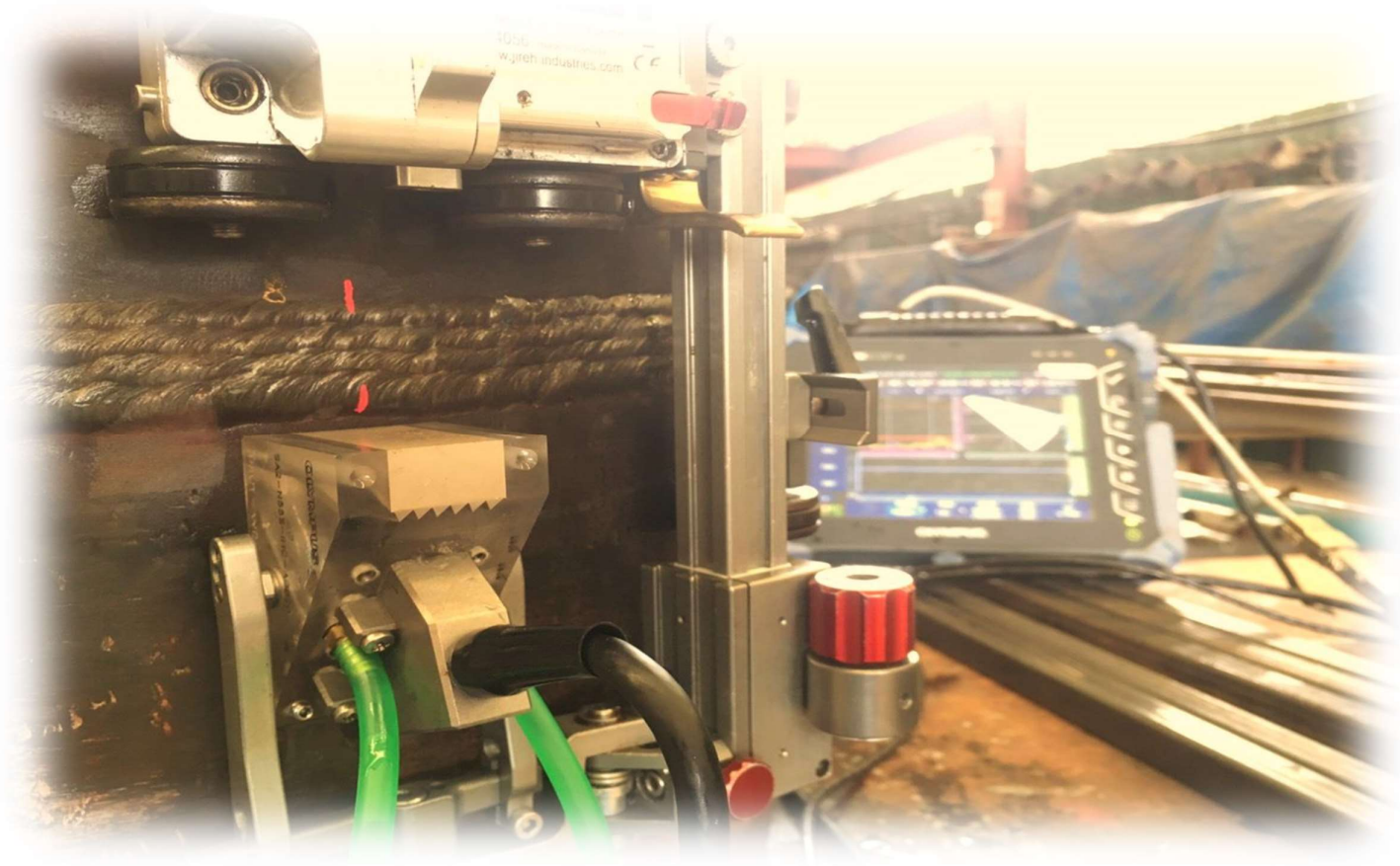
SIAM INSPECTION SERVICE COMPANY LIMITED



COMPANY PROFILE .

ISO 9001 BUREAU VERITAS Certification

9/39 Highway 36 T.Mabkha, A.Nikhompattana, Rayong
Thailand 21180 Tel.+66 38 026035 FAX +66 038 026 306
Mobile:+66 617 411 100, +66 88 076 1787

CONTENT

COMPANY OVERVIEW

Siam Inspection Service Company Limited (SISCO) provides quality non-destructive and inspection services to the Refinery & Petrochemical plant and industries plant.

Our services included but are not limited to the testing and inspection of piping, vessels, tanks, boilers, structure steel work etc. during fabrication, field construction and plant maintenances work. We also provide field verification for the thickness of materials such as piping, plates etc. prior to fabrication due to ensure the material shall meet the required standard, thus preventing costly of rework.

Siam Inspection Services Staff are experienced and fully qualified having been trained in accordance to international standard e.g. ASME, AWS, API etc.

Our Company Working Procedures cover most inspection & testing applications however, these can easily be modified to suit any particular Client are needs To ensure we can respond to a Clients need in the shortest possible time, we ensure our Inspection Equipment is well maintained and in calibration.

Siam Inspection Service can also provide the additional manpower resources as required to suit the requirements of our Clients.

COMPANY SERVICES

- ✓ Phase Array Ultrasonic Testing (PAUT)
- ✓ Ultrasonic Flaw Detector Testing(UT)
- ✓ Liquid Penetrant Testing(PT)
- ✓ Magnetic Particle Testing(MT)
- ✓ Visual Testing(VT)
- ✓ Ultrasonic Thickness Measurement(U.T.M.)
- ✓ Holiday Detector Testing

COMPANY INFORMATION

Legal Title	: Siam Inspection Service Company Limited
Legal Status	: Private Company Registered
Address	: 9/39 Highway 36 T. Mabkha, A. Nikhompattana, Rayong Thailand
	Tel.:+66(0)33 013 967 HP.:+66(0)617 411 100 Fax.:+66(0)38 606 477
Website	: www.siaminspection.co.th
Operation Office	: Mapkha, Rayong
Contact Personnel	: Ms. Ploypapus Mokrahongsombat
	Tell+66 817 617 870
	Email: ploypapus.m@siaminspection.co.th
	Mr.Anurak Sonsuphap
	Tell+66 880 761 787
	Email: anurak.s@siaminspection.co.th

QUALITY POLICY

Siam Inspection Service places particular emphasis on providing experience, expertise, capability and quality services. The policy of company management is to provide the services in a manner which conforms to the Clients requirements, the Contract, Regulatory requirements and current good practice.

In order to implement this policy the Siam Inspection Service Management are committed to the establishment and maintenance of effective quality systems both at Corporate and at Project levels. This commitment has a particular emphasis on the development of human resources and continuous improvement.

The Siam Inspection Service Management and Field Staff are committed to provide the Client with the inspection and NDT services and works that meet contractual and regulatory requirements and are fit for purpose and understand that it is the joint responsibility of all individuals employed by Siam Inspection Service to comply with the Quality requirements.

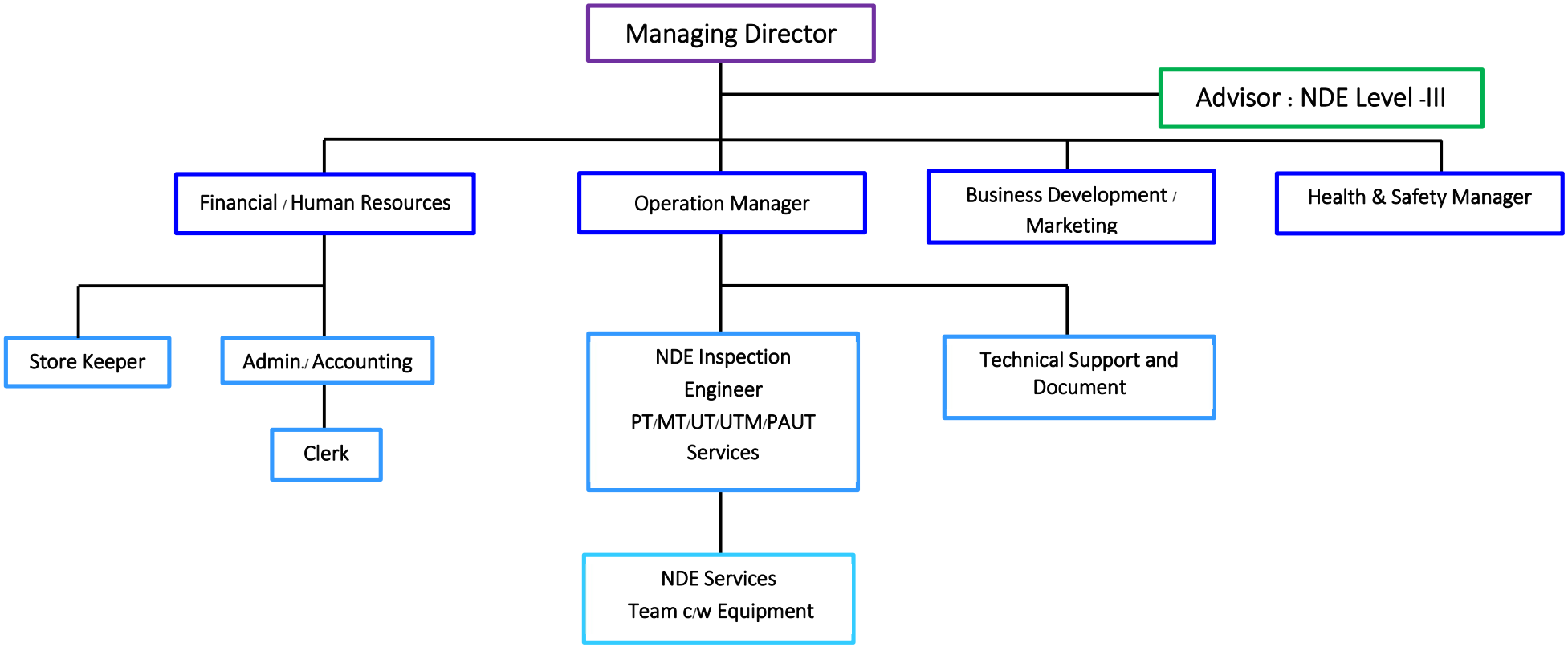
Performance criteria for all processes that are part of our Quality Management System are set and monitored in order to continuously improve our processes and adjust performance criteria. Client feedback is an important criteria in this process to help ensure we meet Client expectations. As part of this process we like to take time with our Clients to ensure they understand the services they will receive and the procedures that will be used to ensure they meet their needs and requirements.

PERSONNEL

Siam Inspection Service has fully qualified and experienced personnel not only in their direct manpower resources but also in their supporting and professional staff to ensure they provide the best quality service.

The management and all who work on behalf of Siam Inspection Service are committed to provide NDT Services with consistent quality in a safe and the most effective manner and ensure that all our activities are carried out in conformance with the relevant local and international Codes & Legislation and meet Client and work requirements

ORGANIZATION CHART



SCOPE OF SERVICE

Phase Array Ultrasonic Testing

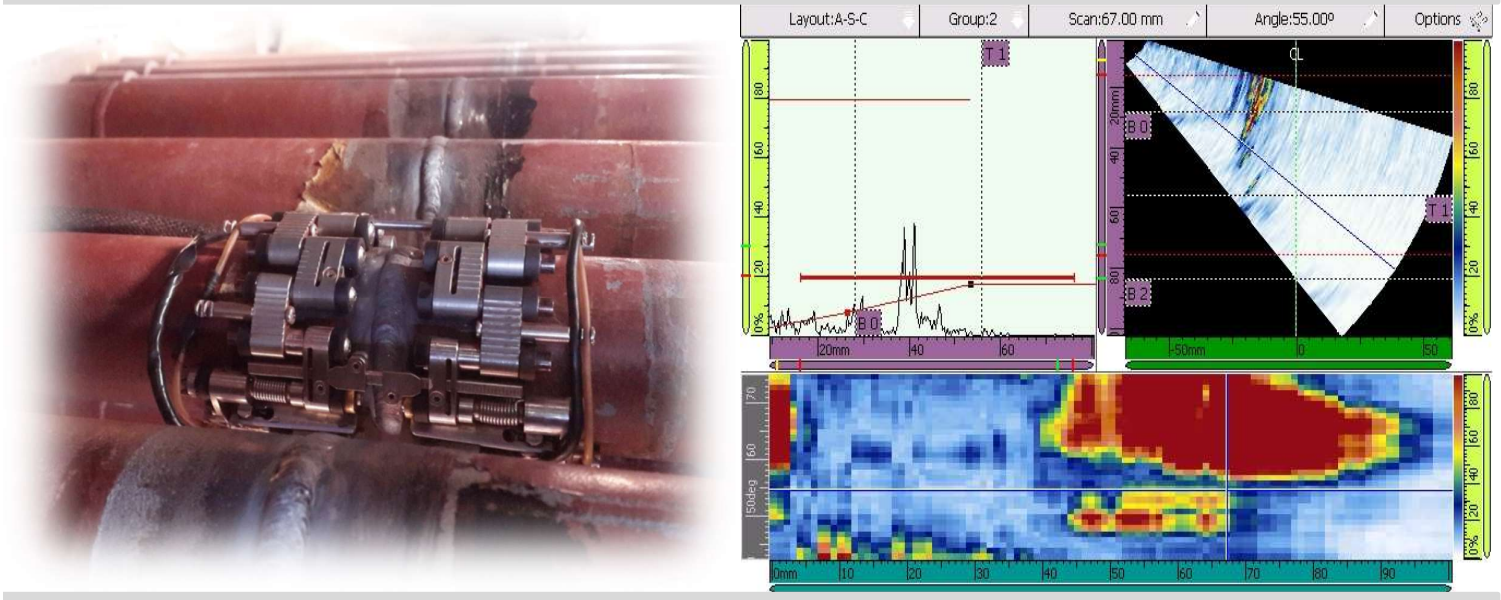
Phased array ultrasonic testing(PAUT) is an advanced method of ultrasonic testing.

Single-element (non-phased array) probes, known technically as monolithic probes, emit a beam in a fixed direction. To test or interrogate a large volume of material, a conventional probe must be physically scanned (moved or turned) to sweep the beam through the area of interest.

In contrast, the beam from a phased array probe can be focused and swept electronically without moving the probe. The beam is controllable because a phased array probe is made up of multiple small elements, each of which can be pulsed individually at a computer-calculated timing. The term phased refers to the timing, and the term array refers to the multiple elements. Phased array ultrasonic testing is based on principles of wave physics

Typical examples of the testing being carried out are as shown below:

Phase Array Ultrasonic Testing, Defect Piping with manuals scan



Ultrasonic testing

Ultrasonic testing (UT) is at testing technique based on the propagation of ultrasonic waves in the objector material tested. In most common UT applications, very short ultrasonic pulse-waves with center frequencies ranging from 0.1-15MHz, and occasionally up to 50MHz, are transmitted into materials to detect internal flaws or to characterize materials. A common example is measurement, which tests the thickness of the test object, for example, to monitor pipe work corrosion.

LiquiPenetrant Testing

Liquid Penetrant inspection (PT), also called Dye penetrant inspection or penetrant testing (PT), is a widely applied inspection method used to locate surface-breaking defects in all non-porous materials (metals ,plastics ,or ceramics).PT is typically used to detect casting, forging and welding surface defects such as hairline cracks, surface porosity, leaks in new products ,and fatigue cracks on in-service components

Magnetic particle Inspection

Magnetic particle Inspection (MT) is a non-destructive testing process for detecting surface and slightly subsurface discontinuities in ferromagnetic materials such as iron, nickel, cobalt, and some of their alloys. The process puts a magnetic field into the part. The piece can be magnetized by director in direct magnetization. Direct magnetization occurs when the electric current is passed through the test object and a magnetic field is formed in the material. Indirect magnetization occurs when no electric current is passed through the test object, but magnetic field is applied from an outside source. The magnetic lines of force are perpendicular to the direction of the electric current.

The presence of a surface or subsurface discontinuity in the material allows the magnetic flux to leak, since air cannot support as much magnetic field per unit volume as metals.

To identify a magnetic flux leak, ferrous particles, either dry or in a wet suspension, are applied to a part. These are attracted to an area of flux leakage and form what is known as an indication, which is evaluated to determine its nature ,cause ,and course of action ,if any.

Visual Testing

Visual testing is the most commonly used test method in industry. Because most test methods require that the operator look at the surface of the part being inspected, visual inspection is inherent in most of the other test methods. As the name implies, VT involves the visual observation of the surface of a test object to evaluate the presence of surface discontinuities. VT inspections may be by Direct Viewing, using line-of sight vision, or may be enhanced with the use of optical instruments such as magnifying glasses, mirrors, boroscopes, charge-coupled devices (CCDs) and computer-assisted viewing systems (Remote Viewing). Corrosion, misalignment of parts, physical damage and cracks are just some of the discontinuities that may be detected by visual examinations.

Ultrasonic Thickness Measurement

Ultrasonic waves travel through metals at a constant speed characteristic to a given alloy with minor variations due to other factors like temperature. Ultrasonic thickness measurement (UTM) is a method of performing non-destructive measurement (gauging) of the local thickness of a solid element basing on the time taken by the ultrasound wave to return to the surface.



Holiday Detector Testing

A holiday test is a non-destructive test method applied on protective coatings to

detect unacceptable discontinuities such as pinholes and voids. Holiday testing involves checking an electric circuit to see if current flows to complete the circuit. This testing is used to find coating film discontinuities that are not readily visible.

A holiday test is usually performed on tank interiors, chemical storage vessels and buried structures because of the importance of maintaining adequate coating protection in aggressive service environments., also known as a continuity test.

NDT Equipment and Instruments List

1. **Phased Array Ultrasonic Testing(PAUT)**

OlympusOmniscanMX2	1	Unit
Olympus Omni scan SX	2	Unit
GE Mentor UT	1	Unit
Total	**4**	**Unit**

2. **Ultrasonic Flaw Detector(Conventional UT)**

KrautkramerUSM36	1	Unit
Total	**1**	**Unit**

3. **Magnetic Particle Yokes(MT)**

Magna flux AC Electric Yoke	2	Unit
Calling ton AC Electric Yoke	1	Unit
Total	**3**	**Unit**

4. **Ultrasonic Thickness Measurement (UTM)**

Cygnus4+Pro	1	Unit
Cygnus6+Pro	1	Unit
Total	**2**	**Unit**

5. **Holiday Detector Testing**

Elcometer 280	1	Unit
Total	**1**	**Unit**

SIAM INSPECTION SERVICE CO.,LTD.

EQUIPMENT DATA SHEET

FLAW DETECTOR,Olympus OmniScan MX2

1.Phased Array Module Specifications	
Overall dimensions (WxHxD)	226mmx183mmx40mm (8.9in.x7.2in.x1.6in.)
weight	1.6kg(3.5b)
Connectors	1 Phased Array connector: Olympus PA connector 2 UT connector:LEMO 00
Number of focal laws	256
Probe recognition	Automatic probe recognition
Aperture	32 elements
Number of element	128 element

Pulser	PA Channels	UT Channels
Valtage	40 V,80 V,and 115V	95 V,175 V,and 340V
Pulse width	Adjustable from 30 ns to 500 ns resolution of 2.5 ns	Adjustable from 30 ns to 1000 ns;resolution of 2.5 ns
Pulse shape	Negative square pulse	Negative square pulse
Output impedance (32:128PR model)	35 Ω in pulse-echo mode 35 Ω in pulse-echo mode	< 35 Ω
Output impedance (all other model)	25 Ω	< 35 Ω

Receiver	PA Channels	UT Channels
Gain	0 dB to 80 dB, maximum input signal 550mVp-p (full-screen height)	0 dB to 120 dB, maximum input signal 34.5 Vp-p (full-screen height)
Output impedance (32:128PR model)	50 Ω in pulse-echo mode 90 Ω in pulse-echo mode	60 Ω in pulse-echo mode 50 Ω in pulse-echo mode
Output impedance (all other model)	65 Ω	60 Ω in pulse-echo mode 50 Ω in pulse-echo mode
System bandwidth	0.6 MHz to 18 MHz (-3 dB)	0.25 MHz to 28 MHz (-3 dB)

Data processing	PA Channels	UT Channels
Number of data points	Up to 8,192	
Real-time averaging	2,4,8,16	2,4,8,16,32,64
Rectifier	RF,full wave,half wave+,half wave -	
Fitering	3 low-pass,3 band-pass,and 5 high-pass fiters.	3 low-pass,6 band-pass,and 3 high-pass fiters. (8 low-pass fiters when configured in TOFD)
Video fitering	Smoothing(adjusted to probe frequency range)	
Beam forming	Scan type group quantity	Sectorial and linear Up to 8
Data Acquisition	Digitizing frequency Maximum pulsing rate	100 MHz Up to 10 MHz (C-scan)
Data visualization	A-scan refresh rate	Real-time : 60Hz
Data synchronization	On internal clock On encoder	1 Hz to 10 Hz On 2 axes: from 1 to 65,536 steps
Programmable Time-Corrected Gain (TCG)	Number of points	32: One TCG curve per focal law
Alarms	Number of alarms Conditions Analog outputs	3 Any logical combination of gates 2

SIAM INSPECTION SERVICE CO.,LTD.

EQUIPMENT DATA SHEET

FLAW DETECTOR,Olympus OmniScan SX

1.Phased Array Module Specifications		
Overall dimensions	295mmx230mmx60mm	
(WxHxD)	(12"x9.4"x2.4")	
weight	1.6kg(3.5b)	
Connectors	1 Phased Array connector: Olympus PA connector	
	2 UT connector:LEMO 00	
Number of focal laws	256	
Probe recognition	Automatic probe recognition	
Aperture	32 elements	
Number of element	128 element	
Pulser	**PA Channels**	**UT Channels**
Valtage	40 V,80 V,and 115V	95 V,175 V,and 340V
Pulse width	Adjustable from 30 ns to 500 ns	Adjustable from 30 ns to 1000 ns;resolution of 2.5 ns
	resolution of 2.5 ns	
Pulse shape	Negative square pulse	Negative square pulse
Output impedance	35 Ω in pulse-echo mode	< 30 Ω
	35 Ω in pulse-echo mode	
Receiver	**PA Channels**	**UT Channels**
Gain	0 dB to 80 dB, maximum input signal 550mVp-p	0 dB to 120 dB, maximum input signal 34.5 Vp-p
	(full-screen height)	(full-screen height)
Output impedance	60 Ω in pulse-echo mode	60 Ω in pulse-echo mode
	150 Ω in pulse-echo mode	50 Ω in pulse-echo mode
System bandwidth	0.6 MHz to 18 MHz (-3 dB)	0.25 MHz to 28 MHz (-3 dB)
Data processing	**PA Channels**	**UT Channels**
Number of data points	Up to 8,192	
Real-time averaging	2,4,8,16	2,4,8,16,32,64
Rectifier	RF,full wave,half wave+,half wave -	
Fitering	3 low-pass,3 band-pass,and 5 high-pass fiters.	3 low-pass,6 band-pass,and 3 high-pass fiters.
		(8 low-pass fiters when configured in TOFD)
Video fitering	Smoothing(adjusted to probe frequency range)	
Beam forming	Scan type	Sectorial and linear
	group quantity	Up to 8
Data Acquisition	Digitizing frequency	100 MHz
	Maximum pulsing rate	Up to 10 MHz (C-scan)
Data visualization	A-scan refresh rate	Real-time : 60Hz
Data synchronization	On internal clock	1 Hz to 10 Hz
	On encoder	On 2 axes: from 1 to 65,536 steps
Programmable Time-Corrected Gain (TCG)	Number of points	32: One TCG curve per focal law
	Maximum slope	40 dB/10ns
Alarms	Number of alarms	3
	Conditions	Any logical combination of gates

SIAM INSPECTION SERVICE CO.,LTD.

EQUIPMENT DATA SHEET

ULTRASONIC THICKNESS GAUGE(UTM),Cygnus4+PRO

1.GENRAL INFORMATION	
Display	Display2.4" quarterVGALCD
Size	132x82x34mm
Weight	300grams(inc.batteries)
Power	3xAAbatteries
Connector	TwinLemo00
Materials	Sound velocities between1000-9000m/s-coversvirtually all common engineering materials
Accuracy	±0.1mm or0.1% of thickness measurement, which ever is greatest, when calibrated in accordance with Cygnus Instruments calibration procedure
Resolution	Multiple-Echo mode-0.1mm or 0.05mm Single-Echo and Echo-Echo modes-0.01mm
Probes	**Single crystal probes:** 6mm-5MHz (S5A) 13mm-2.25MHz (S2C(standard) 3.5MHz(S3C) or5MHz(S5C) 19mm-2.25MHz(S2D) **Twincrystalprobes:** 5mm-7.5MHz(T7A) 8 mm-5MHz (T5B (standard) 13mm-2MHz (T2C (for attenuative materials such as cast metals, plasticsand composites)
Measurement Range in Steel	**Single crystal probes in Multiple-Echo:** 3-250 mm with 2.25MHz probe (S2C/D) 2-150 mm with 3.5MHz probe(S3C) 1-50 mm with 5MHz probe (S5C/A) **Twin crystal probes in Single-Echo:** 2.5-250 mm with 2MHz probe (T2C)1-200 mm with 5MHz probe (T5B) 0.8-50mmwith7.5MHz probe (T7A) **Twin crystal probes in Echo-Echo:** 5-50 mm with 2MHz probe (T2C) 4-50 mm with 5MHz probe (T5B) 3-25mm with 7.5 MHz probe (T7A)
DataLogging	Capacity up to 5000 points including A-scans
Computer Software	CygLink allows remote logging and viewing of A-scangraphs. Survey and report generation to PDFfile. Data can be exported as a .csvfile.Graphicanalys is of data and statistical calculations.Designed for Windows7 and Windows8.

SIAM INSPECTION SERVICE CO.,LTD.

EQUIPMENT DATA SHEET

CONVENTIONAL UT (Krautkramer USM36)

Technical Specification

Display screen	
Size	7”
Active range(W×H)	152.4×91.44mm2
Resolution(W×H)	800×480pixels
Range	4…14,108mm(555“) for longitudinal wave
Display	
Display shift (delay)	–15…3,500µs
Probe delay	0…1,000µs
Velocity	250…16,000m/s
PRF	Automatically optimized 15…2,000Hz, 3 automatic setting modes:Auto Low,Auto Med,Auto High,Manual
Connectors	
Probe connectors	2×LEMO-1or2×BNC
USB interface	USBtypeBconnector
Service interface	LEMO-1B,8pin

Pulser		General	
Pulse rmode	Spike pulser,optionally: Square-wav epulser	Battery	Li-Ion, operating time: 13 hours with full charge Charging method (standard): internal with power adapter Charging method (optional): external charger Charge level: proportional charge level indicator
Pulser voltage(SQ mode)	120…300V,in steps of 10V with a tolerance of10%		
Pulser falling/rising time	max.10ns		
Pulser width (SQ mode)	30…500 ns, in steps of 10ns	Power adapter	Universal power supply unit 100…240VAC,50/60Hz
Pulser amplitude (Spike mode)	low:120V,high:300V	Size (W×H×D)	255×177×100mm (10”×7.0”×3.9”)
Pulser energy (Spike mode)	low:30nS,high:100nS	Weight	2.2kg incl.battery
Damping	50ohms,1000ohms	Languages	Bulgarian,Chinese,Czech,Dutch,English,Finnish,French,German,Hungarian,Italian,Japanese,Norwegian,Polish,Portuguese,Romanian,Russian,Spanish,Swedish
Receiver			
Digital gain	Dynamic range 110dB,adjustable in steps of 0.2dB	Damp heat and humidity(storage)	EN 60068 Part 2-30 6 cycles: 9hrs at+25° Cup in 3hrs to +55°C,9hrsat+55°Cthendownto +25°Cin3hrs,at93%humidity
Analog band width	0.5…20MHz		
Equivalentinputnoise	<80nV/√Hz	Vibration	EN60068Part2-6 2gperaxis,5…150Hz,1oct/min,25cycles
Filters	Broadband:1-5MHz/2,2.25MHz /4,5MHz/10MHz/13,15MHz	Shocks	EN60068Part2-27 1000 cycles peraxis,15g,11ms,half-sine
Rectification	Positive half-wave,negative half-wave,fullwave,RFsignal	Enclosure	IP 66 according to IEC 60529
Gates		Operating temperature	–10…55°C
Independent gates	GatesA and B(triggering by gateA),GateC (option,triggering by gateA or B)	Cold operation	–10°C fo r16hrs,502.5 Procedure II
Measurement mode	Peak,Flank,J-FLANK,FIRSTPEAK	Heat operation	55°C for 16hrs, 501.5 Procedure II

SIAM INSPECTION SERVICE CO.,LTD.

EQUIPMENT DATA SHEET

Magnaflux, AC Electro magnetic Yoke

1.GENRAL INFORMATION	
Weight	4.6lb/2.1kg
Leg Span	0–11in/0–28cm
Cord Length	10ft/3m
Duty Cycle	50%,max on time is 90 seconds
Electrical Requirements	15V– 60 Hz:3.7AD230V– 50/60Hz: 2.6A

REFERENCE DOCUMENT

EXPERIENCES LIST

Item	ProjectName	Client	Year
1	Install Standby HPBlower For CFB1&2 Description :Carbon SteelPiping	Glow SPP3 Company Limited.	2017
2	Remove andInstall New Triple offsetButterfly Valves BD Plant 1100,1600 Description :Carbon SteelPiping	Bangkok Synthetics Company Limited. (BST)	2017
3	Replace PipeLine Underground FireWater PhaseII Description :Carbon SteelPiping	Bangkok Synthetics Company Limited. (BST)	2017
4	New FeedWaterSystemforHRSG Preheater at Glow Energy Description :Carbon SteelPiping	Glow EnergyPublic Company Limited.	2017
5	ASU MTP1Re-routing GOX Pipeline Description :Carbon SteelPiping	Linde (Thailand) Public Company Limited.	2017
6	New Stripper Project Description :StainlessSteel Piping	BSTSpecialty Company Limited.	2017
7	NEW HOMOPROJECT Description :StainlessSteel Piping	BSTSpecialty Company Limited.	2017
8	New StripedProject Description :StainlessSteel Piping	BSTSpecialty Company Limited.	2017
9	Steam andCondensate pipingforSteamMixer to MTTProject Description :Carbon SteelPiping	Bangkok Synthetics Company Limited. (BST)	2017
10	Relocate Chilled WaterMetering Station for META Description :Carbon SteelPiping	Glow SPP11 Company Limited.	2017
11	Revampdikewallof chemicalsat cooling water unit Description :Carbon SteelPiping	Bangkok Synthetics Company Limited. (BST)	2017
12	Coal Bunker B BoilerUnit 1BLCP Description :StainlessSteel Piping	BLCP Power Company Limited	2017
13	BY-PASSFT119 Description :Carbon SteelPiping	Bangkok Synthetics Company Limited.	2017
14	PAUT&PTforshaft X-6603 Description :Alloy2205	BSTElastomers Company Limited. (BSTE)	2017
15	TSB.Construction Eng Building War ehouse. Description :Carbon SteelPiping by PAUT EXAMINATION	Sinsamooth Service CO,.LTD.	2018
16	BST Emargeney Shutdown Description :Carbon SteelPiping by PAUT EXAMINATION	JPJ Industrial Service (Thailand) Co., Ltd.	2018
17	DEMOLISH EQUIPMENT AND FOUNDATION Description : PT Lifting lug of column Tower	BST Elastomers Company Limited.	2018
18	Phased Array Ultrasonic Testing Service – Examination PAUT Scan for pipce test.	Dana Spicer (Thailand) Ltd.	2018
19	Piping for Pilot Plant NBL Site#2 Description : PT Examination	Bangkok Synthtics Co.,Ltd	2018
20	Lift up HHP Steam & Condensate Pipelines Portion I6-CX-1 Description : PT Examination	Glow SPP3 Company Limited	2018

Item	ProjectName	Client	Year
21	TSB.Construction Eng Building War ehouse. Description :Carbon SteelPiping by PAUT EXAMINATION	Sinsamooth Service CO,.LTD.	2018
22	BST Emargeney Shutdown Description :Carbon SteelPiping by PAUT EXAMINATION	JPJ Industrial Service (Thailand) Co., Ltd.	2018
23	DEMOLISH EQUIPMENT AND FOUNDATION Description : PT Lifting lug of column Tower	BST Elastomers Company Limited.	2018
24	Phased Array Ultrasonic Testing Service – Examination PAUT Scan for pipe test.	Dana Spicer (Thailand) Ltd.	2018
25	Piping for Pilot Plant NBL Site#2 Description : PT Examination	Bangkok Synthtics Co.,Ltd	2018
26	Lift up HHP Steam & Condensate Pipelines Portion I6-CX-1 Description : PT Examination	Glow SPP3 Company Limited	2018
27	New Storage Tank of Recovered from T-6101 to T-5401	Bangkok Synthetics Co.,Ltd	2019
28	Lift up HHP Steam & Condensate Pipelines Portion I6-CX-1	Glow SPP3 Company Limited	2019
29	EA Bio Innovation @ GAH Pipeline Supply Project	Linde (Thailand) Public Co.,Ltd	2019
30	Connection Loop of Water Spools pipe	Global Power Synergy Public Co., Ltd	2019
31	SCG PB14 outage August 2019	SIAM KRAFT INDUSTRY CO., LTD.	2019
32	New Layer (3rd Level) of Glow's Pipe Rack Along L-5 Route Project.	Glow Energy Public Co .,Ltd.	2019
33	Ultrasonic Testing Service – Examination UT Scan for Arm test.	TECHNO FAB (THAILAND) CO.,LTD	2019
34	Corrosion mapping for E-1302C	TPT Petrochemicals PCL	2019
35	Installation common BFW Header CUP 3 Plant	Global Power Synergy Public Co .,Ltd.	2019
36	Decrease Sea Water Flow for Phase V's Circulating Water Pumps	Glow Energy Public Co.,Ltd.	2019
37	CUI Inspection Loop R-1021	SAK CHAISIDHI Co.,Ltd.	2019
38	10" Demineral Water Pipeline for GPSC CUP1 @WHA EIE (SS304)	GPSC CUP1 @WHA EIE (SS304)	2019
39	PAUT Shutdown SKIC Plant, Ratchaburi, Oct 2019	SIAM KRAFT INDUSTRY CO., LTD.	2019
40	PAUT 3PM-404 PTA Dryer	GC-M PTA Company Limited	2019
41	Transfer pipe 3PE-101A-F	GC-M PTA Company Limited	2019
42	Mock up block 3PM-404	GC-M PTA Company Limited	2019
43	P12-SHE-1809004	Thai Roong Ruang Industry Co., Ltd.	2019

Item	ProjectName	Client	Year
44	Replace P-Gate Valve HRH No.11	RATCH Group Public Company Limited	2019
45	Replacement Submerge tube	Elite Kraft Paper Co., Ltd.	2019
46	Fabricate and Installation Vessel V-6205 at SBR Plant Material DUPLEX 2205 Install During T/A	Bangkok Synthtics Co.,Ltd	2019
47	Service maintenance for replacement BV line and desup ball valve	Glow Energy Public Co.,Ltd.	2019
48	H2 tube test & inspection	AIR PRDUCT INDUSTRIAL LIMITED.	2020
49	Transfer pipe 2ASD_Jan-20	GC-M PTA Company Limited	2020
50	Modify line for redundant E-2501A BST Plant	Bangkok Synthtics Co.,Ltd	2020
51	Modify line bypass V-8301 to flare	Bangkok Synthtics Co.,Ltd	2020
52	PT and PAUT casting	DOW CHEMICAL THAILAND LTD.	2020
53	Replace suction valve of Ammonia Compressor B-1601 BST Plant	Bangkok Synthtics Co.,Ltd	2020
54	CUI-UNIT 4000 PIPING REPAIRING WORK PACKAGE	Bangkok Synthtics Co.,Ltd	2020
55	GPSC-GLOW STEAM QUICK WIN PROJECT	Global Power Synergy Public Co .,Ltd.	2020
56	REPLACE NEW STEAM HEADER IN V-1502	Bangkok Synthtics Co.,Ltd	2020
57	Replace suction valve of Ammonia Compressor B-1601 BST	Bangkok Synthtics Co.,Ltd	2020
58	Install WT Back Up HPDE Pipe, Cup 3 Plant	Global Power Synergy Public Co .,Ltd.	2020
59	NEW PIPE RACK (EIE-20)	Global Power Synergy Public Co .,Ltd.	2020
60	PIPE LIYC H2 FOR METERING (ALT)	Sak Chaisidhi Co. Ltd.(SAKC)	2020
61	Cut vent & drian 158 points	REPCO Industrial Solutions	2020
62	PEPLACE HEAT EXCHANGER E-17551	B. S. T. Elastomers Company Limited	2020
63	ติดตั้งท่อสเตนเลสสำหรับระบบ Demineralization water	WHA Corporation PCL	2020
64	MODIFY LINE DISCHARGE P-702	Sak Chaisidhi Co. Ltd.(SAKC)	2020
65	MAGNETIC FIOW 3" AND INSTALL SCBA	Global Power Synergy Public Co .,Ltd.	2020
66	Modify Fabrication and Install Pipe Line Reserve for Meeting with Glow for BST Plant	Bangkok Synthtics Co.,Ltd	2020
67	New BD Pipline from Site#1 to Site#2	BST & BSTE	2020

REFERENCE DOCUMENT

NDT PROCEDURE LIST

Item	Documentno.	DocumentTitle
1	SP-R37-PAUT-001	PhasedArrayUltrasonicTestingfor PowerPipingASMEB31.1CodeCase189
2	SP-R37-PAUT-002	PhasedArrayUltrasonicTestingfor ProcessPipingASMEB31.3CodeCase181
3	SP-R37-PAUT-003	PhasedArrayUltrasonicTestingforASMESectionIPowerBoiler
4	SP-R37-PAUT-004	PhasedArrayUltrasonicTestingforASMESectionVIIIPressureVessel
5	SP-R37-PAUT-005	PhasedArrayUltrasonicTestingforStainlessSteelProcessPipingASMEB31.3 CodeCase 181
6	SP-R37-UT-001	UltrasonicExaminationforAWSD1.1StructuralSteel
7	SP-R37-UT-002	UltrasonicExaminationforASMEB31.1PowerPiping
8	SP-R37-UT-003	UltrasonicExaminationforASMEB31.3ProcessPiping
9	SP-R37-UT-004	UltrasonicExaminationforASMESectionIPowerBoiler
10	SP-R37-UT-005	UltrasonicExaminationforASMESectionVIIIDiv.1PressureVessel
11	SP-R37-PT-001	LiquidPenetrantExaminationforAWSD1.1StructuralSteel
12	SP-R37-PT-002	LiquidPenetrantExaminationforASMEB31.1PowerPiping
13	SP-R37-PT-003	LiquidPenetrantExaminationforASMEB31.3ProcessPiping
14	SP-R37-PT-004	LiquidPenetrantExaminationforASMESectionIPowerBoiler
15	SP-R37-PT-005	LiquidPenetrantExaminationforASMESectionVIIIDiv.1PressureVessel
16	SP-R37-MT-001	MagneticParticleExaminationforAWSD1.1StructuralSteel
17	SP-R37-MT-002	MagneticParticleExaminationforASMEB31.1PowerPiping
18	SP-R37-MT-003	MagneticParticleExaminationforASMEB31.3ProcessPiping
19	SP-R37-MT-004	MagneticParticleExaminationforASMESectionIPowerBoiler
20	SP-R37-MT-005	MagneticParticleExaminationforASMESectionVIIIDiv.1PressureVessel
21	SP-R37-VT-001	VisualExaminationforAWSD1.1StructuralSteel
22	SP-R37-VT-002	VisualExaminationforASMEB31.1PowerPiping
23	SP-R37-VT-003	VisualExaminationforASMEB31.3ProcessPiping
24	SP-R37-VT-004	VisualExaminationforASMESectionIPowerBoiler
25	SP-R37-VT-005	VisualExaminationForASMESectionVIIIDiv.1PressureVessel
26	SP-R37-UTM-001	UltrasonicThicknessMeassurement(UTM)
27	SP-R37-NDT-001	WritenPracticeforPersonnelQualificationandCertificationinNodectructive Testing(NDT)

ATTACHMENTS

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THANK YOU