

# Dependability Quality



**TECHINCO**

**CORROSION & NDT MANAGEMENT**

Technical Inspection &  
Corrosion Control Company  
Since 1994

ISO 9001:2008, ISO 14001:2004, OHSAS 18001:2007, IMS

## Other Asset Integrity Management Tools

- Risk-Based Inspection (RBI)
- Reliability Centered Maintenance (RCM)
- Hazard and Operability Study (HAZOP Study) and Safety Integrity Level (SIL Study)
- Fitness For Service (FFS)
- Failure Mode, Effect and Criticality Analysis (FMECA)
- Fault Tree Analysis (FTA)
- Material and Coating Selection
- Corrosion Monitoring and Controlling System
- Cathodic Protection

Certified By:



Membership of:



**TECHINCO**

Technical Inspection & Corrosion Control Company

Tel:+98-21-88529728-36

Fax:+98-21-88741040

[www.techinco.net](http://www.techinco.net)

[info@techinco.net](mailto:info@techinco.net)

# Phased Array



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**WHEN YOU NEED**

**FLAW POSITIONING AND SIZING**

Address: No. 18, Kooh-e-Noor St., Motahari Ave., Tehran, Iran



# Phased Array

# Phased Array



**Phased Array** is an advanced pulse-echo technique that utilizes multiple miniaturized transducers and time-delays to shape the ultrasonic sound beam to a desired angle and focus. The versatility of the system permits simultaneous views of different presentations, such as sectoral views as well as A-Scan, B-Scan and C-Scan representations.

Instead of a single transducer and beam, **Phased Arrays** use multiple ultrasonic elements and electronic time delays to create beams by constructive and destructive interference.

In comparison with manual pulse-echo techniques, the advantages of **Phased Array** testing are its excellent repeatability, increased inspection speed, more accurate results and the ability to inspect complex geometries and to visualize indications in welds and/or base materials using B, C, D and S-scans (with all A-scans included). Moreover, **Phased Array** allows the digital storage of all data, location and system settings, and is very much safer to operate within a working environment, compared with Non-Destructive Testing methods that use X-rays and gamma-rays for detecting imperfections.

## Application Range

### Petrochemical

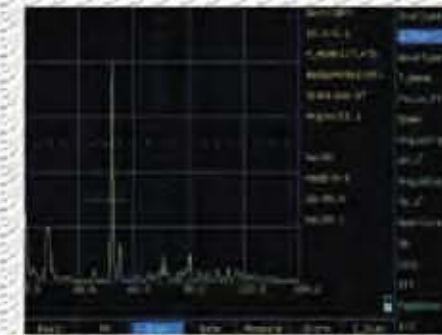
- Corrosion mapping
- Detection of HIC and SOHIC
- Weld Inspection of pressure vessels, piping, tubing and plates
- Vessels and piping fabricated with composite materials
- Weld inspection of complex geometries, such as nozzle-welds
- Flange face corrosion inspection
- Fast corrosion scanning, utilizing 0 degree angled wedges

### Aerospace

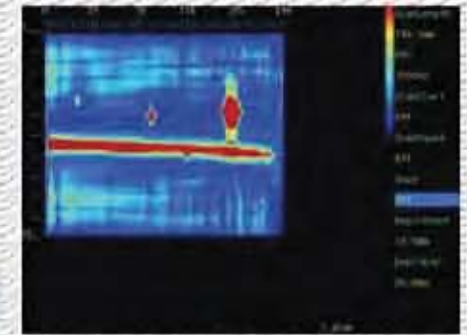
- Friction stir welds
- Composite panels
- Titanium billets, forgings and castings
- Landing gear cylinders

### Power Generation

- Turbine blades and christmas tree designs
- Pressure vessel and piping welds
- Erosion/corrosion mapping



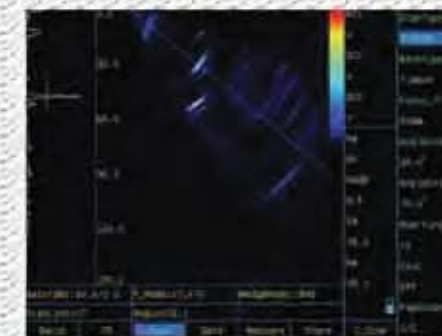
A-Scan



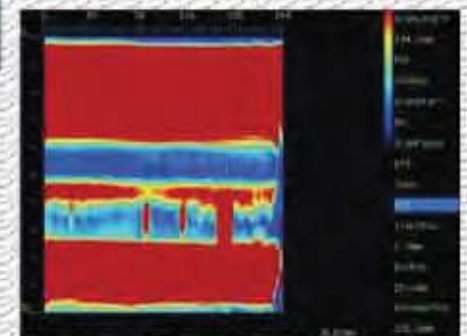
B-Scan



Crawler



C-Scan



D-Scan

## Technical Specifications

Flaw Detection Performance	Conventional	Phased Array
System Bandwidth	0.5-15MHz	1-10MHz
A/D Sampling Frequency	Max. 240 MHz	120MHz
Probe Connector	Two BNC or Lemo Connectors	One, for Supporting 16/32/64/128 elements probes, featured with auto-recognition function for probes
Scan Type		Linear / Sector / C / D scan
Scan Angle Range		Linear scan : -45---45 degree Sector scan: -80---80 degree
Detection Range	0~6000mm	0~1000mm
Display Mode	A-scan Echo	A-scan Echo + Image / C-scan Image
Velocity		1000~10000m/s
Operating Environment		0°C~40°C

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