

Specificații tehnice

Specificatii tehnice impuse prin caietul de sarcini (cerinte minime si obligatorii)	CONFORMITATE (pagina din fisele tehnice unde se regasesc specificatiile tehnice)
Echipamentul trebuie să îndeplinească toate condițiile legale pentru punerea pe piață și să prezinte următoarele documente (copie „conform cu originalul” și traducere autorizată): - Certificat de conformitate CE emis de un organism notificat; - Declarație de conformitate CE;	Certificat de conformitate CE și Declarație de conformitate CE
Certificat ISO 9001 sau ISO 13485 (copie „conform cu originalul” și traducere autorizată)	Cerificat ISO 9001
Perioada de garanție: minim 24 luni de la data recepției finale	Garantie: 24 luni
Termen de intervenție – maxim 72 de ore de la primirea notificării	Termen de intervenție: 72 ore
Transportul, montarea și punerea în funcțiune se realizează de către furnizor, costul acestor operații fiind incluse în preț	Transportul, montarea și punerea în funcțiune sunt operații incluse în preț
Personal calificat instruit la producător pentru instalare, punere în funcțiune și instruire personal medical	Certificat de traning de la producător
În vederea susținerii activității de service se va face dovada existenței personalului calificat. Documente solicitate: orice document emis de producător din care să rezulte că personalul ofertantului a fost instruit de producător, document nu mai vechi de 24 de luni.	Certificat de traning de la producător
Furnizorul să dețină autorizație de distribuție și service de la producător	Autorizație de distribuție și service de la producător
Aviz de funcționare emis de Ministerul Sănătății pentru import, distribuție dispozitive medicale, reparare, mentenanță și punere în funcțiune / instalare, unde să se regăsească producătorul echipamentului oferit.	Aviz de funcționare emis de Ministerul Sănătății
Perioada de service post-garanție minimă: 7 ani pe baza de contract și asigurare piese de schimb și consumabile	Perioada de service post-garanție: 7 ani
UNITATEA DE BAZA	Model: HS50 Producator: Samsung Medison, Coreea
Aplicatii disponibile pe echipament	Aplicatii
Cardiologie	Data Sheet pag.4, nota 1
Obstetrica	Data Sheet pag.4, nota 1
Ginecologie	Data Sheet pag.4, nota 1
Musculoscheletal	Data Sheet pag.4, nota 1
Abdomen	Data Sheet pag.4, nota 1
Vascular	Data Sheet pag.4, nota 1
Parti moi	Data Sheet pag.4, nota 1
Urologie	Data Sheet pag.4, nota 1



Pediatrie	Data Sheet pag.4, nota 1
Preseturi standard	Preseturi standard
Cord adult	Data Sheet pag.4, nota 2
Adnexa	Data Sheet pag.4, nota 2
Aorta	Data Sheet pag.4, nota 2
Arc aortic	Data Sheet pag.4, nota 2
Arterial	Data Sheet pag.4, nota 2
Abdomen	Data Sheet pag.4, nota 2
Vezica urinara	Data Sheet pag.4, nota 2
Intestine	Data Sheet pag.4, nota 2
San	Data Sheet pag.4, nota 2
Carotida	Data Sheet pag.4, nota 2
Penetrare	Data Sheet pag.4, nota 2
OB Trim 1	Data Sheet pag.4, nota 2
OB Trim 2	Data Sheet pag.4, nota 2
OB Trim 3	Data Sheet pag.4, nota 2
Coloana	Data Sheet pag.4, nota 2
Uter	Data Sheet pag.4, nota 2
Venos	Data Sheet pag.4, nota 2
Prostata	Data Sheet pag.4, nota 2
Renal	Data Sheet pag.4, nota 2
Tiroida	Data Sheet pag.4, nota 2
Testicul	Data Sheet pag.4, nota 2
Doppler transcranial	Data Sheet pag.4, nota 2
Cord fetal	Data Sheet pag.4, nota 2
Cap (neonatalogie)	Data Sheet pag.4, nota 2
Translucenta nucala	Data Sheet pag.4, nota 2
Abdomen pediatrie	Data Sheet pag.4, nota 2
Cord pediatrie	Data Sheet pag.4, nota 2
Sold pediatrie	Data Sheet pag.4, nota 2
Moduri de operare	Moduri de operare
2D	Data Sheet pag.4, nota 3
Doppler color	Data Sheet pag.4, nota 4
Doppler pulsat	Data Sheet pag.4, nota 5
Doppler continuu	Data Sheet pag.4, nota 6
Power Doppler	Data Sheet pag.4, nota 7
Power Doppler directional	Data Sheet pag.4, nota 8
Mod M	Data Sheet pag.4, nota 9
Mod M anatomic	Data Sheet pag.4, nota 10
Single/Dual/Quad	Data Sheet pag.4, nota 11
3D	Data Sheet pag.4, nota 12
4D	Data Sheet pag.4, nota 12
STIC (Spatio Temporal Image Correlation)	Data Sheet pag.4, nota 12
Doppler color tisular	TDI - Data Sheet pag.4, nota 14
Doppler pulsat tisular	TDW - Data Sheet pag.4, nota 14



Mod Elastografie	Data Sheet pag.4, nota 15
Moduri de vizualizare a imaginii	Moduri de vizualizare a imaginii
Imagine panoramica	Data Sheet pag.5, nota 16
Imagine trapezoidală	Data Sheet pag.5, nota 17
Mod de lucru ce usurează vizualizarea acului de biopsie și a traiectoriei acestuia	Needle Mate - Data Sheet pag.5, nota 18
Mod imagine duală	Data Sheet pag.1, nota 19
Mod triplex	Data Sheet pag.4, nota 20
Mod quad	Data Sheet pag.1, nota 21
Consola sistemului	Consola sistemului
Unitate de bază de înaltă performanță, staționar, carucior încorporat cu roți orientabile și spații de plasare a perifericelor	Manual pag.2-8, nota 22
Minim 3 porturi de sondă active	Data Sheet pag.3, nota 23
Posibilitatea montării unui al 4-lea port activ pentru sonde	Data Sheet pag.3, nota 23
Timpul de schimbare a transductorilor din softul sistemului să fie de maxim 3 secunde	Data Sheet pag.5, nota 24
Sistem de blocare a celor 4 roți	Manual pag.2-7, nota 25
Ecograful să dispună de spațiu pentru periferice	Manual pag.2-8, nota 22
Suport pentru tubul de gel	Data Sheet pag.3, nota 26
Maner pentru deplasarea cu ușurință a echipamentului montat în partea din față	Data Sheet pag.3, nota 27
Maner pentru deplasarea cu ușurință a echipamentului montat în partea din spate	Data Sheet pag.3, nota 27
Posibilitate de atașare a unui încălzitor de gel	Data Sheet pag.3, nota 28
Pentru o pornire cât mai rapidă și o stocare mai sigură sistemul să aibă SSD	Data Sheet pag.3, nota 29
SDD minim 512 GB	Data Sheet pag.3, nota 29
Memoria RAM a sistemului să fie de minim 8Gb	Data Sheet pag.3, nota 30
Sistemul de operare să fie Windows 7 sau superior	Data Sheet pag.3, nota 31
Zgomot generat maxim 35 dB	Data Sheet pag.3, nota 32
Putere consumată (cu tot cu periferice) max 830VA	Data Sheet pag.3, nota 33
Ieșire audio inclusă	Audio - Data Sheet pag.1, nota 34
Ieșire video tip S-Video	S-Video - Data Sheet pag.1, nota 34
Ieșire video tip VGA	VGA - Data Sheet pag.1, nota 34
Ieșire video tip HDMI	HDMI - Data Sheet pag.1, nota 34
Minim 6 porturi USB	USB (6 porturi) - Data Sheet pag.1 și 9, nota 34
Ieșire pentru rețea tip LAN	LAN - Data Sheet pag.1, nota 34
Port separat pentru microfon în cazul conectării sistemului într-un mediu virtual de telemedicină	MIC - Data Sheet pag.1, nota 34
Pentru confortul termic al examinatorului și pacientului căldura emanată de sistem să nu depășească 2730 BTU/h	Data Sheet pag.3, nota 35
Posibilitatea montării unei baterii reincarcabile încorporate pentru	Data Sheet pag.3, nota 36



functionarea sistemului fara energie electrica. Aceasta trebuie sa ofere aceeasi manevrabilitate sistemului fara limitarea transportului acestuia asa cum fac sursele suplimentare atasate langa sistem tip UPS	
Timpul minim de examinare/scanare prin intermediul acumulatorului sa fie de minim 25 minute	Data Sheet pag.3, nota 37
Sistemul trebuie sa dispuna de mod « sleep » cand ruleaza cu acumulatorul pentru o pornire cat mai rapida	Data Sheet pag.3, nota 38
Timpul maxim de pornire din modul sleep pe bateria reincarcabila sa nu depaseasca 35 secunde	Data Sheet pag.3, nota 38
Monitor	Monitor
Diagonala min 21 inch	Data Sheet pag.3, nota 39
Tehnologie LED sau superior	Data Sheet pag.3, nota 39
Rezolutie Full HD (1920 x 1080)	Data Sheet pag.3, nota 40
16.7 M culori	Data Sheet pag.3, nota 41
Posibilitate de reglare a luminozitatii	Data Sheet pag.3, nota 42
Monitorul trebuie sa fie fixat pe un brat articulata care sa permita :	Data Sheet pag.3, nota 43
- Rotire pe orizontala ± 155 grade	Data Sheet pag.3, nota 44
- Rotire pe verticala $+20/-70$ grade	Data Sheet pag.3, nota 45
- Reglarea inaltimii min 17 cm	Data Sheet pag.3, nota 46
Panou de control	Panou de control
Minim 6 taste configurabile de catre utilizator	Data Sheet pag.3, nota 47
Minim 6 suporturi pentru sonde	Data Sheet pag.3, nota 48
Inaltime reglabila de minim 17 cm	Data Sheet pag.3, nota 49
Posibilitatea rotirii panoului de control in jurul axei proprii pe un interval de minim $\pm 25^\circ$	Data Sheet pag.3, nota 50
Pentru simplificarea fluxului de lucru, ecograful trebuie sa dispuna de ecran tactil	Data Sheet pag.3, nota 51
Ecran tactil	Ecran tactil
Tehnologie LED	Data Sheet pag.3, nota 52
Diagonala minim 10 inch	Data Sheet pag.3, nota 52
Rezolutie minim 1280 x 800	Data Sheet pag.3, nota 53
Tastatura alfa-numeric disponibila pe ecranul tactil	Data Sheet pag.3, nota 54
Ecran tactil de tip capacitiv	Data Sheet pag.3, nota 55
Transductori	Transductori
Echipamentul sa fie compatibil cu :	
Sonde liniare in gama totala de frecventa minim 3-16 MHz	Data Sheet pag.5, nota 56
Sonde convexe in gama totala de frecventa minim 1-9 MHz	Data Sheet pag.5, nota 57
Sonde micro-convexe in gama totala de frecventa minim 4-9 MHz	Data Sheet pag.5, nota 58
Sonde endocavitare in gama totala de frecventa minim 4-9 MHz	Data Sheet pag.5, nota 59
Sonde phased array in gama totala de frecventa minim 2-12 MHz	Data Sheet pag.5, nota 60
Sonde abdominale volumetrice in gama totala de frecventa minim 1-8 MHz	Data Sheet pag.5, nota 61
Sonde endocavitare volumetrice in gama totala de frecventa	Data Sheet pag.5, nota 62



minim 5-9 MHz	
Sonda creion cu frecventa 2MHz +/-10%	Data Sheet pag.5, nota 63
Sonda creion cu frecventa 6MHz +/-10%	Data Sheet pag.5, nota 63
Sonda transesofagiana in gama totala de frecventa minim 3-7 MHz	Data Sheet pag.5, nota 64
Caracteristici standard ale echipamentului	Caracteristici standard ale echipamentului
Formator de unde digital	Data Sheet pag.5, nota 65
Gama totala de frecventa acoperita min 1-18 MHz	Data Sheet pag.5, nota 66
Minim 570000 canale de procesare	Data Sheet pag.7, nota 67
Adancime de scanare min 2-38 cm	Data Sheet pag.5, nota 68
Minim 4 zone de focalizare	Data Sheet pag.5, nota 69
Soft de imbunatatire a imaginii 2D prin intarirea contururilor si reducerea artefactelor	ClearVision - Data Sheet pag.5, nota 70
- Reglabil in 4 trepte minim	ClearVision - Data Sheet pag.10, nota 71
Soft de imbunatatire a imaginii 3D/4D prin intarirea contururilor si reducerea artefactelor	Manual pag.7-66, nota 72
- Reglabil in 4 trepte minim	Manual pag.7-66, nota 72
Minim 256 tonuri de gri	Data Sheet pag.5, nota 73
Gama dinamica minim 250 dB	Data Sheet pag.5, nota 74
Sistemul sa poata atinge un frame rate de minim 1980 fps in modul 2D	Data Sheet pag.5, nota 75
Sistemul sa poata atinge un frame rate de minim 390 fps in modul Doppler Color	Data Sheet pag.5, nota 76
Posibilitate de inversare a imaginii	Data Sheet pag.5, nota 77
- Sus/jos	Data Sheet pag.5, nota 77
- Stanga/dreapta	Data Sheet pag.5, nota 77
Rotire a imaginii cu 90/180/270 grade necesara in masuratori pediatrice tip HIP	Data Sheet pag.5, nota 78
Mod de compunere a frecventelor	Data Sheet pag.5, nota 79
Memorie CINE min 44500 frame-uri	Data Sheet pag.5, nota 80
CINE Loop minim 13700 linii	Data Sheet pag.5, nota 81
Dimensiunea memoriei CINE sa fie de minim 450 MB	Data Sheet pag.5, nota 82
Optimizare automata a imaginii in scala de gri prin apasarea unui singur buton	Data Sheet pag.5, nota 83
Timp de pornire a sistemului max 90 sec	Data Sheet pag.5, nota 84
Minim 30 preseturi personalizabile de catre utilizator	Data Sheet pag.5, nota 85
Baza de date pacienti	Data Sheet pag.5, nota 86
Posibilitatea salvarii bazei de date	Data Sheet pag.5, nota 87
Posibilitatea reincarcarii bazei de date de pe un dispozitiv extern	Data Sheet pag.5, nota 87
Posibilitate de editare a meniului de pe ecranul tactil	Data Sheet pag.5, nota 88
Minim 6 butoane configurabile de catre utilizator pe consola echipamentului	Data Sheet pag.5, nota 89
Softuri disponibile optional pe sistem	Softuri disponibile optional pe sistem



4D	Data Sheet pag.5 si 11, nota 90
3D	Data Sheet pag.11, nota 90
Softuri de prelucrare a volumului	Softuri de prelucrare a volumului
- Vizualizare a volumului in slice-uri 2D cu grosime reglabila	MSV - Data Sheet pag.11, nota 91
- Vizualizare a unei sectiuni in volum definita dupa orice plan trasat de catre utilizator	Oblique view - Data Sheet pag.11, nota 92
Prelucrare Volum in tehnica HD "High Definition" pentru vizualizarea cat mai realista a fetusului cu posibilitatea de a schimba sursa de lumina, din unghiuri gata presetate, sau ajustabile de catre utilizator	Realistic Vue - Data Sheet pag.12, nota 93
Masurare automata a intimei medii	Auto IMT - Data Sheet pag.5, nota 94
Soft de masuratori avansate dedicat aplicatiilor cardiologice	Cardiac Measurement - Data Sheet pag.5, nota 95
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Elastografie de tip calitativ	Elastoscan - Data Sheet pag.5, nota 97
Elastografie de tip cantitativ sau strain	E-Strain - Data Sheet pag.6, nota 98
Modul de exportare a imaginilor pe smartphone prin intermediul unei aplicatii disponibile pentru Android si IOS	Mobile export - Data Sheet pag.5, nota 99
Mod de lucru ce usureaza vizualizarea acului de biopsie si a traiectoriei acestuia	Needle Mate - Data Sheet pag.5, nota 100
Imagine panoramica	Panoramic - Data Sheet pag.6, nota 101
Masuratoare automata a translucentei nucleare dintr-un volum achizitionat	5D NT - Data Sheet pag.6, nota 102
Identificarea automata a planului sagital perfect pentru masuratoarea translucentei nucleare	Manual pag.7-114, nota 103
Masuratoare automata a foliculilor ovarieni dintr-o achizitie 3D a ovarului	5D Follicle - Data Sheet pag.6 si 12, nota 104
Masuratoarea translucentei nucleare automat in modul 2D	Data Sheet pag.6, nota 105
STIC (Spatio Temporal Image Correlation)	Data Sheet pag.6, nota 106
Modul de lucru in tehnica Compounding –Echipamentul trebuie sa poata obtine imaginea prin emisia semnalului ultrasonic in mai multe planuri de scanare urmata de combinarea ecourilor si obtinerea unei imagini fara artefacte.	MultiVision - Data Sheet pag.10, nota 107
Aceasta tehnica sa aiba cel putin 4 moduri diferite de operare reglabile de utilizator	MultiVision - Data Sheet pag.10, nota 107
Strain (cardiologie)	Data Sheet pag.6, nota 108
Soft de ecografie de stres	Data Sheet pag.6, nota 109
Modul EKG	Data Sheet pag.6, nota 110
Pedala pentru functii suplimentare	Data Sheet pag.6, nota 111
Incalzitor de gel	Data Sheet pag.6, nota 112
Modul 2D	Modul 2D



Steer 2D minim 3 unghiuri	Data Sheet pag.9, nota 113
Chroma minim 11 harti	Data Sheet pag.9, nota 114
Afisare in mod dual 2D si Doppler Color in timp real	Data Sheet pag.9, nota 115
Minim 5 frecvente selectabile	Data Sheet pag.9, nota 116
Minim 12 harti de gri	Data Sheet pag.9, nota 117
Mod de lucru cu armonice fundamentale	Data Sheet pag.9, nota 118
Mod de lucru cu armonice cu inversie de faza	Data Sheet pag.10, nota 119
Posibilitate de reglare a densitatii de linii minim 3 pasi	Data Sheet pag.9, nota 120
Soft de reducere a artefactelor si intarire a contururilor	ClearVision - Data Sheet pag.10, nota 71
- Reglabil in minim 5 pasi	ClearVision : off, 1-5 - Data Sheet pag.10, nota 71
Compunere spatiala	MultiVision - Data Sheet pag.10, nota 107
- Reglabila in minim 3 pasi	MultiVision: off, Low, Med, High - Data Sheet pag.10, nota 107
Imagine trapezoidala	Trapezoid - Data Sheet pag.10, nota 121
Reglare a unghiului de scanare minim 45-100%	Data Sheet pag.10, nota 122
Zoom	Data Sheet pag.10, nota 123
- Read zoom de minim 8 ori	Data Sheet pag.10, nota 123
- Write zoom	Data Sheet pag.10, nota 123
Posibilitatea maririi imaginii 2D intr-un interval de 75-100%	Data Sheet pag.9, nota 124
Posibilitatea modificarii unghiului de achizitie in sondele volumetrice din consola ecografului, fara a misca sonda	Data Sheet pag.10, nota 125
Minim 8 potentiometre TGC	Data Sheet pag.9, nota 126
Modul M	Modul M
Minim 11 harti de culoare	Data Sheet pag.10, nota 128
Chroma minim 11 harti	Data Sheet pag.10, nota 127
Posibilitate de reglare a vitezei de baleiere (sweep speed)	Data Sheet pag.10, nota 129
Mod M anatomic	Data Sheet pag.10, nota 130
Posibilitatea reglarii nivelului gain-ului	Data Sheet pag.10, nota 131
Posibilitatea reglarii nivelului gamei dinamice	Data Sheet pag.10, nota 132
Posibilitatea reglarii nivelului puterii	Data Sheet pag.10, nota 133
Reglarea modului M prin apasarea unui singur buton	Data Sheet pag.10, nota 134
Posibilitatea alegerii de catre utilizator a dimensiunii ferestrei si pozitiei modului M versus modul 2D	Data Sheet pag.10, nota 135
Modul Doppler Color	Modul Doppler Color
Minim 11 harti de culoare	Data Sheet pag.10, nota 136
Harta separata de culoare tip « variance »	Vel+Variance Map - Data Sheet pag.10, nota 137
Posibilitate de reglare a sensibilitatii in minim 5 trepte	Data Sheet pag.10, nota 138
Gama PRF minim 0.2 KHz – 19 KHz	Data Sheet pag.10, nota 139
Inclinarea ferestrei doppler cu minim $\pm 30^\circ$	Data Sheet pag.10, nota 140



Filtru de perete reglabil in minim 4 pasi	Data Sheet pag.10, nota 141
Posibilitatea reglarii nivelului gain-ului	Data Sheet pag.10, nota 142
Posibilitatea reglarii nivelului sensitivitatii	Data Sheet pag.10, nota 138
Posibilitatea reglarii nivelului puterii	Data Sheet pag.10, nota 143
Modul Doppler pulsat	Modul Doppler pulsat
Harti de culoare minim 11	Data Sheet pag.10, nota 144
Gama PRF minim 1.5-22 kHz	Data Sheet pag.10, nota 145
Optimizare automata a spectrului prin ajustarea baseline-ului si reglarea PRF-ului prin apasarea unui singur buton	Data Sheet pag.10, nota 146
Reglare a dimensiunii portii minim 0.5 – 25 mm	Data Sheet pag.10, nota 147
Corectie automata a unghiului de insonatie la 60 grade	Data Sheet pag.10, nota 148
Posibilitatea reglarii volumului	Data Sheet pag.10, nota 149
Posibilitatea reglarii filtrului in mai multi pasi	Data Sheet pag.11, nota 150
Modul Doppler Continuu	Modul Doppler Continuu
Gama PRF minim 2-56.5 kHz	Data Sheet pag.11, nota 151
Harti de culoare minim 11	Data Sheet pag.11, nota 152
Reglarea filtrului in cel putin 4 trepte	Data Sheet pag.11, nota 153
Posibilitatea reglarii nivelului gain-ului	Data Sheet pag.11, nota 154
Posibilitatea reglarii nivelului gamei dinamice	Data Sheet pag.11, nota 155
Posibilitatea reglarii volumului	Data Sheet pag.11, nota 156
Posibilitatea corectiei de unghi pe interval +/-60°	Data Sheet pag.11, nota 157
Posibilitatea reglarii vitezei anvelopei Doppler	Data Sheet pag.11, nota 158
Modul Power Doppler	Modul Power Doppler
Minim 11 harti de culoare	Data Sheet pag.11, nota 159
Posibilitatea reglarii nivelului gain-ului	Data Sheet pag.11, nota 160
Inversare a hartii de culoare (Power Doppler Directional)	Data Sheet pag.11, nota 161
Filtru de perete reglabil in minim 4 pasi	Data Sheet pag.11, nota 162
Posibilitatea reglarii sensitivitatii in mai multi pasi	Data Sheet pag.11, nota 163
Gama PRF minim 0.2 KHz – 19 KHz	Data Sheet pag.11, nota 164
Inclinarea ferestrei doppler cu minim ±30 grade	Data Sheet pag.11, nota 165
Minim 2 frecvente selectabile	Data Sheet pag.11, nota 166
Modul 3D/4D	Modul 3D/4D
Vizualizare tomografica a volumului in slice-uri 2D de grosime reglabila	Data Sheet pag.11, nota 91
Calcul automat al dimensiunilor foliculilor pornind de la o achizitie 3D a ovarului	Data Sheet pag.12, nota 104
Soft de reconstructie realista a tesuturilor	Realistic Vue - Data Sheet pag.12, nota 93
- Posibilitate de reglare a unghiului de iluminare	Data Sheet pag.12, nota 167
- Posibilitate de reglare a culorii tesutului	Data Sheet pag.12, nota 168
Unelte de prelucrare a volumului (stergere, decupare pentru inlaturarea artefactelor sau a structurilor inutile)	MagiCut - Data Sheet pag.11, nota 169
ROI Curve – posibilitate de curbare a boxului pentru reconstructia 3D/4D in zone cu putin lichid amniotic)	Data Sheet pag.11, nota 170



Posibilitate de reglare a unghiului de reconstructie pentru scurtarea timpului de achizitie	Volume angle - Data Sheet pag.12, nota 171
Elastografie	Elastografie
Echipamentul trebuie sa dispuna de software de elastografie de tip strain pe sonda liniara si endocavitara	Elastoscan – Manual pag.7-42, nota 172
Softul de elastografie sa dispuna de un indicator de calitate a achizitiei in timp real	Compression Bar – Manual pag.7-47, nota 173
Minim 5 harti de culoare selectabile	Data Sheet pag.13, nota 174
Afisare in mod dual	Data Sheet pag.13, nota 175
Reglare a transparentei hartii de culoare	Blending level - Data Sheet pag.13, nota 176
Inversare a hartii de culoare	Data Sheet pag.13, nota 177
Reglarea densitatii liniilor	Data Sheet pag.13, nota 178
Posibilitatea reglarii frecventei de lucru	Data Sheet pag.13, nota 179
A. CONFIGURATIE DE LIVRARE	CONFIGURATIE DE LIVRARE
1.Unitatea de baza incluzand minim cerintele tehnice de la punctul A.	HS50
2. Transductor Convex multifrecventa	CA2-9
- gama de frecventa in intervalul minim 2-9 MHz	Data Sheet pag.13, nota 180
- minum 190 elemente	Data Sheet pag.13, nota 181
- unghi de scanare minim: 55°	Data Sheet pag.13, nota 182
- aplicatii: abdomen, obstetrica, ginecologie, musculoscheletal, pediatric, urologie, vascular	Data Sheet pag.13, nota 183
3. Transductor Liniar multifrecventa	LA3-16A
- gama de frecventa in intervalul minim 4-16 MHz	Data Sheet pag.13, nota 184
- minim 190 elemente	Data Sheet pag.13, nota 185
- camp de scanare minim: 35 mm	Data Sheet pag.13, nota 186
- aplicatii: abdomen, obstetrica, ginecologie, musculoscheletal, parti moi, pediatric, vascular	Data Sheet pag.13, nota 187
- Posibilitate de atasare a unui ghid de biopsie	Data Sheet pag.13, nota 188
4. Sonda arie fazata multifrecventa	PA3-8B
Banda de frecventa minim 3-8 MHz	Data Sheet pag.14, nota 189
Camp de vizualizare minim 90°	Data Sheet pag.14, nota 192
Minim 80 cristale	Data Sheet pag.14, nota 191
Aplicatii: abdomen, cardiac, vascular, pediatric	Data Sheet pag.15, nota 193
5. Pachet masuratori cardiace compus din : doppler continuu si soft de masuratori cardiace	Cardiac Measurement - Data Sheet pag.3, nota 95
6. Elastografie calitativa pentru parti moi	Elastoscan - Data Sheet pag.3, nota 97
7. Soft de reducere a artefactelor si intarire a contururilor pentru imbunatatirea imaginii 2D	ClearVision - Data Sheet pag.5, nota 70
8. Soft de compunere spatiala pentru rezolutie superioara in modul 2D	MultiVision - Data Sheet pag.10, nota 107
9. Incalzitor gel	Data Sheet pag.3, nota 28
10. Imprimanta termica	Data Sheet pag.9, nota 190



SPECIFICATION SUMMARY

PHYSICAL SPECIFICATION

- Height: 1,335 ~ 1,710mm (with monitor)
- Width: 530 mm
- Depth: 750 mm
- Weight: 79.8 Kg (without accessories)
- Weight: Approx. 100 Kg (with Safe Working Load)

IMAGING MODES

- 2D-Mode
- M-Mode
- Color M-Mode
- Anatomical Mode
- Color Doppler Mode
- Pulsed Wave (PW) Spectral Doppler Mode
- Continuous Wave (CW) Doppler Mode
- Tissue Doppler Imaging (TDI) Mode
- Tissue Doppler Wave (TDW) Mode
- Power Doppler (PD) Mode
- ElastoScan Mode
- 3D/4D/XI STIC imaging Mode
- 19 → ▪ Dual Mode
- Quad Mode → 21
- Combined Mode
- Simultaneous Mode
- Zoom Mode
- S-Flow Mode

FOCUSING

- Transmit focusing, maximum of eight points (four points simultaneously selectable)
- Digital dynamic receive focusing (continuous)

PROBE CONNECTIONS

- 3 or 4 Probe Connectors (Selectable)
- CW Probe Connector (Optional)

MONITOR

- Main Monitor
 - Resolution: 1,920 x 1,080
 - 21.5 Inch LED Monitor
- Touch Screen Monitor
 - Resolution: 1,280 x 800
 - 10.1 Inch LED Monitor

ECG

- USB Type (Type CF)

IMAGE STORAGE

- Maximum 45,000 Frames for Cine memory
- Maximum 14,000 Lines for Loop memory
- Image filing system

REAR PANEL INPUT/OUTPUT CONNECTIONS

- 34 →
- Audio Output Port (Right/Left)
 - VGA monitor
 - S-Video Output
 - LAN
 - USB Port
 - HDMI Output
 - MIC

AUXILIARY

- DVD Multi-Drive
- Digital B/W Video Printer
- Digital Color Video Printer
- USB Printer
- DVD Recorder
- Foot switch (IPX8)
- USB Flash Memory Media
- USB HDD
- USB ECG
- Monitor



GENERAL SPECIFICATION

- Tilt: + 25 ° / - 70 ° (45)

(46) - Lift: 180 mm

PHYSICAL SPECIFICATION

- Height: 1,335 ~ 1,710mm (with monitor)
- Width: 530 mm
- Depth: 750 mm
- Weight:
 - 79.8Kg (without accessories)
 - Approx. 100 Kg (with safe working load)

CONTROL PANEL

(51) Touch Screen

- 10.1 Inches High Resolution LED Monitor (52)

(53) - Resolution: 1,280 X 800

- Capacitive Touch Type (55)

- Virtual Alpha Numeric KBD

▪ Alpha-Numeric KBD (54)

(47) 6 User Keys

▪ Tri-Status backlit

(48) 6 Probe Holders

▪ Height Adjustment: 180 mm (49)

(50) Swivel : +/-30°

CONSOLE DESIGN

(23) 3 or 4 Active Probe Ports (Optional)

- 4 Swivel Wheel Cart Based Type
- Articulated Monitor Arm
- Built-in Printer Storages
- Ergonomic Operation Panel
- Touch Screen
- Alpha-Numeric Keyboard
- Trackball
- Probe Holder / Gel Holder (26)

(27) Front and Rear Handles

- Integrated PC Module
- Integrated SSD

(31) Windows Embedded Standard 7

▪ ODD (Optional)

(28) Gel Warmer (Optional)

▪ ECG (Optional)

PC

▪ Main Processor: Intel i3-4100E 2.4GHz

▪ Main Memory: 8 GB (30)

(29) Built-in SSD: 512GB

ELECTRICAL SPECIFICATIONS

▪ Frequency: 50/60 Hz

▪ Voltage: 100 ~ 240 VAC

▪ Power Consumption: Max. 800 VA with Peripherals (33)

▪ Heat Dissipation: 2,729.7 [BTU/h] (35)

(32) System Noise: under 34.8 dB

▪ Built-in Equipotential Circuit

(36) Battery(Optional)

- Scan time: 25 min(Basic mode Live scan) (37)

(38) - Sleep mode: About 30 sec.(Wake up time)

- 14.4VDC, 6900mAh, 99.36Watt Lithium-ion Battery

- Charging time: About 5 Hours

MAIN MONITOR

(39) 21.5 Inches High Resolution LED Monitor

▪ Resolution: 1,920 x 1,080 (16:9) (40)

(41) Number of Color: 16.7 M

▪ Brightness Adjustment (42)

▪ Interactive Dynamic Software Menu

(43) Articulated Monitor Arm

- Swivel: +/- 160 ° (44)

SYSTEM SPECIFICATION



APPLICATIONS

- 1
- Abdomen
 - Cardiac
 - Gynecology
 - MSK
 - Obstetrics
 - Pediatric
 - Small Parts
 - Urology
 - Vascular

- 2
- TCD
 - Uterus
 - Venous
 - 1st Trimester
 - 2nd Trimester
 - 3rd Trimester

OPERATION MODE

- 3
- B-Mode (2D)
 - Color Doppler Mode (C) 4
 - Pulse Wave Doppler (PWD) 5
 - Continuous Wave Doppler (CWD): Steered / Static 6
 - Power Doppler Mode (PD) 7
 - S-Flow™ Mode 8
 - M-Mode (M) 9
 - Anatomical M Mode 10
 - Single/Dual/Quad Mode 11
 - Volume Mode
 - 12 - 3D / 4D / 3D XI / XI STIC™
 - TDI/TDW 14
 - 15 - ElastoScan Mode

PRESETS

- 2
- Abdomen
 - Adult Echo
 - Adnexa
 - Aorta
 - Aortic Arch
 - Arterial
 - Bladder
 - Bowel
 - Breast
 - Carotid
 - Deep
 - Fetal Heart
 - General
 - Neo Head
 - NT
 - Ped Abd
 - Ped Echo
 - Ped Hip
 - Prostate
 - Renal
 - Spine
 - Superficial
 - Thyroid
 - Testicle

DISPLAY MODE

- Dual Mode
 - B+B, B+B/C, B+B/PD, B+B/S-Flow
 - ElastoScan + ElastoScan
- Dual Live Mode
 - B+B, B+B/C, B+B/PD, B+B/S-Flow
 - B+ElastoScan
- Real-Time Triplex Mode (Simultaneous Mode)
 - B+C+PW, B+PD+PW, B+S-Flow+PW, B+TDI+TDW
- 20 Duplex, Triplex Mode
 - B+C, B+M, B+3D, B+4D, B+PW, B+PD, B+S-Flow, B+CW, B+C+PW, B+C+CW, B+C+M, B+ElastoScan, B+TDI, B+TDW
- Quad Mode



- Combinations of B/B, B/C, B/PD and B/S-Flow, ElastoScan
- Zoom Mode
- Write Zoom / Read Zoom / Pen zoom/ Panning
- Needle Mate+ (18)
- (16) Panoramic
- Trapezoid (17)

TRANSDUCER TYPES

- (58) Linear Array: LA3-14AD, LA3-16A
- Curved Array: CA1-7AD, CA2-9AD (57)
- (59) Endo-Cavity: ER4-9, EVN4-9
- Micro-Convex Array: CF4-9, CA2-6BM (58)
- (60) Phased Array: PE2-4, PA3-8B, PA4-12B
- Pencil: DP2B, CW6.0 (63)
- (64) TEE: MMPT3-7
- Volume Probe (3D mechanical probe)
- (61) - Curved Volume: CV1-8AD
- Endo-Cavity Volume: V5-9 (62)

SYSTEM STANDARD FEATURES

- (65) Hybrid Full Digital Beam-forming
- Frequency Range: 1 ~ 18MHz (66)
- (68) Displayed Imaging Depth (Probe dependent)
 - Minimum Depth of Field: 2cm
 - Maximum Depth of Field: 38cm
- (69) Number of Focal Points: 1 ~ 4
- Transmission Focal Zone Position selection
- 1 ~ 8 Focal Points Selectable (Probe and Application dependent)
- Continuous Dynamic Receive Focus / Aperture
- Multi-frequency / Wideband Technology
- S-Vue Technology
- Frequency Compounding (FSI) (79)
- (70) ClearVision
- 256 Shades of Gray (73)
- (74) System Internal Dynamic Range: 256
- Maximum Frame Rate

- 2,000 fps (Hz) (75)
- Maximum Color Frame Rate
- 400 fps (Hz) (76)
- (77) Image Reverse: Right/Left, Up/Down
- Image Rotation: 90°, 180°, 270° (78)
- Pre Processing
- Post Processing
- Digital Calipers / Measurement
- Cine Memory
- (82) Capacity: 500 MB
- Cine loop: Max. 14,000 Lines (81)
- Image storage: Max. 45,000 Frames / 60 Sec (80)
- QuickScan™ (83)
- Report Package
- Body Marker
- System Boot up: Max. 90 Sec (84)
- (24) Probe Change: 2-3 Sec
- User Programmable Preset : Over 30 Presets (85)
- (89) User Programmable Key: 6 Keys
- Touch Screen Menu Editable Function
- SonoView™ (86)
- (87) Data Backup / Restore
- Image Exporting and Importing (88)
- PW Velocity Range: 0.1cm/s ~ 8.8m/s
- CW Velocity Range: 1cm/s ~ 19.3m/s

SYSTEM OPTIONS

- (90) 4D
- 3D XI™
- Auto IMT+ (94)
- (95) Cardiac Measurement
- CW Function
- DICOM 3.0 (96)
- (97) ElastoScan
- EZ Exam+
- (99) Mobile export
- Needle Mate+ (100)



- | | |
|---|--|
| <p>101 → Panoramic</p> <p>▪ 5D NT → 102</p> <p>104 → 5D Follicle</p> <p>▪ RealisticVue</p> <p>▪ XI STIC → 106</p> <p>▪ DVD-RW</p> <p>110 → ECG (AHA / IEC)</p> <p>▪ Foot Switch → 111</p> <p>112 → Gel Warmer</p> <p>▪ Printer Tray (Large / Small)</p> <p>▪ 3P connector PSA</p> <p>▪ 3P Connector PSA (with Pencil Probe Port)</p> <p>▪ 4P Connector PSA</p> <p>▪ 4P Connector PSA (with Pencil Probe Port)</p> <p>▪ SEE Stream (Russia only)</p> <p>▪ 2D NT → 105</p> <p>98 → E-Strain</p> <p>▪ Strain+ → 108</p> <p>109 → Stress Echo</p> <p>▪ BatteryAssist</p> | <p>- Birth / Age</p> <p>- Accession Number</p> <p>- Diag. Physician</p> <p>- Ref. Physician</p> <p>- Operator</p> <p>- Indication</p> <p>- Study Information</p> <p>- E-mail</p> <p>▪ Gestational Age: LMP/EDD/GA</p> <p>▪ Institute</p> <p>▪ Operator</p> <p>▪ Probe Name</p> <p>▪ Probe Orientation</p> <p>▪ Depth / Width</p> <p>▪ Focal Zone</p> <p>▪ Focal Number</p> <p>▪ TGC Line</p> <p>▪ FPS (Hz)</p> <p>▪ Frequency</p> <p>▪ Gain</p> <p>▪ Dynamic Range</p> <p>▪ Map</p> <p>▪ Frame Average</p> <p>▪ Power</p> <p>▪ ClearVision Index</p> <p>▪ MultiVision Index</p> <p>▪ Gray Bar</p> <p>▪ Acoustic Index: TIs, Tlb, Tic</p> <p>▪ Mechanical Index: MI</p> <p>▪ Caliper & Measurement Result</p> <p>▪ Indicator</p> <p>▪ Pointer</p> <p>▪ Body Marker</p> <p>▪ ROI Position / ROI Size</p> <p>▪ Wall filter</p> <p>▪ Zoom / Panning</p> <p>▪ Biopsy Guide Line (Probe dependent)</p> |
|---|--|

DISPLAY

- | | |
|---|--|
| <p>▪ Application</p> <p>▪ Preset</p> <p>Mode</p> <p>▪ Date: 3 types (Selectable)</p> <p>- YYYY-MM-DD</p> <p>- MM-DD-YYYY</p> <p>- DD-MM-YYYY</p> <p>▪ Time: 2 types (Selectable)</p> <p>- 24 hours</p> <p>- 12 hours</p> <p>▪ Patient (General Information)</p> <p>- Patient ID</p> <p>- Patient Name (First, Middle & Last)</p> <p>- Gender: Female, Male, Other</p> | <p>▪ Frame Average</p> <p>▪ Power</p> <p>▪ ClearVision Index</p> <p>▪ MultiVision Index</p> <p>▪ Gray Bar</p> <p>▪ Acoustic Index: TIs, Tlb, Tic</p> <p>▪ Mechanical Index: MI</p> <p>▪ Caliper & Measurement Result</p> <p>▪ Indicator</p> <p>▪ Pointer</p> <p>▪ Body Marker</p> <p>▪ ROI Position / ROI Size</p> <p>▪ Wall filter</p> <p>▪ Zoom / Panning</p> <p>▪ Biopsy Guide Line (Probe dependent)</p> |
|---|--|



LANGUAGE

- Display Language
 - English, French, German, Italian, Spanish, Portuguese, chinese
- Input Language
 - English, French, Italian, German, Spanish, Russian, chinese, Nordic (Norwegian, Finnish, Swedish, Danish)

OPERATING ENVIRONMENT

- Temperature: 10°C ~ 35°C
- Humidity: Up to 90%
- Pressure: 700 ~ 1060 hPa

PROCESSING

DATA PROCESSING

- 67
- System Processing Channel: 573,440
 - Raw Data Image Analysis
 - Cine
 - Function: save / review / play / stop / pause / export / Trim Start / Trim End
 - Clipboard: displays thumbnail images of the acquired data for the current exam
 - Enlarged Preview of the image
 - Image Archive / Connectivity
 - Image format: AVI, MPEG, JPEG, BMP, TIFF, DICOM
 - Image Viewer (Sonoview™)
 - Measurements, Calculations and Annotations on CINE Playback
 - Number of Image Storage (built-in SSD): max. 350,000 images (RAW format)
 - Image Preview
 - Cine Image Preview
 - Recalling Image from the Clipboard
 - Scrolling Timeline Memory

- Start and End Frame Selections for Loop Playback

PRE-PROCESSING

- B/M-Mode
 - Dynamic Range
 - Frame Average
 - Frequency
 - Gain
 - Harmonic
 - Pulse Inversion Harmonic (Probe dependent)
 - Line Density
 - Power
 - Reject
 - Scan Area
 - TGC
 - Write Zoom
 - MultiVision (Probe Dependent)
 - Beam Steering (Probe Dependent)
 - Trapezoid (Probe Dependent)
 - Free Angle Plane
- PW Mode
 - Filter
 - Frequency
 - Gain
 - Power
 - PRF (Scale)
 - Sample Volume Angle
 - Sample Volume Position
- CW Mode
 - Sample Rate
 - Filter
 - Gain
 - Power
 - Sample Volume Angle
 - Sample Volume Position
- Color Doppler / Power Doppler mode



- DICOM Print
- DICOM Storage
- DICOM Storage Commitment (SC)
- DICOM Structured Reporting (SR)
- DICOM Verification
- DICOM Worklist
- Gray Scale Converting
- Multi Frame
- Single Frame
- 3D Volume Frame
- Transfer Mode
 - Send after acquisition
 - Send on end exam
 - Send manually
- VOI LUT Setup

Sony UP-D898MD, Sony UP-X898MD, Mitsubishi P95DE,
Mitsubishi P95DW

- Digital Color Video Printer: Sony UP-D25MD,
Mitsubishi CP30DW

- USB Line Printer: Samsung CLP-620NDK, ML-2950

SCANNING PARAMETERS

IHE

- Scheduled Workflow (SWF)
- Patient Information Reconciliation (PIR)
- Portable Data for Imaging (PDI)
- Evidence Documents (ED)

2D MODE

PERIPHERAL INTERFACE

- Audio out L/R
- D-SUB output
- S-Video output
- HDMI output
- USB 2.0 (6 ports)
- Ethernet 10/100/1000BASE-T
- Foot Switch: USB 2.0 (IPX 8)
- DVD Recorder: Sony DVO-1000MD
 - S-video, NTSC/PAL
 - Recording only
- Printers

- 113 Angle Steering: 0°, +/-7°, +/- 12°
- 114 Chroma Map: off, 1 ~ 11
- Cine Play: On, Off
- Cine Speed: 6, 12, 25, 50, 100, 150, 200, 300
- Depth: 2cm ~ 38cm (Probe dependent)
- 115 Dual Live
- Dynamic Range: 30 ~ 256
- Flip: L/R, U/D
- Focus Number: 1 ~ 4
- Frequency Compounding
- 116 Frequency: 3 ~ 5 steps (Probe Dependent)
 - Pen, Gen1, Gen2, Res1, Res2
- Gain: 0 ~ 100
- 117 Gray Map: 1 ~ 12
- Harmonic: On, Off
- Image Size: 70 ~ 100%
- 120 Line Density: Low, Med, High
- Number of TGC Level: 8



- Frame Average: 0 ~ 9
- Power: 2 ~ 100
- (119) ▪ Pulse Inversion Harmonic: On, Off (Probe dependent)
- QuickScan™
- Reject Level: 0 ~ 30
- MultiVision Index: Off, Low, Med, High (104)
- (71) ▪ ClearVision Index: Off, 1 ~ 5
- Trapezoid: On, Off (Linear Probes only) (121)
- (122) ▪ Scan Area: 40 ~ 100%
- (123) {
 - Zoom
 - Read Zoom: 100 ~ 800 %
 - Write Zoom
- Panning
- Free Angle Plane (125)

- Sensitivity: 0 ~ 5
- Frame Average: 0 ~ 5
- Frequency: 2 steps
- Gain: 0 ~ 100 (142)
- Hide Color: On, Off
- Invert: On, off
- Frame Average: 0 ~ 10
- Power: 2 ~ 100 (143)
- PRF: 0.1kHz ~ 19.5kHz (Probe dependent) (139)
- (138) ▪ Sensitivity: 0 ~ 5
- Smoothing: 0 ~ 5
- Steer Angle: 0°, ±15°, ±20°, ±30° (140)
- Velocity
- Filter: 1 ~ 4 (141)
- (137) ▪ Vel + Variance Map

M MODE

PWD MODE

- (127) ▪ Chroma Map: Off, 1 ~ 11
 - Display format
 - M-mode only
 - Up/down, Side by side
 - Size: 50/50, 70/30, 30/70 } (135)
- (132) ▪ Dynamic Range: 30 ~ 256
- Gain: 0 ~ 100 (131)
- (128) ▪ M Mode Map: 1 ~ 12
- Power: 2 ~ 100 (133)
- QuickScan™: Off, On, Update (134)
- (129) ▪ Sweep Speed
- Color M
- Anatomical M (130)

- Auto Calc: Off, Live, Frozen
- Base Line: -8 ~ 8
- Chroma Map: Off, 1 ~ 11 (144)
- Display format: Up/down, Side by side, Doppler Only
- Display Size: 70/30, 50/50, 30/70
- Doppler Map: 1 ~ 12
- Dynamic Range: 30 ~ 256
- Frequency: 2 Steps
- Gain: 0 ~ 100
- Invert: On, Off
- Power: 2 ~ 100
- (145) ▪ PRF: 1.0 ~ 22.5 kHz (Probe dependent)
- QuickScan™: On, update (146)
- Simultaneous: On, Off
- (150) ▪ Sound: 0 ~ 100
- Angle Correction: -80° ~ 80° (148)
- SV Position control
- (147) ▪ SV Size: 0.5 ~ 25mm
- Quick Angle: 0°, 60°, -60°

COLOR MODE

- Balance: 0 ~ 16
- Baseline: -8 ~ 8
- (136) ▪ Color Map: 1 ~ 12
- Line Density: Low, Med, High
- Dual Live: On, off



- Sweep Speed: 15 ~ 117 mm/s
- Trace
 - Method: Off, Mean, Max
 - Trace Direction: Both, Above, Below
- Update
- Filter: 1 ~ 4 (150)

CWD MODE

- Auto Calc.: Off, Live, Frozen
- Base line: -8 ~ 8
- (152) ▪ Chroma Map: Off, 1 ~ 11
- Display Format: Up/down, Side by side, Doppler Only
- Display Size: 70/30, 50/50, 30/70

- Doppler Map: 1 ~ 12

- Dynamic Range: 30 ~ 256 (155)

- (154) ▪ Gain: 0 ~ 100

- Invert: On, Off

- Power: 2 ~ 100

- (151) ▪ Sample Rate: 1.8kHz ~ 57kHz (probe dependent)

- QuickScan™: On, update

- (156) ▪ Sound: 0 ~ 100

- Angle Correction: -80° ~ 80° (157)

- SV Position Control

- Quick Angle: 0°, 60°, -60°

- (158) ▪ Sweep Speed: 18 ~ 142 mm/s

- Trace

- Method: Off, Mean, Max

- Direction: Both, Above, Below

- (153) ▪ Filter: 1 ~ 4

PD MODE

- Balance: 0 ~ 16 step

- (159) ▪ Color Map: 1 ~ 12

- Line Density: Low, Med, High

- Dual Live: On, off

- Filter: 1 ~ 4

- Frame Average: 0 ~ 5 step

- Frequency: 2 steps (probe dependent) (166)

- (160) ▪ Gain: 0 ~ 100

- Hide Color

- (161) ▪ Invert: On, Off (S-Flow™ only)

- Power: 2 ~ 100

- PRF: 0.1 ~ 19.5 kHz (Probe dependent) (164)

- (163) ▪ Sensitivity: 0 ~ 5

- Smoothing: 0 ~ 5

- Steer Angle: 0°, +/-15°, +/-20°, +/-30° (165)

- (162) ▪ Filter: 1 ~ 4

3D/4D MODE

- 3D

- (90) ▪ 4D (Live 3D)

- Color 3D

- 3D XI™

- MSV (91)

- Oblique View™ (92)

- XI VOCAL™

- 5D NT

- MagiCut™ (169)

- Orientation Help

- (170) ▪ Curved ROI

- 3D Cine

- Rotation Angle: 30°/45°/60°/90°/180°/360°

- Step Angle: 1°/3°/5°/15°

- 4D Cine

- Cine Type: Volume, Image

- Layout

- Play Mode: Loop, Yoyo

- Speed: Very Slow, Slow, Normal, Fast, Fastest

- Trim Start, Trim End

- Volume Index

- MPR

- 2D



- Render
- Accept ROI
- Init
- Layout
- Ref. Image: A/B/C/OH
- 3D Rotation: -90°/90°/180°
- Select
- Position
- Bias
- Mix
- Vol. Index
- Th. Low
- Transparency
- MSV
 - Layout
 - Ref. Image: A / B / C / MSV OH
 - Page
 - Init
 - Orientation Dot
 - Position
 - Bias
 - Selected Slice
 - Vol. Index
 - Slice Thick.
 - Ruler
- Oblique View™
 - Layout
 - Auto Increment
 - OVIX™
 - Init
 - Clear Line
 - Cut Type: Line / Contour / Parallel / Plumb
 - Image Rotation: -90° / 90° / 180°
- VOCAL™
 - Solid / General / Prostate / Cystic / Sphere / Manual
 - Init
 - Ref. Image: A / B / C
- Step Angle: 12° / 18° / 30°
- Start
- Pole 1 / Pole2
- XI VOCAL™
 - Solid / Cystic / General / Manual
 - Init
 - Ref. Image: A / B / C / Ref. Contour
 - Slice Direction
 - Start
 - Number of Slice
- Chroma Map
 - 2D Chroma Map: Map 1 ~ Map 10
 - 3D Chroma Map: Map 1 ~ Map 10
- Post Processing
 - Negative / Auto Contrast / Threshold / Sharpen / 3D CI
- Preset (Probe dependent)
 - Default / Surface / Skeleton / Extremity / Brain / User1~3
 - Load / Save / Rename / Reset
- ROI Size / ROI Position
- Rendering Preset: Default / Surface / Skeleton / Extremity / Brain / User1~3
- Scan Quality: Low, Med1, Med2, High
- 171 → Volume Angle: 10 ~ 90 (Probe dependent)
- XI STIC™
 - Scan Time (7 ~ 15 sec)
 - Trimester (1Trim, 2Trim, 3Trim)
 - Speed (Very Slow, Slow, Normal, Fast, Fastest)
 - Vol. Index
- 5D NT
- 5D Follicle 104
- 93 → RealisticVue
 - Light direction (9 directions) 164
 - Move light
 - Set color (Hue, Saturation, Lightness) 168

ELASTOSCAN MODE



- Line Density: Low, Med, High — (178)
- (177) ■ Invert: On, off
- Dual Live: On, off — (175)
- (179) ■ Frequency
- Gain: 0 ~ 100
- Contrast: 0 ~ 100
- Frame Average: 0 ~ 100
- (177) ■ Color Map: 1 ~ 5
- Alpha Blending: On, off
- (176) ■ Blending Level: 0 ~ 100
- Enhancement: 0 ~ 100

- (184) ■ Application : Abdomen, MSK, Small Parts, Vascular, OB, GYN, Pediatric
- Safety Class: BF

CONVEX

CA1-7AD

- Center frequency : 3.2MHz
- Band Width: 1 ~ 7 MHz
- Radius of curvature : 45.692 mm
- Field of view : 70 °
- Number of elements : 160
- Biopsy Guide : Available
- Application : Abdomen, MSK, OB, GYN, Pediatric, Vascular, Urology
- Safety Class: BF

TRANSDUCERS

LINEAR

LA3-14AD

- Center frequency : 7.2MHz
- Band Width : 3 ~ 14 MHz
- Radius of curvature : Flat
- Field of view : 50 mm
- Number of elements : 256
- Biopsy Guide : Available
- Application : Abdomen, MSK, Small Parts, Vascular, OB, GYN, Pediatric
- Safety Class: BF

LA3-16A

- Center frequency : 8.7MHz
- Band Width : 3 ~ 16 MHz — (184)
- Radius of curvature : Flat
- (186) ■ Field of view : 38.4 mm
- Number of elements : 192 — (185)
- (188) ■ Biopsy Guide : Available

CA2-9AD

- (180) ■ Center frequency : 4.9MHz
- (180) ■ Band Width: 2 ~ 9 MHz
- Radius of curvature : 60.365 mm
- Field of view : 58 ° — (182)
- (181) ■ Number of elements : 192
- Biopsy Guide : Available
- (183) ■ Application : Abdomen, MSK, OB, GYN, Pediatric, Vascular, Urology
- Safety Class: BF

CF4-9

- Center frequency : 5.65MHz
- Band Width: 4 ~ 9 MHz
- Radius of curvature : 14 mm
- Field of view : 92 °
- Number of elements : 128
- Biopsy Guide : Not available
- Application : Abdomen, MSK, OB, GYN, Pediatric, Vascular, Urology
- Safety Class: BF

CA2-6BM

- Center frequency : 3.5MHz
- Band Width: 2 ~ 6 MHz
- Radius of curvature : 20 mm
- Field of view : 86.08 °
- Number of elements : 144
- Biopsy Guide : Not available
- Application : Abdomen, MSK, OB, GYN, Pediatric, Vascular, Urology
- Safety Class: BF

ENDOCAVITY

ER4-9

- Center frequency: 6.7MHz
- Band Width : 4 ~ 9 MHz
- Radius of curvature : 10.073 mm
- Field of view : 148.092 °
- Number of elements : 128
- Biopsy Guide : Available
- Application : OB, GYN, Urology
- Safety Class: BF

EVN4-9

- Center frequency : 6.65MHz
- Band Width : 4 ~ 9 MHz
- Radius of curvature : 10.073 mm
- Field of view : 148.092 °
- Number of elements : 128
- Biopsy Guide : Available
- Application : OB, GYN, Urology
- Safety Class: BF

VOLUME

CV1-8AD

- Center frequency : 4MHz
- Band Width : 1 ~ 8 MHz
- Radius of curvature : 41.4 mm
- Field of view: 70 °
- Number of elements : 192
- Biopsy Guide : Available
- Application : Abdomen, MSK, OB, GYN, Pediatric, Vascular, Urology
- Safety Class: BF

V5-9

- Center frequency : 5.59MHz
- Band Width: 5 ~ 9 MHz
- Radius of curvature : 10.1 mm
- Field of view : 150.6 °
- Number of elements : 192
- Biopsy Guide : Available
- Application : OB, GYN, Urology
- Safety Class: BF

PHASED ARRAY

PE2-4

- Center frequency :2.7MHz
- Band Width : 2 ~ 4 MHz
- Radius of curvature : Flat
- Field of view : 90 °
- Number of elements : 80
- Biopsy Guide : Not Available
- Application : Abdomen, Cardiac, Vascular, Pediatric
- Safety Class: BF

PA3-8B

- Center frequency : 4.7MHz
- Band Width: 3 ~ 8 MHz
- Radius of curvature : Flat
- Field of view: 90 °
- Number of elements: 96

189

191

192

- Biopsy Guide : Not available
- Application : Abdomen, Cardiac, Vascular, Pediatric
- Safety Class: BF

PA4-12B

- Center frequency : 7MHz
- Frequency Bandwidth : 4 ~ 12 MHz
- Field of view : 90°
- Number of elements : 96
- Biopsy Guide : Not Available
- Application : Cardiac, Pediatric
- Safety Class: BF

PENCIL

CW6.0

- Center frequency : 6.0MHz
- Application : Cardiac, Vascular
- Safety Class : BF

DP2B

- Center frequency : 2.0MHz
- Application : Adult Echo, Ped Echo
- Safety Class : BF

MMPT3-7

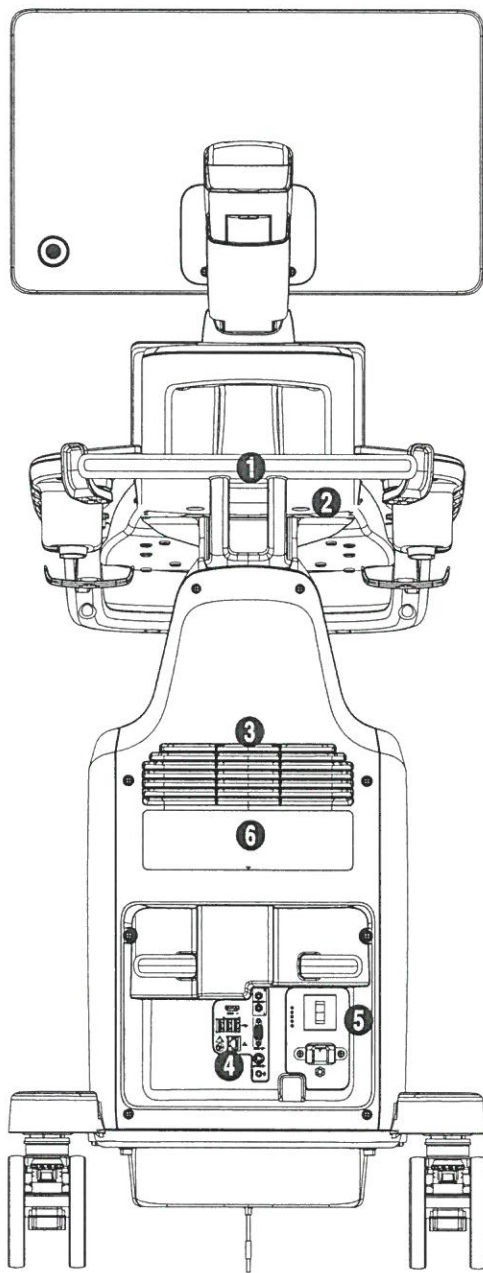
- Phased Array (TEE Type)
- Radius of curvature 100mm
- Field of view 90°
- Number of elements 64
- Biopsy Guide Not Available
- Application : Cardiac
- Safety Class BF

- Caliper
- Abdomen
- Cardiac
- Vascular
- Gynecology
- Obstetrics
- Fetal Heart
- Urology
- MSK
- Small Parts
- Pediatric

CALIPER

- 2D Distance
- M Distance
- 2D Trace
- 2D Trace length
- Doppler Manual Trace
- Doppler Limited Trace
- 2 Lines Angle
- 3 Points Angle
- Ellipse (Area / Circumference)
- Spline
- Open Spline
- Closed Spline
- %Stenosis (Diameter)
- %Stenosis (Area)
- 1 Distance Volume
- 2 Distance Volume
- 3 Distance Volume
- Ellipse Volume
- Ellipse + Distance Volume
- Disk Volume
- Slope
- Heart Rate (M, Doppler)
- Time (M, Doppler)

MEASUREMENT



- ① Handle
- ② Storage compartments
- ③ Ventilation
- ④ Rear panel
- ⑤ Power connection part
- ⑥ ID label

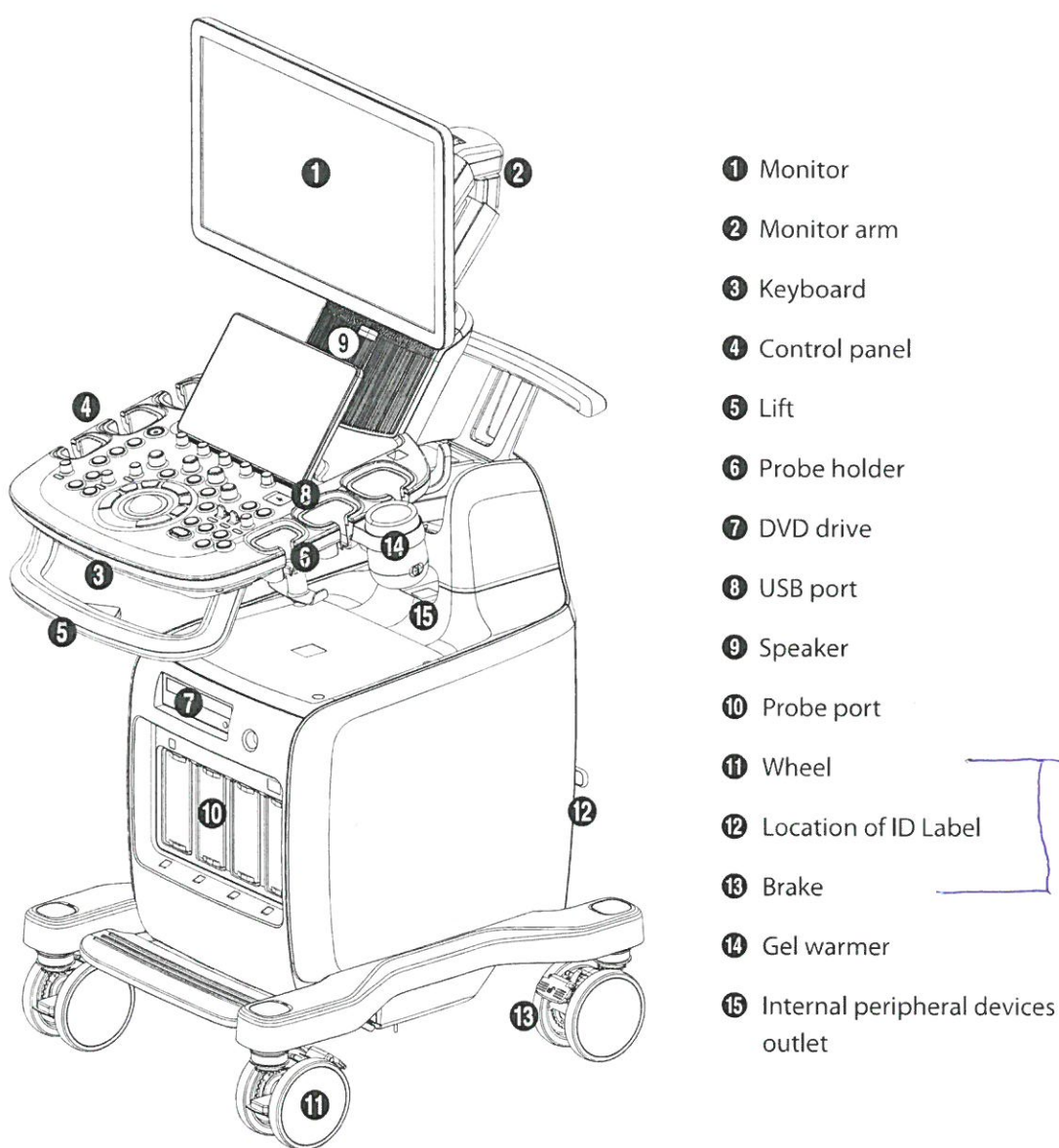
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[Figure 2.2 Back of the Product]



:: Product Configuration

This product consists of monitor, control panel, console, peripheral devices and probes.



[Figure 2.1 Front of the Product]



❏ Ref. Image

Tap the corresponding button on the touch screen to select a reference image from among A, B, and C. The selected image will be highlighted with blue borders.

- ▶ A: Axial Section
- ▶ B: Sagittal Section
- ▶ C: Coronal Section

■ OH (Orientation Help)



NOTE: This option may be used in **2D** and **Render**.

Tap the corresponding button on the touch screen to turn it on or off. If it is turned on, a 3D image will be displayed along with OH.

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■ ClearVision

ClearVision removes noise from the image and enhances outlines to help show the image more clearly. You can select off or adjust the index between 1 and 5 by tapping the touch screen.

❏ 3D Rotation



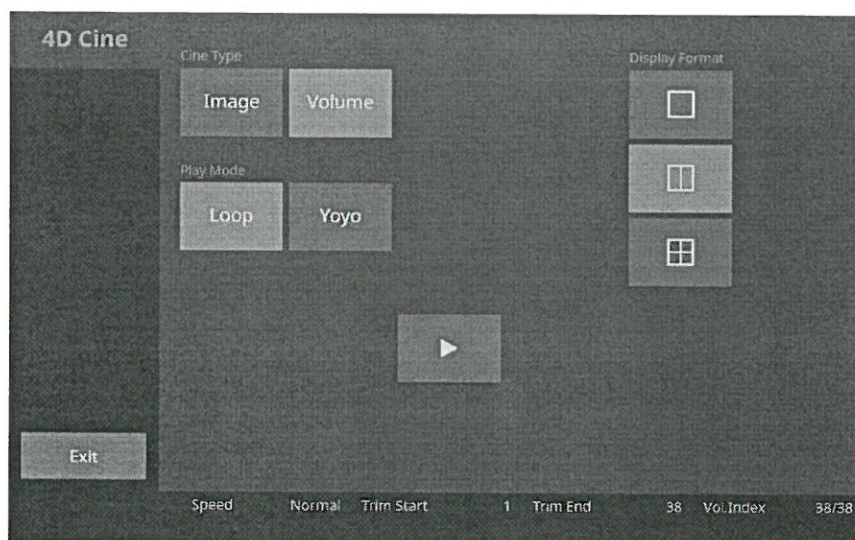
NOTE: Mix, Th.Low, and Transparency are available in **Render** mode.

Select -90°, 90°, or 180° by tapping the button on the touch screen. The coordinate system rotates based on the current 3D image.

❏ Init

When you tap the touch screen, the position information of the 3D image is initialized.





[Figure 7.51 4D Cine – Touch Screen]

5D NT



NOTE:

- ▶ 5D NT is an optional feature of this product.
- ▶ These options are only available in MPR mode.

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This feature locates the Mid-Sagittal View and measures the thickness of the nuchal translucency (NT) of the fetus. The *5D NT* window appears on the touch screen.

Use the trackball to place NT Seed in NT area, and press the **Set** button to display the NT measurement on the A Plane.

Tips!

How To get good results

- ▶ You can get better results when the Sagittal View of the fetus is captured as accurately as possible.
- ▶ The higher the contrast between the fetus's palate and nasal bone, the better.
- ▶ It is preferable to have the lateral direction of the probe be parallel to the body orientation of the fetus.
- ▶ It is preferable to have the probe's angle to the fetus's nasal bone as close to 30 degrees as possible.



ElastoScan Mode

The elasticity of ROI in a 2D image is shown in color. The 2D Mode image is also shown, allowing the marking and adjustment of the ROI within the scanned image.



NOTE:

- ElastoScan mode is an optional feature of this product.
- The probes, applications, and presets that support ElastoScan are as follows:

Probe	Application	Preset
LA3-14AD	MSK	General
	Smallparts	Breast, Thyroid
LA4-18BD	MSK	General
	Smallparts	Breast, Thyroid
EA2-11B	GYN	Uterus, Adnexa
	Urology	Prostate
ER4-9	GYN	Uterus, Adnexa
	Urology	Prostate
V5-9	GYN	Uterus, Adnexa
	Urology	Prostate
LA3-16A	MSK	General
	Smallparts	Breast, Thyroid

- This function is not available in E mode. Angle, View Area, ECG



Starting and Closing E Mode

In 2D Mode, tap **ElastoScan** on the touch screen. Press the button again to return to 2D Mode.

E Mode Screen

Color Bar

In E Mode, the color bar indicates the stiffness of a tissue. Regardless of the color, the lower section of the bar indicates that the target area is stiffer than the surrounding tissues and the upper section indicates that the target area is less stiff than the surrounding tissues.



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Compression Guide Bar

The strength and status of compression are shown in different number of blocks and colors between Steps 0 and 7. All blocks are empty at Step 0 which appears when the probe is almost stationary, the ROI has insufficient region, or matching between images is poor. Step 1 – Step 2 (in grey) mean inadequate compression and Step 3 – Step 7 (in blue or green) mean adequate compression; the number of blocks filled represents the number of step level.



Performing a Scan

When using E mode, place a probe onto the surface of an area to observe and position the ROI appropriately on a lesion to observe. Then use the probe to periodically compress the region. When the compression guide is supported, refer to this guide to adjust the size of the compression. If the region being examined is quite deep, it is best to increase the compression.

Tips!

Precautions for Scanning

To closely observe the location of the lesion, minimize the movement of tissues.

A breast is a complex organ which consists of lactiferous ducts, lactiferous glands, fatty tissue, fibrous tissue, and chest muscles. An axial movement of the probe may cause an unintended movement of the tissues.

The prostate and the thyroid consist of tissues that are simpler than those of a breast and there are relatively fewer unintended movements.



REZUMAT SPECIFICATIE

SPECIFICATIE FIZICA

- Inaltime: 1,335 ~ 1,710mm (cu monitor)
- Latime: 530 mm
- Adancime: 750 mm
- Greutate: 79.8 Kg (farat accessories)
- Greutate: Approx. 100 Kg (cu sarcina sigura de lucru)

MODUL IMAGISTICA

- 2D-Mod
- M-Mod
- Color M-Mod
- Anatomic Mod
- Color Doppler Mod
- Pulsed Wave (PW) Spectral Doppler Mod
- Continuous Wave (CW) Doppler Mod
- Tissue Doppler Imaging (TDI) Mod
- Tissue Doppler Wave (TDW) Mod
- Power Doppler (PD) Mod
- Mod ElastoScan
- 3D/4D/XI STIC imaging Mode
- (19) Dual Mod
- Quad Mod (21)
- Mod Combinat
- Mod Simultan
- Zoom Mod
- S-Flow Mode

FOCUSARE

- Transmite focalizarea, maxim de opt puncte (patru puncte simultan selectabile)
- Dinamica digitala primeste focalizarea (continuu)

SONDA CONNECTIONS

- 3 sau 4 Conectori Sonda (Selectabil)
- CW Conector Sonda (Optional)

MONITOR

- Monitor principal
 - Rezolutie: 1,920 x 1,080
 - Monitor LED 21.5 Inch
- Ecran tactil
 - Resolution: 1,280 x 800
 - 10.1 Inch Monitor LED

ECG

- Tip USB(Tip CF)

STOCARE IMAGINE

- Maxim 45,000 cadre pentru memorie Cine
- Maxim 14,000 Linii pentru memorie Loop
- Sistem umplere Imagine

PANOU DORSAL INTRARE/IESIRE CONEXIUNI

- (34) Port iesire audio (Dreapta/Stanga)
- VGA monitor
- S-Video Iesire
- LAN
- USB Port
- HDMI Ieire
- MIC

AUXILIARE

- DVD Multi-Drive
- Imprimanta video alb negru digitala
- Imprimanta video color digitala
- Imprimanta USB
- Inregistrare DVD
- Pedala Picior (IPX8)
- Memorie USB
- USB HDD
- USB ECG
- Monitor

SPECIFICATIE GENERALA

- 44 - Rotatie: $\pm 160^\circ$
- Inclinare: $+ 25^\circ / - 70^\circ$ - 45

SPECIFICATIE FIZICA

- 46 - Inaltare: 180 mm

PANOU DE COMANDA

- Inaltime: 1,335 ~ 1,710mm (cu monitor)
- Latime: 530 mm
- Adancime: 750 mm
- Greutate:
 - 79.8Kg (cu acesorii)
 - Approx. 100 Kg (cu sarcina sigura de lucru)

- 51 - Ecran tactil
- Monitor LED de inalta rezolutie de 10.1 inch - 52
 - 53 - Rezolution: 1,280 X 800
 - Capacitate tactile - 55
 - Tastatura virtuala alfanumerica
 - Tastatura alfanumerica - 54
 - 47 - 6 Butoane folosit pentru utilizatori
 - Tri-status iluminare
 - 48 - 6 suporturi de sonda
 - Ajustare inaltime: 180 mm - 49
 - 50 - Rotire: $\pm 30^\circ$

ASPECT CONSOLA

- 23 - 3 SAU 4 Porturi Active de Sonda (Optional)
- Cart cu 4 roti pivotante
 - Brat monitor articular
 - Construit cu imprimanta incorporata
 - Panou de comanda ergonomic
 - Ecran tactil
 - Tastatura alfanumerica
 - Trackball
 - Suport sonda / Suport gel - 26
 - 27 - Maner fata/spate
 - Modul PC integrat
 - SSD integrat
 - 31 - Windows 7 Standard incorporat
 - ODD (Optional)
 - 28 - Incalzitor de gel (Optional)
 - ECG (Optional)

PC

- Procesor principal: Intel i3-4100E 2.4GHz
- Memorie principala: 8 GB - 30
- 29 - Construit cu SSD: 512GB

SPECIFICATII ELECTRICE

- Frecventa: 50/60 Hz
- Voltaj: 100 ~ 240 VAC
- Consum energie: Max. 800 VA cu periferice - 33
- Caldura disipata: 2,729.7 [BTU/h] - 35
- 32 - Zgomot sistem: under 34.8 dB
- Circuit echipotential incorporat

MONITOR PRINCIPAL

- 39 - Monitor LED de inalta rezolutie 21.5 inch
- Rezolution: 1,920 x 1,080 (16:9) - 40
 - 41 - Number culori: 16.7 M
 - Ajustare luminozitate - 42
 - Meniu soft dinamic interactiv
 - 43 - Brat monitor articular

SPECIFICATIE SISTEM

APLICATII - 1

- 1 - Abdomen
- Cardiac
 - Ginecologie



3rd Trimestru

MOD OPERATIONAL

- MSK
- Obstetrica
- Pediatric
- Parti moi
- Urologie
- Vascular

PRESETARI

- Abdomen
- Adult Echo
- Adnexe
- Aorta
- Aortic Arch
- Arterial
- Vezica
- Intestin
- San
- Carotida
- Adanc
- Inima fetala
- General
- Neo Cap
- NT
- Abdomen pediatric
- Ecografie pediatrica
- Sold Pediatric
- Renal
- Prostata
- Spine
- Superficial
- Tiroida
- Testicul
- TCD
- Uter
- Venos
- 1st Trimestru
- 2nd Trimestru

- 3 B-Mod (2D)
- 4 Color Doppler Mode (C)
- 5 Pulse Wave Doppler (PWD)
- 6 Continuous Wave Doppler (CWD): Ghidat/ Static
- 7 Power Doppler Mode (PD)
- 8 S-Flow™ Mod
- 9 M-Mod (M)
- 10 Anatomic M Mod
- 11 Singular/Dual/Quad Mod
- Volum Mode
- 12 - 3D / 4D / 3D XI / XI STIC™
- 14 TDI/TDW
- 15 ElastoScan Mod

MOD AFISAJ

- Dual Mode
 - B+B, B+B/C, B+B/PD, B+B/S-Flow
 - ElastoScan + ElastoScan
- Dual Live Mod
 - B+B, B+B/C, B+B/PD, B+B/S-Flow
 - B+ElastoScan
- Mod Triplex in timp real (Mod Simultan)
 - B+C+PW, B+PD+PW, B+S-Flow+PW, B+TDI+TDW
 - B+C, B+M, B+3D, B+4D, B+PW, B+PD, B+S-Flow, B+CW, Duplex, Triplex Mode
 - B+C+PW, B+C+CW, B+C+M, B+ElastoScan, B+TDI, B+TDW
- Quad Mod
 - Combinatii de B/B, B/C, B/PD si B/S-Flow, ElastoScan
- Zoom Mod
 - Write Zoom / Read Zoom / Pen zoom/ Panning
- 18 Needle Mate+
- 16 Panoramic



17 Trapezoidal

TIPURI DE SONDE

56 Lineara: LA3-14AD, LA3-16A

▪ Convexa: CA1-7AD, CA2-9AD

59 Endo-Cavitara: ER4-9, EVN4-9

▪ Micro-Convexa: CF4-9, CA2-6BM

60 Arie fazata: PE2-4, PA3-8B, PA4-12B

▪ Creion: DP2B, CW6.0

64 TEE: MMPT3-7

▪ Sonde de volum (Sonde mecanice 3D)

61 - Convexa de volum: CV1-8AD

- Endo-Cavitara de Volum: V5-9

CARACTERISTICI STANDARD SISTEM

65 Formare fascicul hybrid digital complet

▪ Frecventa: 1 ~ 18MHz

68 Afisare adancime imagine (in functie de sonda)

- Adancime minima: 2cm

- Adancime maxima: 38cm

69 Numar de puncte de focalizare: 1 ~ 4

▪ Pozitia zonei focale de selectare

- 1 ~ 8 Puncte focalizare
selectabile

(In functie de sonda si aplicatie)

▪ Zona focala dinamica / Deschidere de transmitere

▪ Multi-frecventa / Tehnologie cu banda larga

▪ Tehnologie S-Vue

▪ Compunerea frecventei (FSI)

70 ClearVision

▪ 256 Nuante de gri

74 Gama dinamica: 256

▪ Rata maxima a cadrelor

- 2,000 fps (Hz)

▪ Rata maxima a cadrelor de culaore

- 400 fps (Hz)

77 Inversarea imaginii: Dreapta/Stanga, Sus/Jos

▪ Rotirea Imaginii: 90°, 180°, 270°

▪ Pre Procesare

▪ Post Procesare

▪ Subler Digital / Masuratoare

▪ Memorie CINE

82 - Capacitate: 500 MB

- Bucla CINE: Max. 14,000 Linii

- Stocare imagine: Max. 45,000 cadre / 60 Sec

▪ QuickScan™

▪ Pachet rapoarte

▪ Marker corporal

▪ Timp maxim de pornire: Max. 90 Sec

24 Timp schimbare sonda: 2-3 Sec

▪ Presetari Programabile de utilizatori : Peste 30 Preseturi

89 Butoane programabile de utilizator: 6 butoane

▪ Functie de editare a ecranului tactil

▪ SonoView™

87 Backup / Restabile date

▪ Exportarea si importul imaginilor

▪ PW raza de viteza: 0.1cm/s ~ 8.8m/s

▪ CW raza de viteza: 1cm/s ~ 19.3m/s

OPTIUNI SISTEM

90 4D

▪ 3D XI™

▪ Auto IMT+

95 Masuratori cardiace

▪ Functie CW

▪ DICOM 3.0

97 ElastoScan

▪ EZ Exam+

98 Mobile export

▪ Needle Mate+

101 Panoramic

▪ 5D NT

104 5D Foliculi

▪ RealisticVue

▪ XI STIC

▪ DVD-RW

110 ECG (AHA / IEC)



- Conector picior (111)
- (112) ▪ Incalzitor gel
- Tavita imprimanta (Mare / Mica)
- Conector 3P PSA / Conector 3P PSA (cu port de sonda creion)
- Conector 4P PSA / Conector 4P PSA (cu port de sonda creion)
- 2D NT (105)
- (98) ▪ E-Strain
- Strain+ (108)
- (109) ▪ Stress Echo

AFISAJ

- Aplicatii
- Preseturi
- Mod
- Daae: 3 tipuri (Selectabil)
 - YYYY-MM-DD
 - MM-DD-YYYY
 - DD-MM-YYYY
- Timp: 2 tipuri (Selectabil)
 - 24 hours
 - 12 hours
- Pacient (Informatii generale)
 - Pacient ID
 - Nume pacient (prenume, al doilea prenume & nume de familie)
 - Sex: Feminin, Masculin, Altul
 - Data nastere / Varsta
 - Numar ascensiune
 - Medic diagnostician
 - Medic Ref.
 - Operator
 - Indicatii
 - Informatii consult
 - E-mail
- Varsta gestationala: LMP/EDD/GA
- Institut
- Operator
- Nume sonda

HS50 DATA SHEET V1.00 Rev01

Sonda orientare



- Adancime / Latime
- Zona focala
- Numar focal
- Linie TGC
- FPS (Hz)
- Frecventa
- Gain
- Gama dinamica
- Harta
- Cadre medii
- Putere
- Indice ClearVision
- Indice MultiVision
- Bara gri
- Index Acustic: TIs, Tlb, Tic
- Index mecanic: MI
- Caliper & rezultatul masuratorilor
- Indicator
- Ac indicator
- Marker corporal
- Pozition ROI / Marime ROI
- Filtru perete
- Zoom / Panning
- Ghid de biopsie (in functie de sonda)

LIMBA

- Afisaj
 - Engleza, Franceza, Germana, Italiana, Spaniola, Portugheza
- Limba de introducere
 - Engleza, Franceza, Germana, Italiana, Rusa, Nordica (Norvegiana, Filandeza, Suedeza, Daneza)

MEDIU OPERATIONAL

- TemperaturA: 10°C ~ 35°C
- Umiditate: pana la 90%
- Presiune: 700 ~ 1060 hPa