

Performance

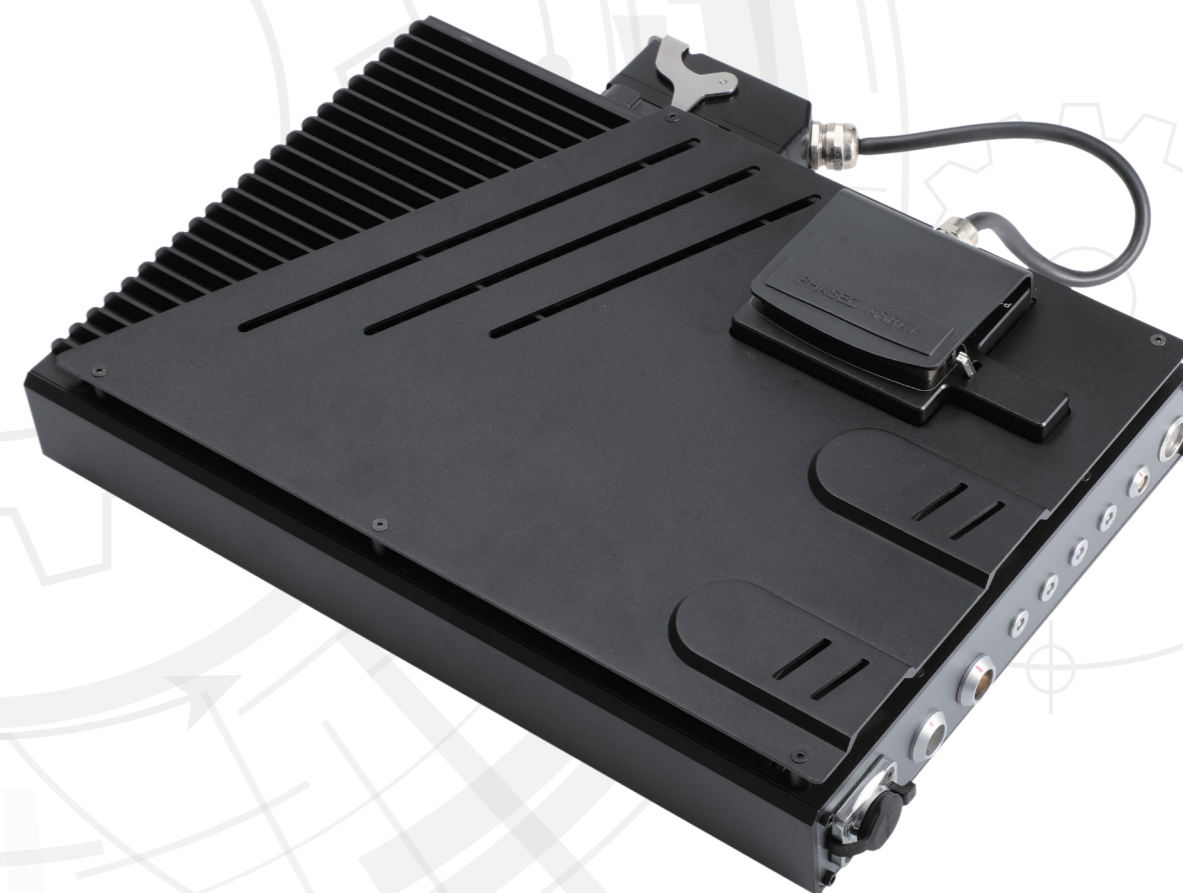
Parameter	PA Module	Conventional UT	
Configuration	Receiver/Pulser	64/128PR, 64/64PR, 32/128PR, 32/64PR	2/2
	Range	9900μs	9900μs
	Velocity	340-15240m/s	340-15240m/s
Pulser	Test Mode	PE/PC	PE/PC/TT/TOFD
	Voltage	20-120V/10V	100V/200V/400V
	Pulse Shape	Bipolar Square Wave	Negative Square Wave
	Pulse Width	20-1250ns/2.5ns	25-1000ns/2.5ns
	Rise Time	<10ns	<10ns
	PRF	40KHz	24KHz
	Delay	20μs/2.5ns	20μs/2.5ns
	damping	NA	500Ω/200Ω
	Receiver	Gain	0-120dB
Bandwidth		0.3-25MHz	0.3-25MHz
Input impedance		50Ω	50Ω
Input capacitance		60pF	60pF
Delay		20μs/2.5ns	20μs/2.5ns
Data Acquisition	Sampling Rate	100/200MHz	100/200MHz
	ADC	16bit	16bit
	Maximum a-scan points	16384	16384
	Number of focusing rules	1024	NA
	Focus Type	True Depth/Sound Path/Projection/Focal Plane	NA
	Detection	FW/HW+/HW-/RF	FW/HW+/HW-/RF
Scan/Display	Synchronize	Initial pulse or gate	Initial pulse or gate
	Detection Mode	PA/UT/TOFD/TFM/PWI-TFM	
	Type	TFM/Linear/Sectorial/Compound scanning	NA
	Display Mode	A/B/S/C/TFM/3D/TopC/Strip Chart	A/B/C/Strip Chart
Unit	mm/inch	mm/inch	
adaptive filtering	Have	NA	
Band filter	Full time data averaging	NA	
TCG	Point	16	16
	Gain Range	40dB	40dB
	Max Gain Slope	40dB/10ns	40dB/μs
Gate	Number	A/B/C/I+ Custom Gate	
	Threshold	0-100%	
	Trigger Mode	Peak/Leading Edge	
TFM	Point	1024*1024	
Report		WORD, PDF, EXCEL	
I/O Port	Ethernet	1000 Mb/s	
	Encoder	Dual-axis, LEMO 16-pin	
Language		Chinese/English/Russian	
Power Supply	DC Supply Voltage	15V DC	
Case	Size	368.9mmx250.6mmx90.1mm	
	Weight	5kg	
Temperature	Working Temperature	-10-45°C	
	Storage Temperature	-20-70°C	
	Relative Humidity	20%~90%RH (+40°C)	

Stock code: 301528

DOPPLER[®]

DOPPLER ELECTRONIC TECHNOLOGY

Phased Array Ultrasonic Board **ROBUST P2**



3D
Real time 3D
Detection function

**FMC
PWI**
Total focusing detection
Points 1024 x 1024

3D
simultaneous focusing
simulation of multiple
groups

D
Two-dimensional
scanning and
intelligent analysis



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ROBUST P2 Phased Array Ultrasonic Board

The ROBUST P2 board optimizes the hardware architecture based on the P1 model, featuring an advanced design with 128-channel parallel transmission and 64-channel reception. It supports a maximum of 128-element phased array probes, significantly improving the parallel computing capability for data acquisition and processing. This board integrates three detection modes: UT (Ultrasonic Testing), PA (Phased Array), and TFM, offering flexibility to address complex non-destructive testing needs across various industrial fields, including aerospace, energy, and rail transportation.

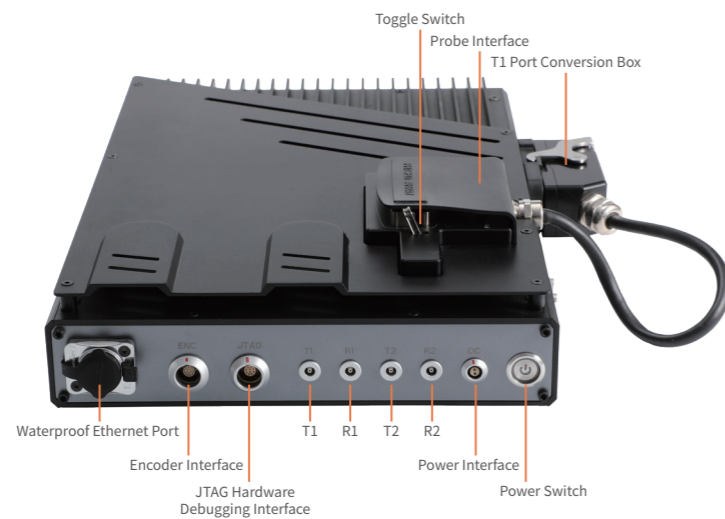
The P2 features an industrial design in black and gray tones, with a simple and stable appearance that exudes a strong modern and technological feel. The casing is made from high-strength aluminum alloy, offering excellent pressure and impact resistance, ensuring the device operates stably over long periods. To address the device's cooling requirements, an optimized heat dissipation structure is incorporated, enhancing both efficiency and service life. The device is equipped with an IP67 waterproof rectangular Ethernet port, providing effective protection against water ingress and dust, making it suitable for use in various complex environments and ensuring stable performance even under harsh conditions. The overall design balances industrial aesthetics with functionality and durability, making it ideal for high-intensity work environments.

Cutting-Edge Detection Performance Empowering Various Application Scenarios

This board is the core component of the intelligent automation detection platform, breaking through the limitations of traditional detection efficiency with three key innovations:

1. Intelligent Mode Switching – Supports automatic switching between phased array and full-focus modes.
2. Dynamic Channel Configuration – Supports the collaborative operation of PA-UT and PA-TOFD detection methods.
3. High-Pressure Detection Expansion Architecture – Features an independent 400V high-pressure channel.

Additionally, it supports seamless integration with industrial robots or intelligent robotic arms, enabling intelligent path planning, real-time data fusion, and offline data tracking, creating a complete digital detection workflow. This technology is particularly suited for high-end manufacturing sectors such as aerospace, smart manufacturing, new energy, and 3C industries.

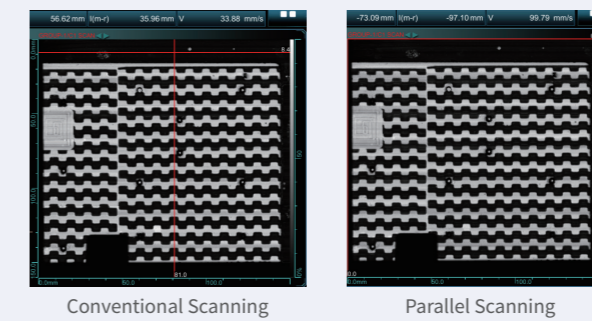
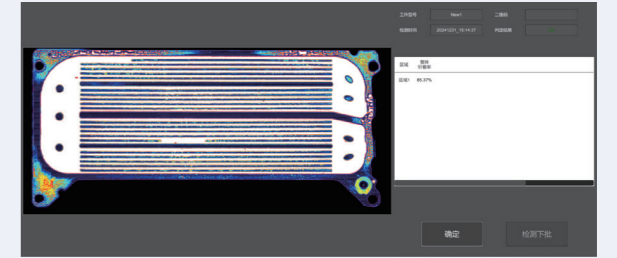


Comprehensive Functionality, Flexible Expansion

The software system developed by DOPPLER provides complete supporting features, fully adaptable to various detection environments, and meets users' routine inspection needs. The system adopts a modular design and offers open software and hardware expansion interfaces. It supports secondary development based on user-specific requirements, effectively addressing customized needs in special scenarios, ensuring the flexibility and scalability of the detection solutions.

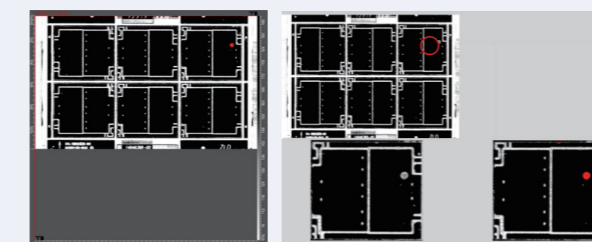
Intelligent Defect Analysis Precise Quality Control

The intelligent defect analysis module developed for software can automatically analyze the scanning results of batch workpieces based on preset standards, enabling fast and accurate OK/NG judgment. This feature significantly improves the quality inspection efficiency and consistency of factory products, helping manufacturing enterprises build a reliable quality control system and effectively reducing the product defect rate.



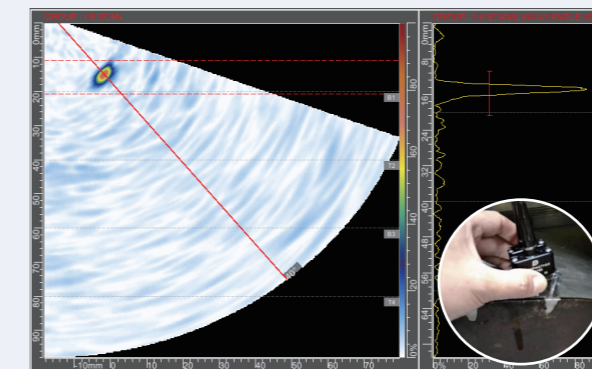
64-Channel Parallel Scanning, Breaking Through Detection Speed Bottlenecks

The new generation board adopts an innovative 64-channel parallel architecture, achieving a significant leap in detection efficiency compared to the P1 board. In practical applications, the system's detection speed is 2-3 times faster than conventional modes, with the potential for even higher performance breakthroughs in certain application scenarios. This provides strong hardware support for large-scale, rapid detection.



Intelligent Defect Recognition and Analysis

As an automated detection platform product, the ROBUST board's accompanying software fully considers the needs of automation. It can quickly and automatically capture defects and perform defect statistics, significantly reducing the data evaluation workload. This is one of the key elements for achieving automation in phased array testing.



Supports DLA/DMA Probes

The software supports various advanced detection functions, including DLA detection, matrix array detection, and DMA detection. These functions can be used for multiple workpieces and applications. For materials that are difficult for ultrasound to penetrate, such as austenitic stainless steel, conventional linear array probes often have low signal-to-noise ratios and may struggle to detect defects. DMA probes offer better focusing effects and higher signal-to-noise ratios, thereby improving defect detection rates.