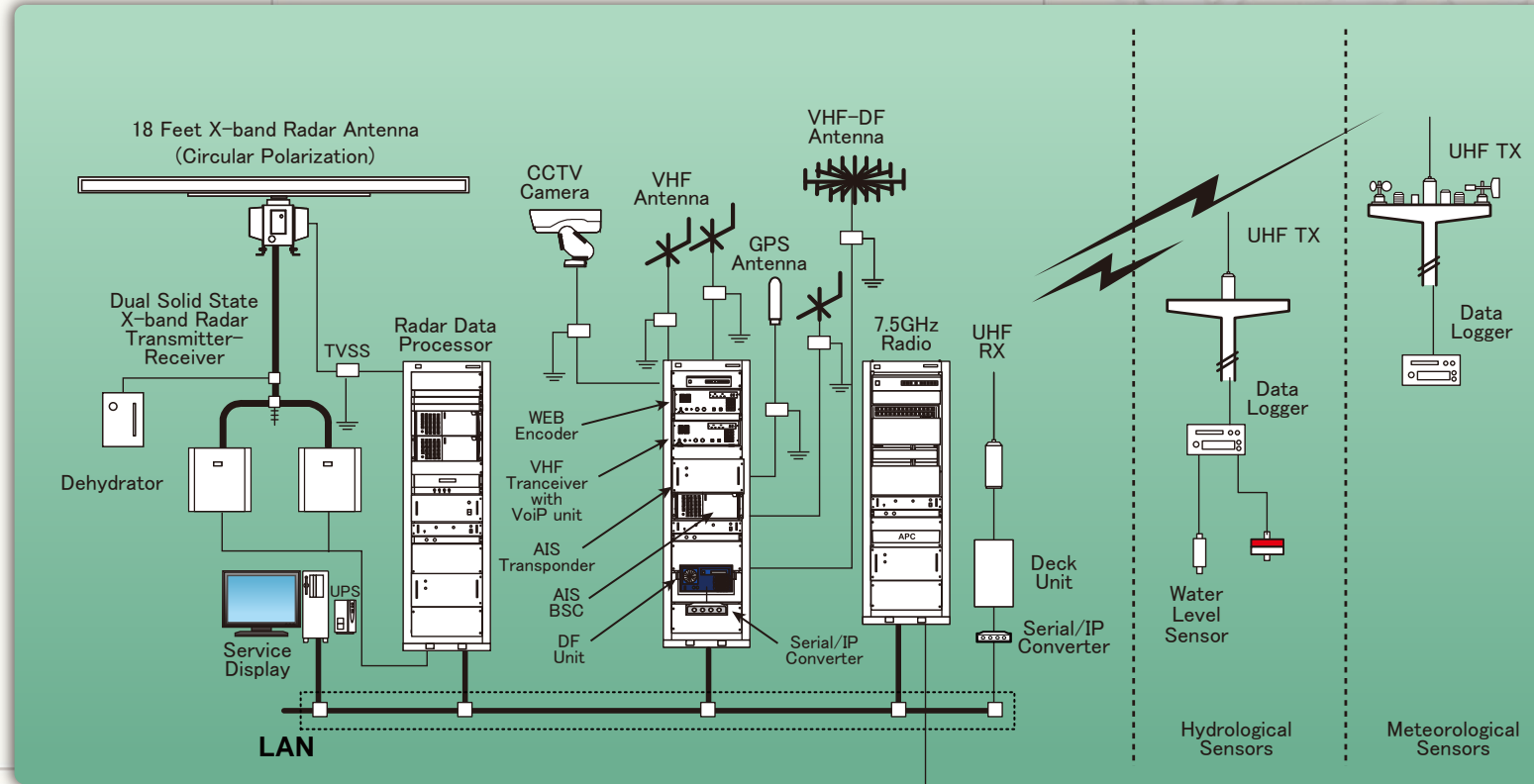
VHF coast station system

The JRC VHF coast station system is provided with radio equipment to allow communications with vessels under surveillance by the VTS. By integrating the VHF coast station system with the VTS, voice communications with a vessel under surveillance can be recorded and replayed in synchronization with the radar echo record of the vessel.

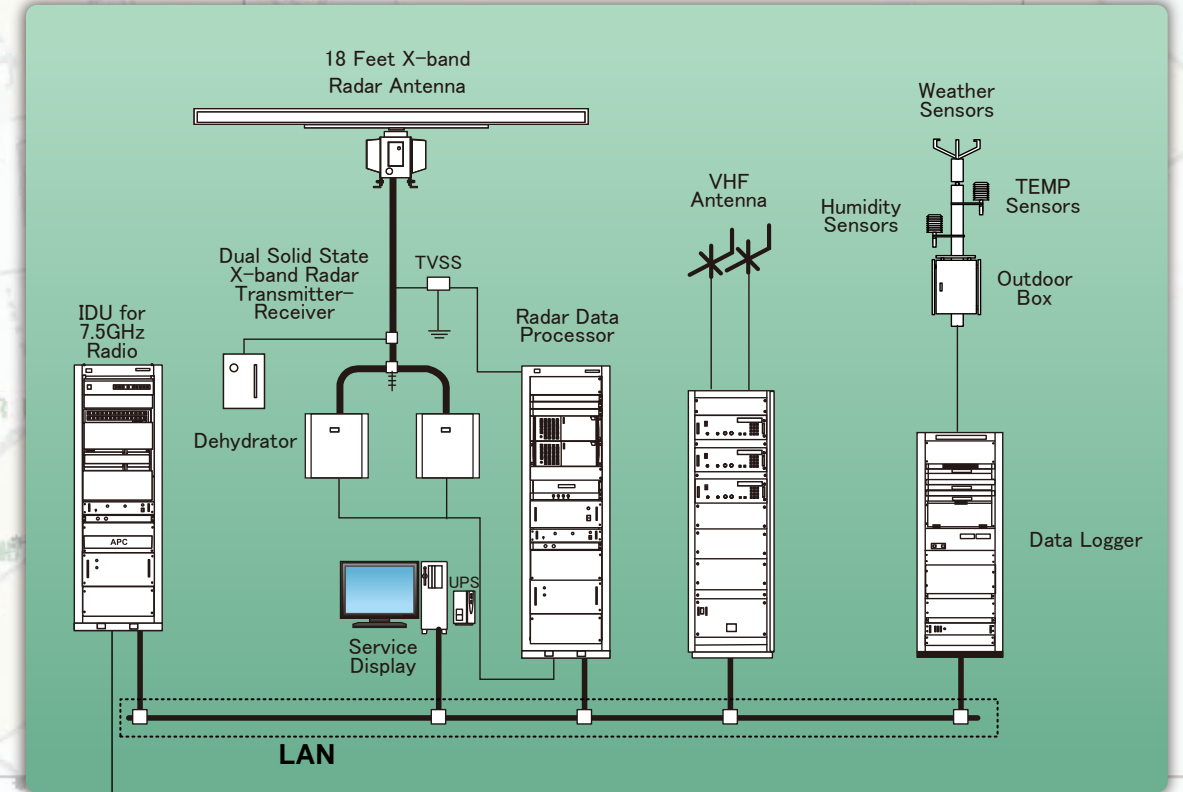


SYSTEM CONFIGURATION SAMPLE

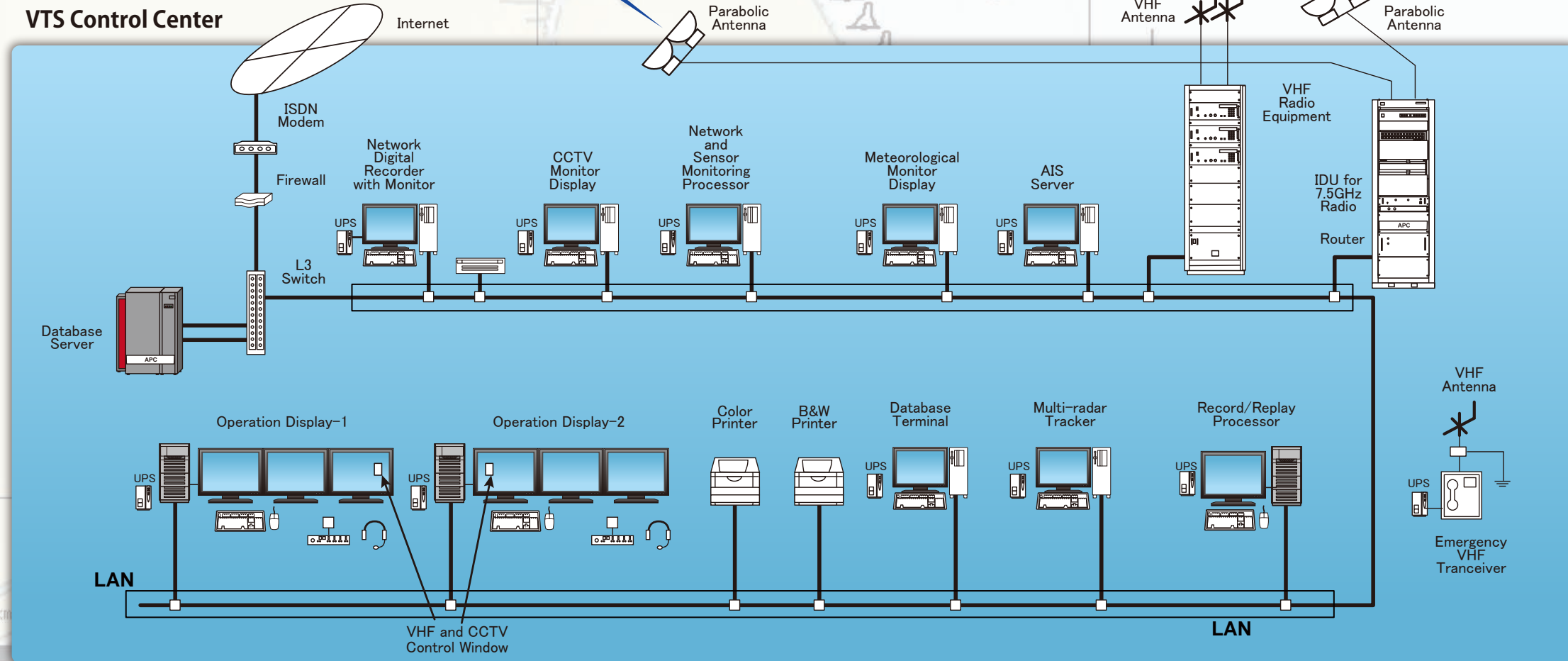
Radar Station-1



Radar Station-2



VTS Control Center



VTS system -developed for maximum ease of use

Customised package

One of the strengths of VTS system is its flexibility, as JRC is capable to design and integrate a customised package suiting the customer's needs. JRC's proven VTS system knowledge has led us to practically manufacture the complete solution in-house, ensuring low maintenance costs and long-term availability of spare parts.

Multiple locations

With JRC's VTS system solution, you can strategically position multiple radar stations to cover a whole area, which even further improves the safety and reduces the risk of vessel traffic accidents in port areas and approaches, whilst still monitoring vessel trafficking in a centralised control center. As port areas have the tendency to grow, not only new, but also existing traffic monitoring systems can be easily expanded, whether it involves additional sensors, relocation of existing modules or additional functionality.

Radar antenna

JRC has decades of experience in designing and manufacturing advanced radar systems. Typical JRC radars are installed on deep-sea vessels and provide outstanding performance and reliability, enabled to survive in the harshest marine conditions at sea. Now imagine these installed ashore, integrating the latest leading technologies, to provide real-time movements of vessels in a relative small geographical area.

Radar data processor

The processing unit is the heart of the operation, delivering a higher performance for the most demanding operation. With JRC's reliable VTS system solution, you will have enough sensor capability and full capacity to manage this enormity of information. The processing unit consists of a radar interface, image transmission, signal processor, plot extractor and tracking unit. It also has a flexible interfacing field, as it can integrate with numerous syems, including cameras, radio stdirection finders, transponders, hydrographic and meteorological sensors.

Multi sensor integrated processor

All target tracked data from the radar data processor (from all radar stations) and AIS target information from the base station will be transferred to a multi-sensor integrated processo. This rock-solid processor provides the performance, stability and security a control center requires. The following features are especially important for effective traffic monitoring:

- Integration of radar tracked data between radar stations.
- Integration between radar tracked targets and AIS targets.
- Integration between radar/AIS targets and database information.
- Alarm calculations: collisions, speed limits, restricted areas etc.
- Semi-automatic tracking.
- Data communication from and to radar data processors in radar stations, AIS server, operator consoles, record and playback processor, CCTV cameras, database server, network monitoring and remote and weather sensors.
- Remote controlling of radar sensors and CCT V cameras.



JRC's VTS Series

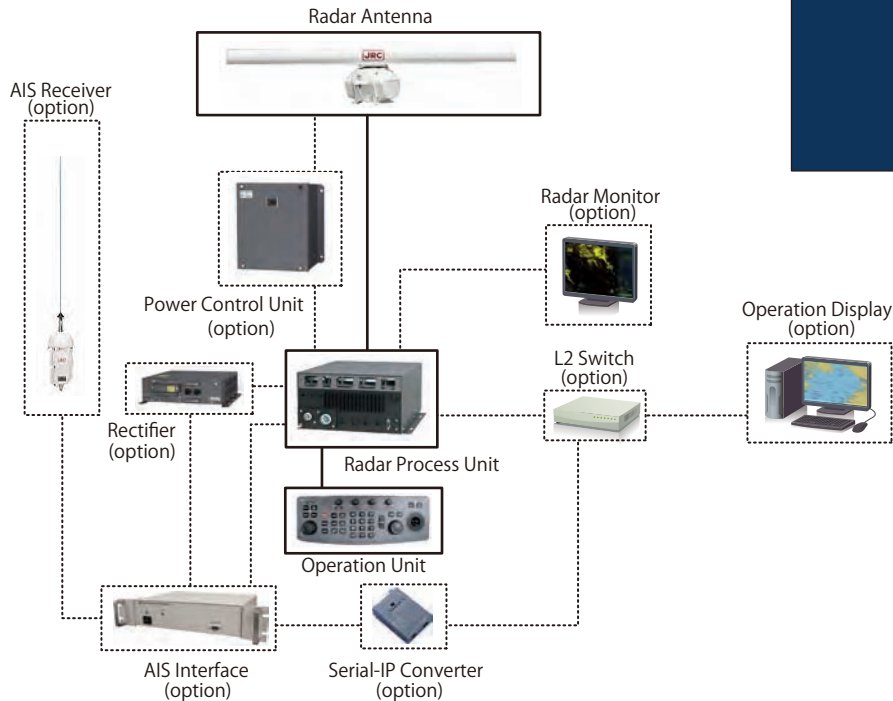
V600 Series

■ Easy installation

■ Suitable for

Ship navigation monitoring

Sea area monitoring around the radar station



Radar Antenna	6ft 10kW or 9ft 25kW
Tracking	Max 100 targets (need ARPA option)
AIS	Max 300 targets (need AIS option)
Option	Performance Monitor Radar Display Rectifier ARPA unit AIS Receiver kit Operation Display kit Power Control Unit

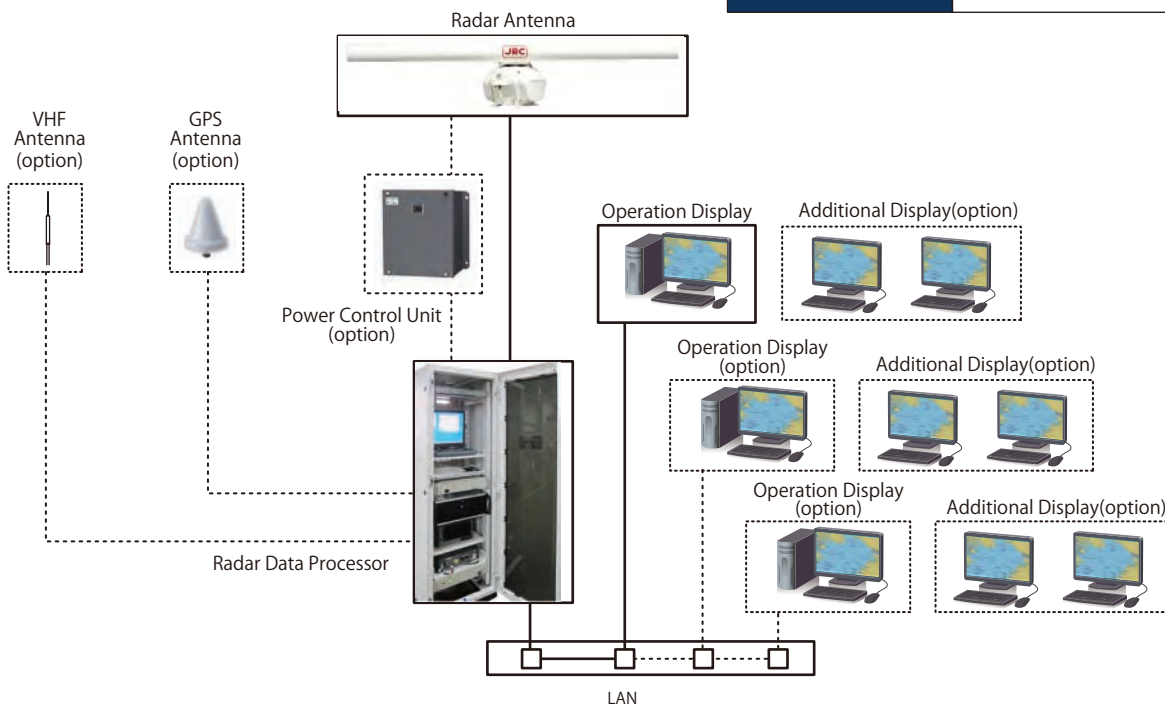
V620 Series

■ Excellent Target Tracking

■ Easy operation

■ Multi area monitoring

■ Recording and playback function



Radar Antenna	6ft 10kW or 9ft 25kW
Tracking	Max 300 targets
AIS	Max 1000 targets (need AIS option)
Option	Performance Monitor AIS Base Station kit Operation Display kit Additional Display Power Control Unit

V650 Series

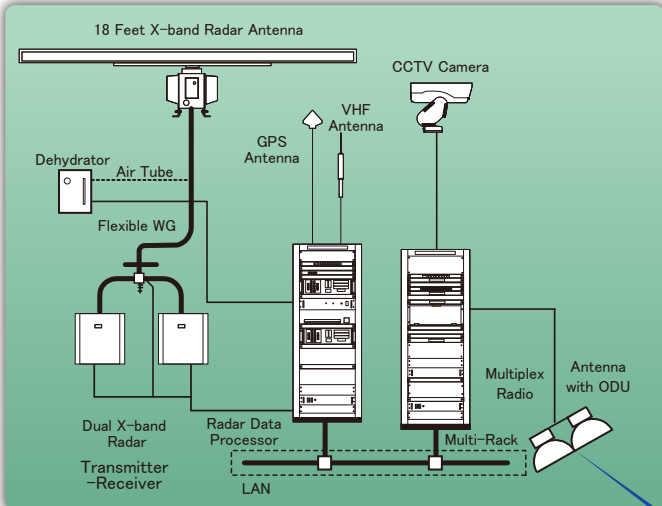
- Multi-radar integration of up to 3 radar stations
- Medium to large scale of VTS system configuration
- Various types of antenna selectable
- Solid-state X-band radar available
- Linking with CCTV camera (option)

Radar Antenna	9ft 25kW/SS, 18ft 25kW/SS *1
Radar	Max 3 radar composition
Tracking	Max 300 targets per radar
AIS	Max 1000 targets (need AIS option)
Option	Dehydrator AIS kit(Base Station/Receiver) CCTV Camera kit Operation Display kit Additional Display

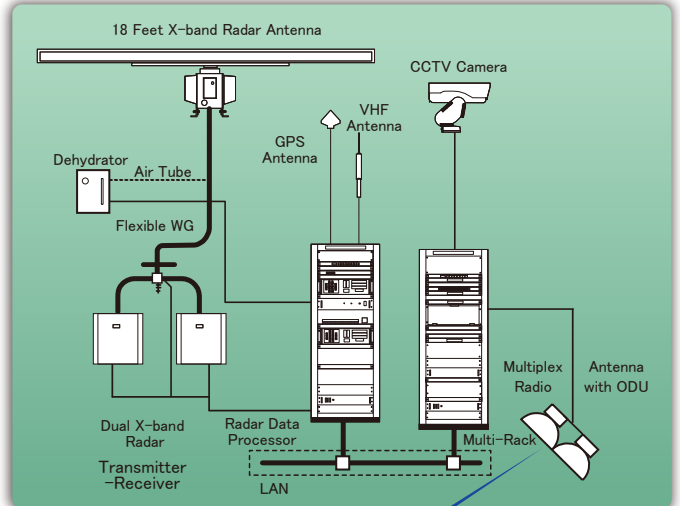
*1 SS: Solid State 200W

Configuration sample

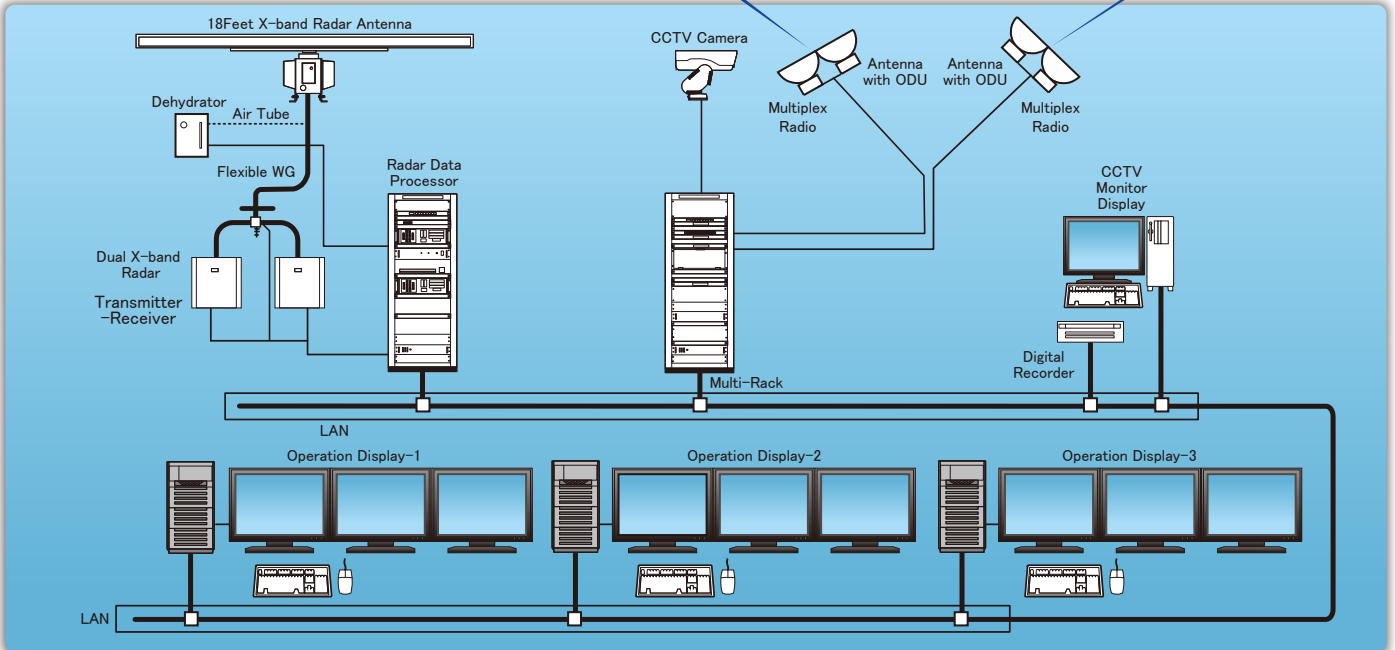
Radar Station-1



Radar Station-2



VTS Control Center



• Specifications may be subject to change without notice.

For further information, contact:



Since 1915

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