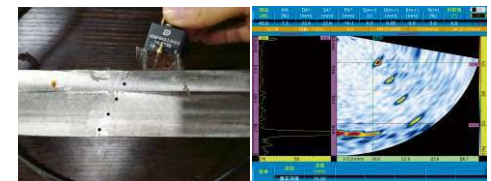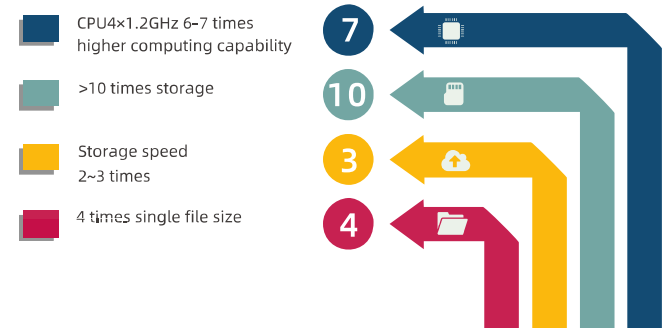## New Upgrades
Support AutoCAD Import Function!

- 16/64, 32/64, 32/128, 32/128PR receiver/pulser channels for phased array
- Dual independent channels for high-performance TOFD detection
- Embedded focal law calculator, which can perform:
  - Four kinds of scanning modes: linear, sectorial, depth and static
  - Four kinds of focal types: true depth, sound path, projection, and focal plane
  - Optional display mode of A / B / S / C / TOFD, etc.
- Calibration is more convenient to implement and can be calibrated for each beam
- Multiple groups for parallel scanning, comparable to many instruments working simultaneously
- Negative square wave pulse, with resolution up to 2.5ns, PRF up to 20khz
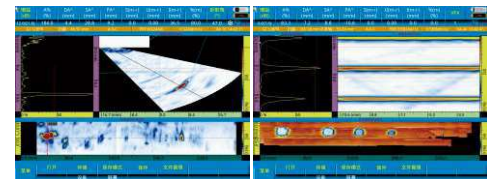- 10.4" TFT LCD color touch screen, resolution 800*600 pixel

PHASCAN II
Portable Phased Array

Phased Array Flaw Detector

PHASCAN II FEATURES

- 32/64PR, 32/128PR receiver/pulser channels for phased array
- 128GB SSD fast data storage
- Single data file up to 4GB
- 2D matrix array, 3D simulation
- CAD module import
- SDK
- Fast & Reliable
- Incredibly easy to use

PHASCAN II **VS** PHASCAN

- CPU4×1.2GHz 6-7 times higher computing capability — **7**
- >10 times storage — **10**
- Storage speed 2~3 times — **3**
- 4 times single file size — **4**

Weld Detection of Dissimilar Metals
in Austenitic Stainless Steel

Inspection of Pipe
Seat Intersection Line

XY-dual Axis Scanning

03 Instrument

Parameter		PhaScan		PhaScan II	
		PA Channel	Conventional Channel	PA Channel	Conventional Channel
Configuration	Receiver / Pulser	32/128	2 / 2	32/128	2 / 2
	Range	9900μs	9900μs	9900μs	9900μs
Data Collection	Sampling Rate	100MHz	100MHz	100MHz	100MHz
	Max Length of A scan	8192	8192	32768	32768
	No. of Focal Laws	1024	NA	1024	NA
	Focusing Type	True Depth/Sound Path/Projection/Focal Plane	NA	True Depth/Sound Path/Projection/Focal Plane	NA
Pulser	Test Mode	PE / PC	PE / PC / TT / TOFD	PE / PC	PE / PC / TT / TOFD
	Voltage	50V / 100V	100V / 200V / 400V	50V / 100V	100V / 200V / 400V
	Pulse Shape	Negative Square Wave	Negative Square Wave	Negative Square Wave	Negative Square Wave
	Pulse Width	30-500ns	30-500ns	30-500ns	30-500ns
	Rise Time	<8ns	<8ns	<8ns	<8ns
	PRF	20KHz	20KHz	20KHz	20KHz
	Delay	10μs / 2.5ns	10μs / 2.5ns	10μs / 2.5ns	10μs / 2.5ns
Receiver	Gain Range	0-80dB	0-110dB	0-80dB	0-110dB
	Bandwidth	0.5-20MHz	0.5-20MHz	0.5-20MHz	0.5-20MHz
	Receiver Delay	10μs / 2.5ns	10μs / 2.5ns	10μs / 2.5ns	10μs / 2.5ns
Scan/Display	Scanning Type	Linear/Sectorial	NA	Linear/Sectorial	NA
	Display Mode	A/B/C/S,PA-TOFD	A/B/C TOFD	A/B/C/S,PA-TOFD	A/B/C TOFD
	Measure Units	mm / inch	mm / inch	mm / inch	mm / inch
TCG	Points	16		16	
	Dynamic Range	40dB		40dB	
	Max Gain Slope	40dB/μs		40dB/μs	
Report		HTML		HTML	
Data Storage	Pluggable Storage	USB Disk / SD Card		USB Disk / SD Card/SSD(Build-in)	
Display Screen	Size	10.4 inch		10.4 inch	
	Resolution	800*600pixel		800*600pixel	
	Type	TFT LCD Resistive Touch Screen		TFT LCD Capacitive Touch Screen	
I/O Port	USB	3		3	
	Internet	10/100M		100/1000M	
	Video Output	DVI/VGA Compatible		DVI/HDMI	
	Encoder	Single Axis		Dual Axis	
Language		English / Chinese		English / Chinese	
Battery & Power Supply	DC Supply Voltage	15VDC 4A		15VDC 4A	
	Battery Type	Li-ion Battery		Li-ion Battery	
	Battery Life	6 Hours		6 Hours	
Case	Size	325mm×230mm×130mm		325mm×230mm×130mm	
	Weight	4.5Kg(Without Battery)		4.5Kg(Without Battery)	
Hardware	CPU	800MHz		4 × 1.2GHz	
	USB Disk	FAT32 / NTFS		FAT32 / NTFS	
	SD Card	8GB		128GB	
Software	2-axis C-Scan	N/A		YES	
	3D Beam Simulation	N/A		YES	
	Matrix Array	N/A		YES	
	Module Import	N/A		YES	
	Topview C-Scan	N/A		YES	
	TKY Geometry Import	N/A		YES	
	Real-time 3D imaging	N/A		YES	
	Multi-Touch Interface	N/A		YES	
	SDK	Half Support		Support	
	Online Monitoring	Half Support		Support	
	Sigle File Size	256M		1GB	

FLEXSCAN

Flexscan is the latest PAUT flaw detector developed by Doppler. It's a continuity of Phascan, with excellent performance. With 43% volume and 22% weight reduced, also hardware and software optimized, Flexscan is ideal for on-site inspection.

- 16/64PR, 32/64PR receiver/pulser channels for phased array
- 8.4″ TFT LCD color touch screen, easy to operate
- PA, TDFD and conventional UT can be performed simultaneously
- Multiple groups for parallel scanning, comparable to many instruments working simultaneously
- Fast calibration of velocity, wedge delay, sensitivity, TCG and so on
- Fast setting of many kinds of common weld graphs
- Support autocad import function
- Optional display mode of A / B / S / C / TOFD / Offline 3D
- New upgraded offline data analysis software, more powerful

Performance

Parameter		PA Module	Conventional UT
Configuration	Receiver / Pulser	32/64	1 / 2
	Range	9900μs	9900μs
	Velocity	635-15240m/s	635-15240m/s
	Focal Law	1024	NA
Pulser	Test Mode	PE / PC	PE / PC / TT / TOFD
	Voltage	50V / 100V/130V	100V / 200V / 400V
	Pulse Shape	Negative Square Wave	Negative Square Wave
	Pulse Width	30-500ns	30-500ns
	Rise Time	<8ns	<8ns
	PRF	20KHz	20KHz
	Delay	10μs / 2.5ns	10μs / 2.5ns
	Damping	N/A	50Ω/200Ω
Receiver	Gain	0-80dB	0-110dB
	Bandwidth	0.5-15MHz	0.5-20MHz
	Input Impendance	200Ω	133Ω
	Input Capacitance	60pF	60pF
	Delay	10μs / 2.5ns	10μs / 2.5ns
Scan/Display	Type	Linear/Sectorial	NA
	Display Mode	A/B/C/S	A/B TOFD
	Unit	mm / inch	mm / inch
TCG	Points	16	
	Dynamic Range	40dB	
	Max Gain Slope	40dB/μs	
DAC	Points	16	
Gate	Gates	A/B/I	
	Threshold	0-98%	
	Trig Mode	Peak / Edge	
Report		HTML	
Data Storage	Storage Devices	USB Devices / SD Card	
Display Screen	Size	8.4 inch	
	Resolution	800*600pixel	
	Type	TFT LCD Touch Screen	
I/O Port	USB	2	
	Internet	10/100M	
	Video Output	HDMI	
	Encoder	LEMO 16-Pin	
Language		English / Chinese	
Power Supply	DC Supply Voltage	15V DC 4A	
	Battery Type	Li-ion Battery	
	Battery Life	4 Hours	
Case	Size	296mm×209mm×89mm	
	Weight	3.5Kg(Without Battery)	

New Phased Array Flaw Detector with 3D TFM/FMC

Novascan is a full-featured phased array inspection tool. In addition to the phased array function and the independent two-channel TOFD inspection function, it is the first time at home and abroad to realize 3D TFM technology on a portable instrument, with clear and delicate imaging. At the same time, it supports 2D TFM with imaging points 1024 * 1024, which greatly improves imaging and shows small defects more clearly.

Dual Role

The Novascan has a FPGA connection interface, and can be used as a phased array board, which can transmit the underlying data to the user, making it easier for users such as research institutes and universities to conduct secondary development.

Powerful 3D View Function

Support 3D view, defects are visually displayed in 3D workpieces, defect position and size are intuitive and clear, and it is more convenient for defect judgement.

Powerful Scanning Simulation Function

Equipped with a new scan planning process, it can realize 3D focus law simulation, multiple groups of simultaneous simulation, etc., and greatly simplified the user setting interface. It can help to complete the necessary steps such as process simulation and calibration in the shortest time.

More Application Fields

The equipment is equipped with a two-dimensional coded interface, which can realize high-speed two-dimensional scanning; it supports DLA and DMA probes, which can be used for austenitic stainless steel workpiece. With 32 groups for simultaneous detection and 8 groups displayed on the same screen, it is more suitable for complex detection cases.
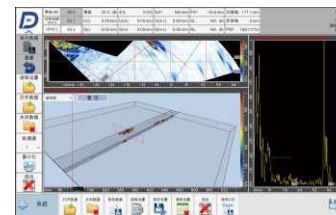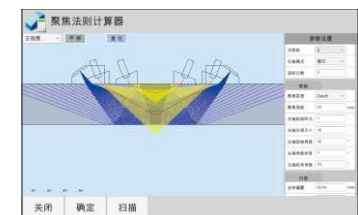
Real-time 3D Imaging   Multi-group Simulation

Performance

| Parameter		PA Module	Conventional UT
Configuration	Receiver / Pulser	32/128	2 / 2
	Range	9900μs	9900μs
	Velocity	340-15240m/s	340-15240m/s
Pulser	Test Mode	PE / PC	PE / PC / TT / TOFD
	Voltage	50V / 100V	100V / 200V / 400V
	Pulse Shape	Negative Square Wave	Negative Square Wave
	Pulse Width	30-1000ns/2.5ns	30-1000ns/2.5ns
	Rise Time	<8ns	<8ns
	PRF	20KHz	20KHz
	Delay	0-20μs/2.5ns	0-20μs/2.5ns
Receiver	Gain	0-120dB	0-120dB
	Bandwidth	0.5-20MHz	0.5-20MHz
	Delay	50μs/0.1μs	50μs/0.1μs
Data Collection	Sampling Rate	100MHz	100MHz
	No. of Focal Laws	512(Customizable 1024)	NA
	Focusing Type	True Depth/Sound Path/Projection/Focal Plane	NA
	Detection	FW/HW+/HW-/RF	FW/HW+/HW-/RF
Scan/Display	Type	Linear/Sectorial	NA
	Display Mode	A/B/C/S/3D/TopC	A/B(TOFD)
	Unit	mm	mm
TCG	Points	16	
	Dynamic Range	40dB	
	Max Gain Slope	40dB/μs	
Report		WORD	
Data Storage	Storage Devices	USB Devices / SSD (64G)	
	Single File Size	4G	
Display Screen	Size	10.4 inch	
	Resolution	1024*768pixel	
	Viewable Area	211mm*158mm	
	Type	IPS Capacitive Touch Screen	
I/O Port	USB	2	
	Internet	2（Top x86,1000Mb/s. Bottom FPGA,1000Mb/s)	
	WIFI	Support USB External WiFi Transmission Customization	
	Video Output	HDMI 1.4b	
	Encoder	LEMO 16-pin	
Language		English/Chinese	
Power Supply	DC Supply Voltage	15V DC 100W	
	Battery Type	Li-ion 11.25V/99.6Wh	
	Battery Life	4 Hours	
Case	Size	360mm×260mm×130mm	
	Weight	6Kg(Without Battery)	
IP Lever		IP65	

Robust - PAUT Board

- 32/64PR, 32/128PR
- Optional display mode: A /B /S /C /3D
- Extended hardware and software can be provided to redevelop
- Use for all kinds of automatic phased array ultrasonic testing system platform

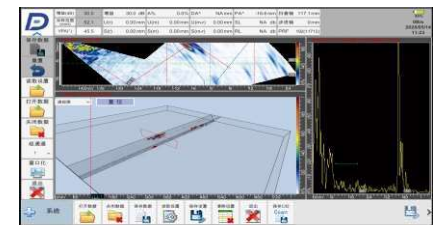## Powerful Simulation, Imaging, and Data Analysis Software

- Support 3D & 2D TFM，real-time TFM imaging above 1024*1024 points can be achieved
- 3D real-time process simulation
- Diversified gate types, easy to remove interference signals
- Equipped with intelligent corrosion detection and analysis module, which can automatically calculate the corrosion area
- Support fillet weld detection of pipe seat, real-time update of weld cross section
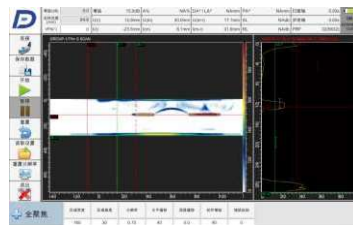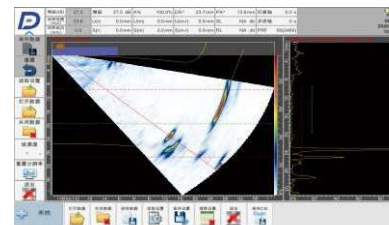
TFM (Spherical Hole)   Tube Seat Sectorial Scan   3D Display

Options		Parameter
Configuration	Receiver / Pulser	32/64;32/128
	Velocity	340-15240m/s
Pulser	Test Mode	PE / PC
	Voltage	50V / 100V（Customizable 200V）
	Pulse Shape	Negative Square Wave
	Pulse Width	30-1000ns/2. 5ns
	Rise Time	<8ns
	PRF	20KHz（Customizable 40KHz）
	Delay	0-20μs/2.5ns
	Damping	NA
Receiver	Gain	0-120dB
	Bandwidth	0.5-20MHz
	Delay	50μs/0.1μs
	Input Impendance	200Ω
Data Collection	Sampling Rate	100MHz
	Focal Law Number	512（Customizable 1024）
	Focus Type	True Depth/Half Sound Path/Projection/Any Surface
	Detection	FW/HW+/HW-/RF
	Synchronization	Initial Pulse/Gate
TFM	Max Point Number	Maximum 4 Million
	TFM Aperture	64/128 Transmit
	Focal Mode	TT,TTT,TTTT,LL,LLL,LLLL,TLT,TLL,LTT
Scan/Display	Type	Sectorial/Linear
	Display Mode	A/B/C/S/3D/Top-C
	Unit	mm
TCG	Points	16
	Dynamic Range	40dB
	Max Gain Slope	40dB/μs
Band Filter		Full Date Real Time Averaging
I/O Port	Internet	100/1000M
	Encoder	LEMO 16-pin
Gate	Gates No.	4
	Threshold	0-98%
	Trig Mode	Peak/Edge/ Rectangle
Power Supply	DC Supply Voltage	15V/4.2A
Case	Size	350mm×245mm×55mm
	Weight	3.4Kg

Multiscan - Multi-channel Ultrasonic Board

Multiscan independent multi-channel ultrasonic board adopts modular unit design, which can integrate multiple modules according to user needs to form a larger multi-channel system, such as 4 * n (n ≤ 8) channel ultrasonic testing system. The combination of boards is flexible and efficient, and various triggering modes and synchronization between devices are supported among various modules. With parallel sampling mode and PRF up to 10 kHz per channel, there is no pressure for high-speed automatic detection.

The multi-channel board provides a complete SDK development kit, which can carry out secondary development according to the application characteristics of different industries, and is suitable for automatic production lines in metallurgy, steel, railway, machinery and other industries.You can also create customized solutions according to user needs to realize the whole service from design to installation and commissioning. At the same time, Multiscan provides supporting general-purpose software, which is convenient for users to conduct basic research experiments. It is performance reliable and easy to maintain. All kinds of communication interfaces adopt universal design, which can better match automation production lines and provide guarantee for the quality control of industrial automation products.
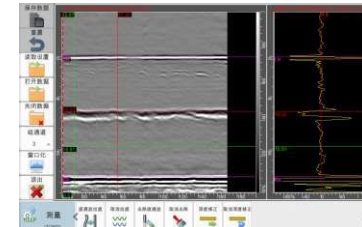
8-Channel Board

4-Channel Board

Software Features
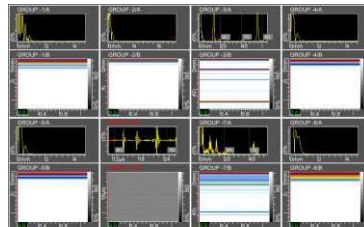
Multi-group Detection Process

TOFD Beam Coverage Simulation

TOFD Analysis Module

| Options	Parameter
No. of Channel	4*N (N≤8)
Detection Range	0.5~9999mm(Steel, Longitudinal)
Velocity	1000~15000m/s
Delay	0~50μs
Pulse Voltage	100V/200V/400V(Negative Square Wave)
Pulse Width	30-1000ns,Step of 2.5ns
Pulse Rise Time	≤8ns
Inspection Mode	PE/PC
Bandwidth	0.3-24MHz
PRF	10*N KHz(N= No. of Channels)
Gain Range	0-120dB
TCG Gain Range	40dB
Rectification Mode	FW/HW+/HW-/RF
Gate	A/B/C
Horizontal Linearity Error	≤0.1%
Vertical Linearity Error	≤2%
Surplus Sensitivity	≥60dB
Sampling Rate	100MHz
Data Transfer Bandwidth	1000Mbps
Communication Interface	Gigabit Ethernet
Operating Temperature	-10~+45℃
Power Supply	DC:15V/4.2A
Dimensions	360*200*65mm
Weight	2.2Kg

Straddle Type Turbine Root(AutoCAD Geometric)
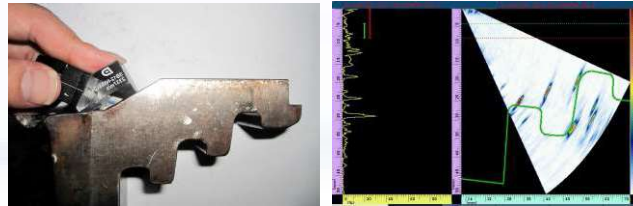
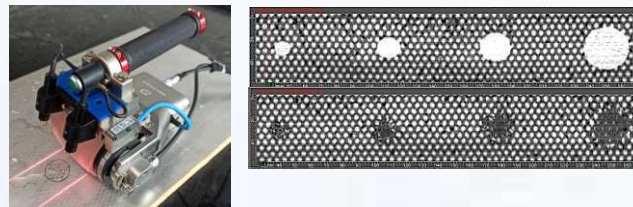Wind Turbine Bolt Inspection(Cylindrical Guided Wave)
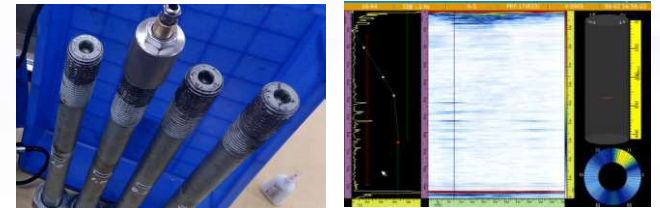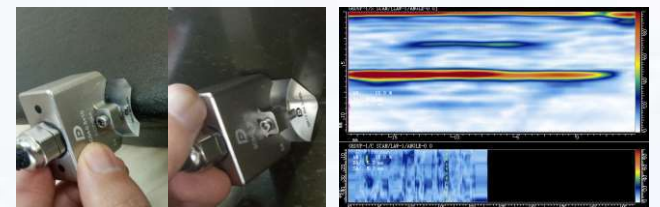

TFM Inspection of Groove
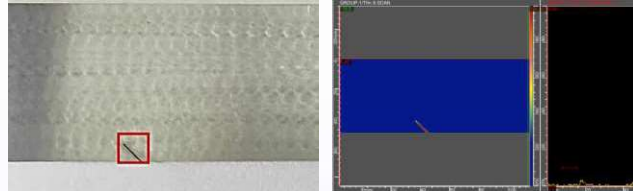
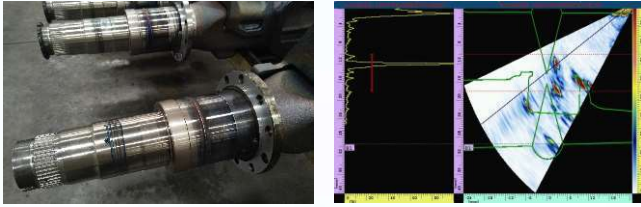FPR Composite Wind Turbine Inspection
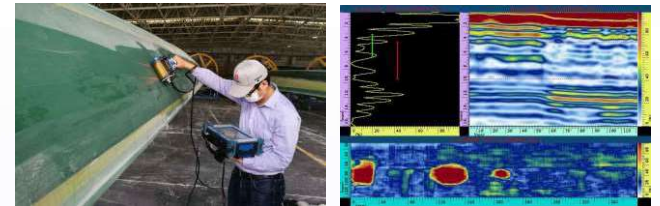
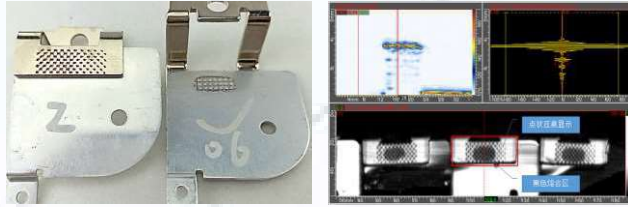Inspection of Aviation Aluminum Honeycomb Panel

Aircraft CFRP Composite R Conner Inspection
(Concave Probe)

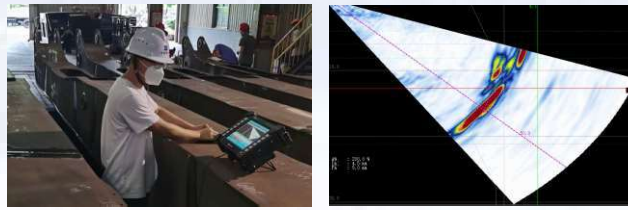Electron Beam Welding(AutoCAD Geometric)

Quality Inspection of Vehicle Parts

Circumferential Weld Inspection of Oil and Gas Pipelines

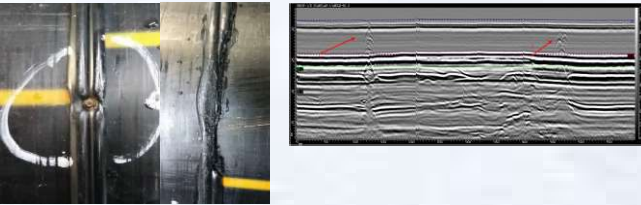

Fillet Weld Inspection of Concrete Pump Truck

Fillet Weld Inspection of Socket
(Real-time Update of Weld Cross Section)

PAUT Inspection for Butt Joint of PE Pipeline

TOFD Inspection for Butt Joint of PE Pipeline

TFM Inspection of
Small Screw

Corrosion Inspection of
Boiler Water Wall

Anyscan
20/30/31/36
Ultrasonic Flaw Detector

Anyscan – 20

Anyscan – 30

Anyscan – 31

Anyscan – 36

Performance

Instrument Model / Functions	A30	A31	A36	A20
Spike wave	√	√	√	√
Square wave			√	
Weld graph illustration	√	√	√	√
Series storage	√		√	√
RF	√		√	√
Chinese/English	√		√	√
Peak holding	√	√	√	√
Envelope	√	√	√	√
Surface amend	√	√	√	√
Auto gain	√	√	√	√
DAC	√	√	√	√
AVG	√		√	
AWS			√	√
Echo comparison			√	
Noise reduction			√	√
Shortcut menu / Shortcut key			√	√
Shuttle				√