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Acclarix AX3 VET Series

Veterinary Diagnostic Ultrasound System

Version 1.0

User Manual

Advanced Volume

CE

EDAN

Preface

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This User Manual applies to 1.0X releases for Acclarix AX3 VET series Veterinary Diagnostic Ultrasound Systems including Acclarix AX3 VET and Acclarix AX2 VET. See Section A.8 in the basic user manual for the difference between these models.

This User Manual Advanced Volume together with the User Manual Basic Volume (P/N: 01.54.458350) contains necessary and sufficient information to use the Acclarix AX3 Series Veterinary Diagnostic Ultrasound Systems safely for the intended purposes and approved clinical applications.

Not all measurements and features are available for all system models with different transducers. This manual is based on the maximum configuration and therefore some contents may not apply to your product. If you have any question, please contact EDAN.

Contact Information:

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Content

1 Acoustic Output Data

Table 1-1 Table Key

Abbreviation	Full Name
A_{aprt}	-12dB Output Beam Area
d_{eq}	Equivalent Beam Diameter
f_{awf}	Acoustic Working Frequency
$I_{pa,\alpha}$	Attenuated Pulse-Average Intensity
pii	Pulse-Intensity Integral
pii_{α}	Attenuated Pulse-Intensity Integral
$I_{sppa,\alpha}$	Attenuated Spatial-Peak Pulse-Average Intensity
I_{spta}	Spatial-Peak Temporal-Average Intensity
$I_{spta,\alpha}$	Attenuated Spatial-Peak Temporal-Average Intensity
$I_{ta,\alpha}(Z)$	Attenuated Temporal-Average Intensity
MI	Mechanical Index
P	Output Power
P_{α}	Attenuated Output Power
$P_{r,\alpha}$	Attenuated Peak-Rarefactional Acoustic Pressure
P_r	Peak-Rarefactional Acoustic Pressure
n_{pps}	Number of Pulse per Ultrasonic Scan Line
prr	Pulse Repetition Rate
srr	Scan Repetition Rate
TI	Thermal Index
TIB	Bone Thermal Index
TIC	Cranial-Bone Thermal Index
TIS	Soft-Tissue Thermal Index
t_d	Pulse Duration
X,Y	-12dB Output Beam Dimensions
z_b	Depth for Bone Thermal Index
z_{bp}	Break-Point Depth
z_{pii}	Depth for Peak Pulse-Intensity Integral
z_{MI}	Depth for Mechanical Index
$z_{pii,\alpha}$	Depth for Peak Attenuated Pulse Intensity Integral

z_{sii}	Depth for Peak Sum of pulse intensity intergrals
$z_{sii,\alpha}$	Depth for peak sum of attenuated pulse intensity integrals
z_s	Depth for TIS
FOV	Field of View
PRF	Pulse Repetition Frequency
SV	Sample Volume

1.1. Acoustic Output Table for C5-2Q

Acoustic Output Reporting Table for IEC60601-2-37

Transducer Model: C5-2Q

Operating Mode: B

Index label			MI	TIS		TIB		TIC
				At surface	Below surface	At surface	Below surface	
Maximum index value			1.16	1.37		1.37		N/A
Index Component Value				1.37	1.37	1.37	1.37	
Associated acoustic parameters	$p_{r.\alpha}$ at zMI	(MPa)	1.80					
	P	(mW)		128.55		128.55		N/A
	P1X1	(mW)		98.88		98.88		
	zs	(cm)			-			
	zb	(cm)					-	
	zMI	(cm)	0.95					
	zPII,a	(cm)	0.95					
	fawf	(MHz)	2.42	2.41	2.41	2.41	2.41	N/A
Other Information	prr	(Hz)	-					
	Srr	(Hz)	53.00					
	npps		1.00					
	$I_{pa.\alpha}$ at zPII,a	(W/cm^2)	94.85					
	Ispta,a at zPII,a or zSII,a	(mW/cm^2)	12.02					
	Ispta at zPII or zSII	(mW/cm^2)	9.64					
	pr at zPII	(MPa)	1.69					
Operating control conditions	Frequency		Level H1	Level H1		Level H1		N/A
	Display Depth(mm)		40.00	40.00		40.00		N/A
	Focus Pos(mm)		30.00	30.00		30.00		N/A
	FOV		Small	Small		Small		N/A
	Line Density		Low	Low		Low		N/A

Note:

1. (-) This index or parameter is not required for this operating mode.
2. (N/A) This transducer is not intended for cephalic examination.

Acoustic Output Reporting Table for IEC60601-2-37

Transducer Model: C5-2Q

Operating Mode: B+M

Index label			MI	TIS		TIB		TIC
				At surface	Below surface	At surface	Below surface	
Maximum index value			1.21	1.11		1.63		N/A
Index Component Value				1.04	1.11	1.04	1.63	
Associated acoustic parameters	$p_{r.\alpha}$ at zMI	(MPa)	2.08					
	P	(mW)		96.06		96.06		N/A
	P1X1	(mW)		73.89		73.89		
	zs	(cm)			0.30			
	zb	(cm)					1.66	
	zMI	(cm)	1.76					
	zPII,a	(cm)	1.76					
	fawf	(MHz)	2.94	2.98	2.98	2.98	2.98	N/A
Other Information	prr	(Hz)	1000.00					
	Srr	(Hz)	-					
	npps		1.00					
	$I_{pa.\alpha}$ at zPII,a	(W/cm^2)	149.06					
	Ispta,a at zPII,a or zSII,a	(mW/cm^2)	62.97					
	Ispta at zPII or zSII	(mW/cm^2)	69.76					
	pr at zPII	(MPa)	2.16					
Operating control conditions	Frequency		Level H1	Level H1		Level H1		N/A
	Display Depth(mm)		40.00	40.00		40.00		N/A
	Focus Pos(mm)		40.00	40.00		40.00		N/A
	FOV		Full	Full		Full		N/A
	Line Density		Low	Low		Low		N/A
	M Sweep Speed		Fast	Fast		Fast		N/A

Note:

1. (-) This index or parameter is not required for this operating mode.
2. (N/A) This transducer is not intended for cephalic examination.

Acoustic Output Reporting Table for IEC60601-2-37

Transducer Model: C5-2Q

Operating Mode: B+C/B+PDI/B+DPDI

Index label			MI	TIS		TIB		TIC
				At surface	Below surface	At surface	Below surface	
Maximum index value			1.18	1.48		1.48		N/A
Index Component Value				1.48	1.48	1.48	1.48	
Associated acoustic parameters	$p_{r.\alpha}$ at zMI	(MPa)	2.23					
	P	(mW)		133.65		133.65		N/A
	P1X1	(mW)		102.80		102.80		
	zs	(cm)			-			
	zb	(cm)					-	
	zMI	(cm)	1.46					
	zPII,a	(cm)	1.46					
	fawf	(MHz)	3.56	2.96	2.96	2.96	2.96	N/A
Other Information	prr	(Hz)	-					
	Srr	(Hz)	31.17					
	npps		1.00					
	$I_{pa.\alpha}$ at zPII,a	(W/cm^2)	226.16					
	Ispta,a at zPII,a or zSII,a	(mW/cm^2)	4.03					
	Ispta at zPII or zSII	(mW/cm^2)	2.83					
	pr at zPII	(MPa)	2.29					
Operating control conditions	B Frequency		Level 2	Level 2		Level 2		N/A
	B Display Depth(mm)		240.00	240.00		240.00		N/A
	B FOV		Small	Small		Small		N/A
	B Line Density		High	High		High		N/A
	C Frequency		Level 1	Level 1		Level 1		N/A
	C Left Edge of ROI(mm)		-7.50	-7.50		-7.50		N/A
	C Right Edge of ROI(mm)		7.50	7.50		7.50		N/A
	C Up Edge of ROI(mm)		25.50	25.50		25.50		N/A
	C Down Edge of ROI(mm)		34.50	34.50		34.50		N/A
	C Line Density		Low	Low		Low		N/A
	C PRF(KHz)		0.60	1.90		1.90		N/A

Note:

1. (-) This index or parameter is not required for this operating mode.
2. (N/A) This transducer is not intended for cephalic examination.

Acoustic Output Reporting Table for IEC60601-2-37

Transducer Model: C5-2Q

Operating Mode: PW/B+PW/B+C+PW

Index label			MI	TIS		TIB		TIC
				At surface	Below surface	At surface	Below surface	
Maximum index value			1.22	1.02		2.72		N/A
Index Component Value				0.71	1.02	0.69	2.72	
Associated acoustic parameters	$p_{r.\alpha}$ at zMI	(MPa)	1.88					
	P	(mW)		100.51		79.56		N/A
	P1X1	(mW)		50.33		61.20		
	zs	(cm)			1.15			
	zb	(cm)					1.10	
	zMI	(cm)	1.86					
	zPII,a	(cm)	1.86					
	fawf	(MHz)	2.36	2.96	2.96	2.36	2.36	N/A
Other Information	prr	(Hz)	900.00					
	Srr	(Hz)	-					
	npps		1.00					
	$I_{pa.\alpha}$ at zPII,a	(W/cm^2)	139.51					
	Ispta,a at zPII,a or zSII,a	(mW/cm^2)	350.99					
	Ispta at zPII or zSII	(mW/cm^2)	428.44					
	pr at zPII	(MPa)	1.74					
Operating control conditions	B Frequency		-	-		-		N/A
	B Display Depth(mm)		-	-		-		N/A
	B Focus Pos(mm)		-	-		-		N/A
	B FOV		-	-		-		N/A
	B Line Density		-	-		-		N/A
	PW Frequency		Level 0	Level 1		Level 0		N/A
	PW SV Depth(mm)		30.00	160.00		30.00		N/A
	PW PRF(KHz)		0.90	5.90		0.90		N/A

Note:

1. (-) This index or parameter is not required for this operating mode.
2. (N/A) This transducer is not intended for cephalic examination.

1.2. Acoustic Output Table for L12-5Q

Acoustic Output Reporting Table for IEC60601-2-37

Transducer Model: L12-5Q

Operating Mode: B

Index label			MI	TIS		TIB		TIC
				At surface	Below surface	At surface	Below surface	
Maximum index value			1.28	1.33		1.33		N/A
Index Component Value				1.33	1.33	1.33	1.33	
Associated acoustic parameters	$p_{r.\alpha}$ at zMI	(MPa)	2.98					
	P	(mW)		51.52		51.52		N/A
	P1X1	(mW)		51.52		51.52		
	zs	(cm)			-			
	zb	(cm)					-	
	zMI	(cm)	0.81					
	zPII,a	(cm)	0.81					
	fawf	(MHz)	5.38	5.44	5.44	5.44	5.44	N/A
Other Information	prr	(Hz)	-					
	Srr	(Hz)	114.00					
	npps		1.00					
	$I_{pa.\alpha}$ at zPII,a	(W/cm^2)	342.55					
	Ispta,a at zPII,a or zSII,a	(mW/cm^2)	20.48					
	Ispta at zPII or zSII	(mW/cm^2)	20.91					
	pr at zPII	(MPa)	3.44					
Operating control conditions	B Frequency		Level H1	Level 0		Level 0		N/A
	B Display Depth(mm)		10.00	110.00		110.00		N/A
	B Focus Pos(mm)		7.50	45.00		45.00		N/A
	B FOV		Small	Full		Full		N/A
	B Line Density		Low	Low		Low		N/A

Note:

1. (-) This index or parameter is not required for this operating mode.
2. (N/A) This transducer is not intended for cephalic examination.

Acoustic Output Reporting Table for IEC60601-2-37

Transducer Model: L12-5Q

Operating Mode: B+M

Index label			MI	TIS		TIB		TIC
				At surface	Below surface	At surface	Below surface	
Maximum index value			1.38	0.70		0.91		N/A
Index Component Value				0.70	0.67	0.70	0.91	
Associated acoustic parameters	$p_{r.\alpha}$ at zMI	(MPa)	3.18					
	P	(mW)		26.56		26.56		N/A
	P1X1	(mW)		26.56		26.56		
	zs	(cm)			0.35			
	zb	(cm)					1.01	
	zMI	(cm)	0.76					
	zPII,a	(cm)	0.76					
	fawf	(MHz)	5.33	5.52	5.52	5.52	5.52	N/A
Other Information	prr	(Hz)	1000.00					
	Srr	(Hz)	-					
	npps		1.00					
	$I_{pa.\alpha}$ at zPII,a	(W/cm^2)	377.86					
	Ispta,a at zPII,a or zSII,a	(mW/cm^2)	88.91					
	Ispta at zPII or zSII	(mW/cm^2)	119.79					
	pr at zPII	(MPa)	3.59					
Operating control conditions	B Frequency		Level H0	Level 0		Level 0		N/A
	B Display Depth(mm)		10.00	110.00		110.00		N/A
	B Focus Pos(mm)		7.50	45.00		45.00		N/A
	B FOV		Small	Small		Small		N/A
	B Line Density		Low	Low		Low		N/A
	M Sweep Speed		Slow	Fast		Fast		N/A

Note:

1. (-) This index or parameter is not required for this operating mode.
2. (N/A) This transducer is not intended for cephalic examination.

Acoustic Output Reporting Table for IEC60601-2-37

Transducer Model: L12-5Q

Operating Mode: B+C/B+PDI/B+DPDI

Index label			MI	TIS		TIB		TIC
				At surface	Below surface	At surface	Below surface	
Maximum index value			1.16	0.80		0.80		N/A
Index Component Value				0.80	0.80	0.80	0.80	
Associated acoustic parameters	$p_{r.\alpha}$ at zMI	(MPa)	2.71					
	P	(mW)		31.42		31.42		N/A
	P1X1	(mW)		31.42		31.42		
	zs	(cm)			-			
	zb	(cm)					-	
	zMI	(cm)	1.11					
	zPII,a	(cm)	1.11					
	fawf	(MHz)	5.46	5.36	5.36	5.36	5.36	N/A
Other Information	prr	(Hz)	-					
	Srr	(Hz)	29.23					
	npps		1.00					
	$I_{pa.\alpha}$ at zPII,a	(W/cm^2)	299.85					
	Ispta,a at zPII,a or zSII,a	(mW/cm^2)	15.64					
	Ispta at zPII or zSII	(mW/cm^2)	15.83					
	pr at zPII	(MPa)	3.36					
Operating control conditions	B Frequency		Level 0	Level 0		Level 0		N/A
	B Display Depth(mm)		110.00	110.00		110.00		N/A
	B FOV		Small	Small		Small		N/A
	B Line Density		High	High		High		N/A
	C Frequency		Level 0	Level 0		Level 0		N/A
	C Left Edge of ROI(mm)		-4.75	-4.75		-4.75		N/A
	C Right Edge of ROI(mm)		4.75	4.75		4.75		N/A
	C Up Edge of ROI(mm)		40.50	40.50		40.50		N/A
	C Down Edge of ROI(mm)		49.50	49.50		49.50		N/A
	C Line Density		Low	Low		Low		N/A
	C PRF(KHz)		6.10	6.10		6.10		N/A

Note:

1. (-) This index or parameter is not required for this operating mode.
2. (N/A) This transducer is not intended for cephalic examination.

Acoustic Output Reporting Table for IEC60601-2-37

Transducer Model: L12-5Q

Operating Mode: PW/B+PW/B+C+PW

Index label			MI	TIS		TIB		TIC
				At surface	Below surface	At surface	Below surface	
Maximum index value			1.48	0.54		1.27		N/A
Index Component Value				0.49	0.54	0.26	1.27	
Associated acoustic parameters	$p_{r.\alpha}$ at zMI	(MPa)	3.21					
	P	(mW)		25.56		11.55		N/A
	P1X1	(mW)		21.06		11.55		
	zs	(cm)			0.30			
	zb	(cm)					0.71	
	zMI	(cm)	0.96					
	zPII,a	(cm)	0.96					
	fawf	(MHz)	4.70	4.72	4.72	4.70	4.70	N/A
Other Information	prr	(Hz)	426.30					
	Srr	(Hz)	-					
	npps		1.00					
	$I_{pa.\alpha}$ at zPII,a	(W/cm^2)	530.22					
	Ispta,a at zPII,a or zSII,a	(mW/cm^2)	176.80					
	Ispta at zPII or zSII	(mW/cm^2)	245.64					
	pr at zPII	(MPa)	3.59					
Operating control conditions	B Frequency		Level H0	Level 0		-		N/A
	B Display Depth(mm)		35.00	55.00		-		N/A
	B Focus Pos(mm)		30.00	50.00		-		N/A
	B FOV		Small	Small		-		N/A
	B Line Density		Low	Low		-		N/A
	PW Frequency		Level 0	Level 1		Level 0		N/A
	PW SV Depth(mm)		30.00	50.00		12.50		N/A
	PW PRF(KHz)		0.90	9.80		0.90		N/A

Note:

1. (-) This index or parameter is not required for this operating mode.
2. (N/A) This transducer is not intended for cephalic examination.

1.3. Acoustic Output Table for L17-7Q

Acoustic Output Reporting Table for IEC60601-2-37

Transducer Model: L17-7Q

Operating Mode: B

Index label			MI	TIS		TIB		TIC
				At surface	Below surface	At surface	Below surface	
Maximum index value			1.12	0.67		0.67		N/A
Index Component Value				0.67	0.67	0.67	0.67	
Associated acoustic parameters	$p_{r.\alpha}$ at zMI	(MPa)	3.57					
	P	(mW)		15.27		15.27		N/A
	P1X1	(mW)		15.27		15.27		
	zs	(cm)			-			
	zb	(cm)					-	
	zMI	(cm)	0.42					
	zPII,a	(cm)	0.42					
	fawf	(MHz)	10.08	9.16	9.16	9.16	9.16	N/A
Other Information	prr	(Hz)	-					
	Srr	(Hz)	99.00					
	npps		1.00					
	$I_{pa.\alpha}$ at zPII,a	(W/cm^2)	440.21					
	Ispta,a at zPII,a or zSII,a	(mW/cm^2)	9.92					
	Ispta at zPII or zSII	(mW/cm^2)	7.85					
	pr at zPII	(MPa)	3.71					
Operating control conditions	B Frequency		Level 2	Level 2		Level 2		N/A
	B Display Depth(mm)		15.00	50.00		50.00		N/A
	B Focus Pos(mm)		10.00	45.00		45.00		N/A
	B FOV		Med.	Small		Small		N/A
	B Line Density		Low	Low		Low		N/A

Note:

1. (-) This index or parameter is not required for this operating mode.
2. (N/A) This transducer is not intended for cephalic examination.

Acoustic Output Reporting Table for IEC60601-2-37

Transducer Model: L17-7Q

Operating Mode: B+M

Index label			MI	TIS		TIB		TIC
				At surface	Below surface	At surface	Below surface	
Maximum index value			1.19	0.55		0.55		N/A
Index Component Value				0.55	0.54	0.55	0.54	
Associated acoustic parameters	$p_{r.\alpha}$ at zMI	(MPa)	3.12					
	P	(mW)		10.24		10.24		N/A
	P1X1	(mW)		10.24		10.24		
	zs	(cm)			0.30			
	zb	(cm)					0.30	
	zMI	(cm)	0.96					
	zPII,a	(cm)	0.96					
	fawf	(MHz)	6.90	11.22	11.22	11.22	11.22	N/A
Other Information	prr	(Hz)	1000.00					
	Srr	(Hz)	-					
	npps		1.00					
	$I_{pa.\alpha}$ at zPII,a	(W/cm^2)	434.89					
	Ispta,a at zPII,a or zSII,a	(mW/cm^2)	154.93					
	Ispta at zPII or zSII	(mW/cm^2)	241.33					
	pr at zPII	(MPa)	3.80					
Operating control conditions	B Frequency		Level 1	Level H1		Level H1		N/A
	B Display Depth(mm)		110.00	50.00		50.00		N/A
	B Focus Pos(mm)		15.00	50.00		50.00		N/A
	B FOV		Small	Full		Full		N/A
	B Line Density		Low	Low		Low		N/A
	M Sweep Speed		Fast	Slow		Slow		N/A

Note:

1. (-) This index or parameter is not required for this operating mode.
2. (N/A) This transducer is not intended for cephalic examination.

Acoustic Output Reporting Table for IEC60601-2-37

Transducer Model: L17-7Q

Operating Mode: B+C/B+PDI/B+DPDI

Index label			MI	TIS		TIB		TIC
				At surface	Below surface	At surface	Below surface	
Maximum index value			0.81	0.69		0.69		N/A
Index Component Value				0.69	0.69	0.69	0.69	
Associated acoustic parameters	$p_{r.\alpha}$ at zMI	(MPa)	2.49					
	P	(mW)		17.98		17.98		N/A
	P1X1	(mW)		17.98		17.98		
	zs	(cm)			-			
	zb	(cm)					-	
	zMI	(cm)	1.12					
	zPII,a	(cm)	1.12					
	fawf	(MHz)	9.41	8.07	8.07	8.07	8.07	N/A
Other Information	prr	(Hz)	-					
	Srr	(Hz)	28.60					
	npps		1.00					
	$I_{pa.\alpha}$ at zPII,a	(W/cm^2)	187.28					
	Ispta,a at zPII,a or zSII,a	(mW/cm^2)	1.13					
	Ispta at zPII or zSII	(mW/cm^2)	1.13					
	pr at zPII	(MPa)	3.70					
Operating control conditions	B Frequency		Level 2	Level 2		Level 2		N/A
	B Display Depth(mm)		30.00	30.00		30.00		N/A
	B FOV		Small	Small		Small		N/A
	B Line Density		High	High		High		N/A
	C Frequency		Level 0	Level 0		Level 0		N/A
	C Left Edge of ROI(mm)		-4.75	-4.75		-4.75		N/A
	C Right Edge of ROI(mm)		4.75	4.75		4.75		N/A
	C Up Edge of ROI(mm)		13.00	13.00		13.00		N/A
	C Down Edge of ROI(mm)		22.00	22.00		22.00		N/A
	C Line Density		Low	Low		Low		N/A
	C PRF(KHz)		8.00	8.00		8.00		N/A

Note:

1. (-) This index or parameter is not required for this operating mode.
2. (N/A) This transducer is not intended for cephalic examination.

Acoustic Output Reporting Table for IEC60601-2-37

Transducer Model: L17-7Q

Operating Mode: PW/B+PW/B+C+PW

Index label			MI	TIS		TIB		TIC
				At surface	Below surface	At surface	Below surface	
Maximum index value			1.24	0.35		0.90		N/A
Index Component Value				0.35	0.29	0.35	0.90	
Associated acoustic parameters	$p_{r.\alpha}$ at zMI	(MPa)	4.03					
	P	(mW)		9.06		9.06		N/A
	P1X1	(mW)		9.06		9.06		
	zs	(cm)			0.30			
	zb	(cm)					1.01	
	zMI	(cm)	0.30					
	zPII,a	(cm)	0.30					
	fawf	(MHz)	10.56	8.06	8.06	8.06	8.06	N/A
Other Information	prr	(Hz)	-					
	Srr	(Hz)	13.84					
	npps		1.00					
	$I_{pa.\alpha}$ at zPII,a	(W/cm^2)	708.57					
	Ispta,a at zPII,a or zSII,a	(mW/cm^2)	1.64					
	Ispta at zPII or zSII	(mW/cm^2)	1.51					
	pr at zPII	(MPa)	4.70					
Operating control conditions	B Frequency		Level 2	-		-		N/A
	B Display Depth(mm)		10.00	-		-		N/A
	B Focus Pos(mm)		5.00	-		-		N/A
	B FOV		Small	-		-		N/A
	B Line Density		Low	-		-		N/A
	PW Frequency		Level 1	Level 1		Level 1		N/A
	PW SV Depth(mm)		5.00	22.50		22.50		N/A
	PW PRF(KHz)		14.70	3.70		3.70		N/A

Note:

1. (-) This index or parameter is not required for this operating mode.
2. (N/A) This transducer is not intended for cephalic examination.

1.4. Acoustic Output Table for P5-1Q

Acoustic Output Reporting Table for IEC60601-2-37

Transducer Model: P5-1Q

Operating Mode: B

Index label			MI	TIS		TIB		TIC
				At surface	Below surface	At surface	Below surface	
Maximum index value			1.35	0.59		0.59		N/A
Index Component Value				0.59	0.59	0.59	0.59	
Associated acoustic parameters	$p_{r.\alpha}$ at zMI	(MPa)	2.22					
	P	(mW)		73.95		73.95		N/A
	P1X1	(mW)		43.32		43.32		
	zs	(cm)			-			
	zb	(cm)					-	
	zMI	(cm)	4.77					
	zPII,a	(cm)	4.77					
	fawf	(MHz)	2.70	2.84	2.84	2.84	2.84	N/A
Other Information	prr	(Hz)	-					
	Srr	(Hz)	62.00					
	npps		1.00					
	$I_{pa.\alpha}$ at zPII,a	(W/cm^2)	206.10					
	Ispta,a at zPII,a or zSII,a	(mW/cm^2)	18.66					
	Ispta at zPII or zSII	(mW/cm^2)	18.21					
	pr at zPII	(MPa)	3.49					
Operating control conditions	B Frequency		Level 2	Level 2		Level 2		N/A
	B Display Depth(mm)		300.00	300.00		300.00		N/A
	B Focus Pos(mm)		80.00	200.00		200.00		N/A
	B FOV		Small	Med.		Med.		N/A
	B Line Density		Low	Low		Low		N/A

Note:

1. (-) This index or parameter is not required for this operating mode.
2. (N/A) This transducer is not intended for cephalic examination.

Acoustic Output Reporting Table for IEC60601-2-37

Transducer Model: P5-1Q

Operating Mode: B+M

Index label			MI	TIS		TIB		TIC
				At surface	Below surface	At surface	Below surface	
Maximum index value			1.24	0.69		1.57		N/A
Index Component Value				0.60	0.69	0.55	1.57	
Associated acoustic parameters	$p_{r.\alpha}$ at zMI	(MPa)	1.77					
	P	(mW)		74.45		85.90		N/A
	P1X1	(mW)		43.62		56.36		
	zs	(cm)			0.75			
	zb	(cm)					3.32	
	zMI	(cm)	3.57					
	zPII,a	(cm)	3.57					
	fawf	(MHz)	2.04	2.89	2.89	2.04	2.04	N/A
Other Information	prr	(Hz)	1000.00					
	Srr	(Hz)	-					
	npps		1.00					
	$I_{pa.\alpha}$ at zPII,a	(W/cm^2)	130.17					
	Ispta,a at zPII,a or zSII,a	(mW/cm^2)	101.55					
	Ispta at zPII or zSII	(mW/cm^2)	170.09					
	pr at zPII	(MPa)	2.26					
Operating control conditions	B Frequency		Level H1	Level 1		Level H1		N/A
	B Display Depth(mm)		40.00	200.00		40.00		N/A
	B Focus Pos(mm)		40.00	200.00		40.00		N/A
	B FOV		Small	Full		Small		N/A
	B Line Density		Low	Low		Low		N/A
	M Sweep Speed		Fast	Fast		Fast		N/A

Note:

1. (-) This index or parameter is not required for this operating mode.
2. (N/A) This transducer is not intended for cephalic examination.

Acoustic Output Reporting Table for IEC60601-2-37

Transducer Model: P5-1Q

Operating Mode: B+C/B+PDI/B+DPDI

Index label			MI	TIS		TIB		TIC
				At surface	Below surface	At surface	Below surface	
Maximum index value			1.19	0.65		0.65		N/A
Index Component Value				0.65	0.65	0.65	0.65	
Associated acoustic parameters	$p_{r.\alpha}$ at zMI	(MPa)	2.10					
	P	(mW)		73.69		73.69		N/A
	P1X1	(mW)		59.89		59.89		
	zs	(cm)			-			
	zb	(cm)					-	
	zMI	(cm)	4.32					
	zPII,a	(cm)	4.32					
	fawf	(MHz)	3.11	2.21	2.21	2.21	2.21	N/A
Other Information	prr	(Hz)	-					
	Srr	(Hz)	26.72					
	npps		1.00					
	$I_{pa.\alpha}$ at zPII,a	(W/cm^2)	179.54					
	Ispta,a at zPII,a or zSII,a	(mW/cm^2)	2.64					
	Ispta at zPII or zSII	(mW/cm^2)	2.48					
	pr at zPII	(MPa)	3.24					
Operating control conditions	B Frequency		Level 2	Level 2		Level 2		N/A
	B Display Depth(mm)		240.00	240.00		240.00		N/A
	B FOV		Small	Small		Small		N/A
	B Line Density		High	High		High		N/A
	C Frequency		Level 0	Level 1		Level 1		N/A
	C Left Edge of ROI(mm)		-12.50	-12.50		-12.50		N/A
	C Right Edge of ROI(mm)		12.50	12.50		12.50		N/A
	C Up Edge of ROI(mm)		63.50	193.50		193.50		N/A
	C Down Edge of ROI(mm)		72.50	202.50		202.50		N/A
	C Line Density		Low	Low		Low		N/A
	C PRF(KHz)		4.60	1.90		1.90		N/A

Note:

1. (-) This index or parameter is not required for this operating mode.
2. (N/A) This transducer is not intended for cephalic examination.

Acoustic Output Reporting Table for IEC60601-2-37

Transducer Model: P5-1Q

Operating Mode: PW/B+PW/B+C+PW

Index label			MI	TIS		TIB		TIC
				At surface	Below surface	At surface	Below surface	
Maximum index value			1.40	1.12		3.55		N/A
Index Component Value				0.98	1.12	0.82	3.55	
Associated acoustic parameters	$p_{r.\alpha}$ at zMI	(MPa)	1.98					
	P	(mW)		111.83		103.57		N/A
	P1X1	(mW)		93.19		86.31		
	zs	(cm)			0.35			
	zb	(cm)					3.22	
	zMI	(cm)	1.15					
	zPII,a	(cm)	1.15					
	fawf	(MHz)	2.00	2.21	2.21	2.00	2.00	N/A
Other Information	prr	(Hz)	900.00					
	Srr	(Hz)	-					
	npps		1.00					
	$I_{pa.\alpha}$ at zPII,a	(W/cm^2)	141.60					
	Ispta,a at zPII,a or zSII,a	(mW/cm^2)	283.33					
	Ispta at zPII or zSII	(mW/cm^2)	286.23					
	pr at zPII	(MPa)	1.71					
Operating control conditions	B Frequency		-	-		-		N/A
	B Display Depth(mm)		-	-		-		N/A
	B Focus Pos(mm)		-	-		-		N/A
	B FOV		-	-		-		N/A
	B Line Density		-	-		-		N/A
	PW Frequency		Level 0	Level 1		Level 0		N/A
	PW SV Depth(mm)		30.00	150.00		60.00		N/A
	PW PRF(KHz)		0.90	3.70		1.50		N/A

Note:

1. (-) This index or parameter is not required for this operating mode.
2. (N/A) This transducer is not intended for cephalic examination.

Acoustic Output Reporting Table for IEC60601-2-37

Transducer Model: P5-1Q

Operating Mode: CW

Index label			MI	TIS		TIB		TIC
				At surface	Below surface	At surface	Below surface	
Maximum index value			0.08	0.89		3.34		N/A
Index Component Value				0.78	0.89	0.78	3.34	
Associated acoustic parameters	$p_{r.\alpha}$ at zMI	(MPa)	0.11					
	P	(mW)		97.89		97.89		N/A
	P1X1	(mW)		81.57		81.57		
	zs	(cm)			0.37			
	zb	(cm)					2.81	
	zMI	(cm)	3.36					
	zPII,a	(cm)	3.36					
	fawf	(MHz)	2.00	2.00	2.00	2.00	2.00	N/A
Other Information	prr	(Hz)	200000.00					
	Srr	(Hz)	-					
	npps		1.00					
	$I_{pa.\alpha}$ at zPII,a	(W/cm^2)	0.44					
	Ispta,a at zPII,a or zSII,a	(mW/cm^2)	439.55					
	Ispta at zPII or zSII	(mW/cm^2)	699.45					
	pr at zPII	(MPa)	0.14					
Operating control conditions	CW Frequency		Level 0	Level 0		Level 0		N/A
	CW Focus Depth(mm)		40.00	40.00		40.00		N/A
	B Display Depth(mm)		180.00	180.00		180.00		N/A
	B FOV		Full	Full		Full		N/A

Note:

1. (-) This index or parameter is not required for this operating mode.
2. (N/A) This transducer is not intended for cephalic examination.

1.5. Acoustic Output Table for MC8-4Q

Acoustic Output Reporting Table for IEC60601-2-37

Transducer Model: MC8-4Q

Operating Mode: B

Index label			MI	*TIS*		*TIB*		*TIC*
				At surface	Below surface	At surface	Below surface	
Maximum index value			1.36	1.15		1.15		N/A
Index Component Value				1.15	1.15	1.15	1.15	
Associated acoustic parameters	$p_{r.\alpha}$ *at zMI*	*(MPa)*	3.01					
	P	*(mW)*		46.66		46.66		N/A
	P1X1	*(mW)*		46.66		46.66		
	zs	*(cm)*			-			
	zb	*(cm)*					-	
	zMI	*(cm)*	0.81					
	zPII,a	*(cm)*	0.81					
	fawf	*(MHz)*	4.93	5.16	5.16	5.16	5.16	N/A
Other Information	*prr*	*(Hz)*	-					
	Srr	*(Hz)*	40.00					
	npps		1.00					
	$I_{pa.\alpha}$ at zPII,a	(W/cm^2)	350.82					
	Ispta,a at zPII,a or zSII,a	(mW/cm^2)	20.69					
	Ispta at zPII or zSII	(mW/cm^2)	18.42					
	pr at zPII	*(MPa)*	3.22					
Operating control conditions	B Frequency		Level 1	Level 0		Level 0		N/A
	B Display Depth(mm)		110.00	20.00		20.00		N/A
	B Focus Pos(mm)		20.00	15.00		15.00		N/A
	B FOV		Full	Full		Full		N/A
	B Line Density		Low	Low		Low		N/A

Note:

1. (-) This index or parameter is not required for this operating mode.
2. (N/A) This transducer is not intended for cephalic examination.

Acoustic Output Reporting Table for IEC60601-2-37

Transducer Model: MC8-4Q

Operating Mode: B+M

Index label			MI	*TIS*		*TIB*		*TIC*
				At surface	Below surface	At surface	Below surface	
Maximum index value			1.31	0.74		0.89		N/A
Index Component Value				0.74	0.73	0.74	0.89	
Associated acoustic parameters	$p_{r.\alpha}$ *at zMI*	*(MPa)*	2.94					
	P	*(mW)*		30.54		30.54		N/A
	P1X1	*(mW)*		30.54		30.54		
	zs	*(cm)*			0.30			
	zb	*(cm)*					0.35	
	zMI	*(cm)*	0.40					
	zPII,a	*(cm)*	0.40					
	fawf	*(MHz)*	5.08	5.08	5.08	5.08	5.08	N/A
Other Information	*prr*	*(Hz)*	500.00					
	Srr	*(Hz)*	-					
	npps		1.00					
	$I_{pa.\alpha}$ at zPII,a	(W/cm^2)	374.48					
	Ispta,a at zPII,a or zSII,a	(mW/cm^2)	57.51					
	Ispta at zPII or zSII	(mW/cm^2)	61.36					
	pr at zPII	*(MPa)*	3.02					
Operating control conditions	B Frequency		Level 0	Level 0		Level 0		N/A
	B Display Depth(mm)		10.00	10.00		10.00		N/A
	B Focus Pos(mm)		10.00	10.00		10.00		N/A
	B FOV		Full	Full		Full		N/A
	B Line Density		Low	Low		Low		N/A
	M Sweep Speed		High	High		High		N/A

Note:

1. (-) This index or parameter is not required for this operating mode.
2. (N/A) This transducer is not intended for cephalic examination.

Acoustic Output Reporting Table for IEC60601-2-37

Transducer Model: MC8-4Q

Operating Mode: B+C/B+PDI/B+DPDI

Index label			MI	*TIS*		*TIB*		*TIC*
				At surface	Below surface	At surface	Below surface	
Maximum index value			0.97	0.55		0.55		N/A
Index Component Value				0.55	0.55	0.55	0.55	
Associated acoustic parameters	$p_{r.\alpha}$ *at zMI*	*(MPa)*	2.32					
	P	*(mW)*		26.33		26.33		N/A
	P1X1	*(mW)*		26.33		26.33		
	zs	*(cm)*			-			
	zb	*(cm)*					-	
	zMI	*(cm)*	0.80					
	zPII,a	*(cm)*	0.80					
	fawf	*(MHz)*	5.71	4.25	4.25	4.25	4.25	N/A
Other Information	*prr*	*(Hz)*	-					
	Srr	*(Hz)*	40.82					
	npps		1.00					
	$I_{pa.\alpha}$ at zPII,a	(W/cm^2)	199.14					
	Ispta,a at zPII,a or zSII,a	(mW/cm^2)	5.91					
	Ispta at zPII or zSII	(mW/cm^2)	5.12					
	pr at zPII	*(MPa)*	3.05					
Operating control conditions	B Frequency		Level 2	Level 2		Level 2		N/A
	B Display Depth(mm)		110.00	45.00		45.00		N/A
	B FOV		Small	Small		Small		N/A
	B Line Density		High	High		High		N/A
	C Frequency		Level 1	Level 0		Level 0		N/A
	C Left Edge of ROI(mm)		-13.00	-13.00		-13.00		N/A
	C Right Edge of ROI(mm)		13.00	13.00		13.00		N/A
	C Up Edge of ROI(mm)		15.50	35.50		35.50		N/A
	C Down Edge of ROI(mm)		24.50	44.50		44.50		N/A
	C Line Density		Low	Low		Low		N/A
	C PRF(KHz)		4.60	0.60		0.60		N/A

Note:

1. (-) This index or parameter is not required for this operating mode.
2. (N/A) This transducer is not intended for cephalic examination.

Acoustic Output Reporting Table for IEC60601-2-37

Transducer Model: MC8-4Q

Operating Mode: PW/B+PW/B+C+PW

Index label			MI	*TIS*		*TIB*		*TIC*
				At surface	Below surface	At surface	Below surface	
Maximum index value			1.29	0.64		1.51		N/A
Index Component Value				0.64	0.58	0.58	1.51	
Associated acoustic parameters	$p_{r.\alpha}$ *at zMI*	*(MPa)*	2.86					
	P	*(mW)*		27.71		28.47		N/A
	P1X1	*(mW)*		27.71		28.47		
	zs	*(cm)*			0.30			
	zb	*(cm)*					2.27	
	zMI	*(cm)*	0.70					
	zPII,a	*(cm)*	0.70					
	fawf	*(MHz)*	4.94	4.85	4.85	4.26	4.26	N/A
Other Information	*prr*	*(Hz)*	426.30					
	Srr	*(Hz)*	-					
	npps		1.00					
	$I_{pa.\alpha}$ at zPII,a	(W/cm^2)	390.57					
	Ispta,a at zPII,a or zSII,a	(mW/cm^2)	125.20					
	Ispta at zPII or zSII	(mW/cm^2)	138.57					
	pr at zPII	*(MPa)*	3.01					
Operating control conditions	B Frequency		Level 0	-		-		N/A
	B Display Depth(mm)		20.00	-		-		N/A
	B Focus Pos(mm)		15.00	-		-		N/A
	B FOV		Small	-		-		N/A
	B Line Density		Low	-		-		N/A
	PW Frequency		Level 1	Level 1		Level 0		N/A
	PW SV Depth(mm)		15.00	85.00		40.00		N/A
	PW PRF(KHz)		0.90	5.90		5.90		N/A

Note:

1. (-) This index or parameter is not required for this operating mode.
2. (N/A) This transducer is not intended for cephalic examination.

1.6. Acoustic Output Table for MC9-3TQ

Acoustic Output Reporting Table for IEC60601-2-37

Transducer Model: MC9-3TQ

Operating Mode: B

Index label			MI	*TIS*		*TIB*		*TIC*
				At surface	Below surface	At surface	Below surface	
Maximum index value			1.23	1.03		1.03		N/A
Index Component Value				1.03	1.03	1.03	1.03	
Associated acoustic parameters	$p_{r.\alpha}$ *at zMI*	*(MPa)*	2.67					
	P	*(mW)*		44.43		44.43		N/A
	P_{1X1}	*(mW)*		44.43		44.43		
	z_s	*(cm)*			-			
	z_b	*(cm)*					-	
	z_{MI}	*(cm)*	1.57					
	$z_{PII,a}$	*(cm)*	1.57					
	f_{awf}	*(MHz)*	4.69	4.88	4.88	4.88	4.88	N/A
Other Information	*prr*	*(Hz)*	-					
	Srr	*(Hz)*	40.00					
	n_{pps}		1.00					
	$I_{pa.\alpha}$ at $z_{PII,a}$	*(W/cm²)*	351.04					
	$I_{spta,a}$ *at* $z_{PII,a}$ *or* $z_{SII,a}$	*(mW/cm²)*	20.63					
	I_{spta} *at* z_{PII} *or* z_{SII}	*(mW/cm²)*	19.40					
	pr at z_{PII}	*(MPa)*	3.47					
Operating control conditions	B Frequency		Level 1	Level 0		Level 0		N/A
	B Display Depth(mm)		110.00	10.00		10.00		N/A
	B Focus Pos(mm)		30.00	5.00		5.00		N/A
	B FOV		Full	Full		Full		N/A
	B Line Density		Low	Low		Low		N/A

Note:

1. (-) This index or parameter is not required for this operating mode.
2. (N/A) This transducer is not intended for cephalic examination.

Acoustic Output Reporting Table for IEC60601-2-37

Transducer Model: MC9-3TQ

Operating Mode: B+M

Index label			MI	*TIS*		*TIB*		*TIC*
				At surface	Below surface	At surface	Below surface	
Maximum index value			1.35	0.76		0.91		N/A
Index Component Value				0.76	0.76	0.76	0.91	
Associated acoustic parameters	$p_{r.\alpha}$ *at zMI*	*(MPa)*	2.61					
	P	*(mW)*		32.94		32.94		N/A
	P_{1X1}	*(mW)*		32.94		32.94		
	z_s	*(cm)*			0.30			
	z_b	*(cm)*					0.35	
	z_{MI}	*(cm)*	1.36					
	$z_{PII,a}$	*(cm)*	1.36					
	f_{awf}	*(MHz)*	3.75	4.86	4.86	4.86	4.86	N/A
Other Information	*prr*	*(Hz)*	250.00					
	Srr	*(Hz)*	-					
	n_{pps}		1.00					
	$I_{pa.\alpha}$ at $z_{PII,a}$	(W/cm^2)	296.90					
	$I_{spta,a}$ *at* $z_{PII,a}$ *or* $z_{SII,a}$	(mW/cm^2)	50.49					
	I_{spta} *at* z_{PII} *or* z_{SII}	(mW/cm^2)	79.94					
	pr at z_{PII}	*(MPa)*	3.16					
Operating control conditions	B Frequency		Level 0	Level 0		Level 0		N/A
	B Display Depth(mm)		110.00	10.00		10.00		N/A
	B Focus Pos(mm)		27.50	10.00		10.00		N/A
	B FOV		Small	Full		Full		N/A
	B Line Density		Low	Low		Low		N/A
	M Sweep Speed		Med.	High		High		N/A

Note:

1. (-) This index or parameter is not required for this operating mode.
2. (N/A) This transducer is not intended for cephalic examination.

Acoustic Output Reporting Table for IEC60601-2-37

Transducer Model: MC9-3TQ

Operating Mode: B+C/B+PDI/B+DPDI

Index label			MI	*TIS*		*TIB*		*TIC*
				At surface	Below surface	At surface	Below surface	
Maximum index value			1.17	0.38		0.38		N/A
Index Component Value				0.38	0.38	0.38	0.38	
Associated acoustic parameters	$p_{r.\alpha}$ *at zMI*	*(MPa)*	2.85					
	P	*(mW)*		17.47		17.47		N/A
	P_{1X1}	*(mW)*		17.47		17.47		
	z_s	*(cm)*			-			
	z_b	*(cm)*					-	
	z_{MI}	*(cm)*	0.30					
	$z_{PII,a}$	*(cm)*	0.30					
	f_{awf}	*(MHz)*	5.91	4.45	4.45	4.45	4.45	N/A
Other Information	*prr*	*(Hz)*	-					
	Srr	*(Hz)*	37.90					
	n_{pps}		1.00					
	$I_{pa.\alpha}$ at $z_{PII,a}$	*(W/cm²)*	254.39					
	$I_{spta,a}$ *at* $z_{PII,a}$ *or* $z_{SII,a}$	*(mW/cm²)*	3.07					
	I_{spta} *at* z_{PII} *or* z_{SII}	*(mW/cm²)*	2.11					
	pr at z_{PII}	*(MPa)*	2.18					
Operating control conditions	B Frequency		Level 2	Level 2		Level 2		N/A
	B Display Depth(mm)		110.00	35.00		35.00		N/A
	B FOV		Small	Small		Small		N/A
	B Line Density		High	High		High		N/A
	C Frequency		Level 0	Level 1		Level 1		N/A
	C Left Edge of ROI(mm)		-20.00	-20.00		-20.00		N/A
	C Right Edge of ROI(mm)		20.00	20.00		20.00		N/A
	C Up Edge of ROI(mm)		5.50	25.50		25.50		N/A
	C Down Edge of ROI(mm)		14.50	34.50		34.50		N/A
	C Line Density		Low	Low		Low		N/A
	C PRF(KHz)		0.60	8.00		8.00		N/A

Note:

1. (-) This index or parameter is not required for this operating mode.
2. (N/A) This transducer is not intended for cephalic examination.

Acoustic Output Reporting Table for IEC60601-2-37

Transducer Model: MC9-3TQ

Operating Mode: PW/B+PW/B+C+PW

Index label			MI	*TIS*		*TIB*		*TIC*
				At surface	Below surface	At surface	Below surface	
Maximum index value			1.29	0.51		1.46		N/A
Index Component Value				0.51	0.48	0.29	1.46	
Associated acoustic parameters	$p_{r.\alpha}$ *at zMI*	*(MPa)*	2.47					
	P	*(mW)*		25.16		16.72		N/A
	P_{1X1}	*(mW)*		25.16		16.72		
	z_s	*(cm)*			0.30			
	z_b	*(cm)*					1.16	
	z_{MI}	*(cm)*	1.26					
	$z_{PII,a}$	*(cm)*	1.26					
	f_{awf}	*(MHz)*	3.68	4.40	4.40	3.68	3.68	N/A
Other Information	*prr*	*(Hz)*	426.30					
	Srr	*(Hz)*	-					
	n_{pps}		1.00					
	$I_{pa.\alpha}$ at $z_{PII,a}$	*(W/cm²)*	321.15					
	$I_{spta,a}$ *at* $z_{PII,a}$ *or* $z_{SII,a}$	*(mW/cm²)*	165.32					
	I_{spta} *at* z_{PII} *or* z_{SII}	*(mW/cm²)*	221.20					
	pr at z_{PII}	*(MPa)*	2.78					
Operating control conditions	B Frequency		Level 0	Level 0		-		N/A
	B Display Depth(mm)		25.00	75.00		-		N/A
	B Focus Pos(mm)		20.00	70.00		-		N/A
	B FOV		Small	Small		-		N/A
	B Line Density		Low	Low		-		N/A
	PW Frequency		Level 0	Level 1		Level 0		N/A
	PW SV Depth(mm)		20.00	70.00		15.00		N/A
	PW PRF(KHz)		0.90	14.70		3.70		N/A

Note:

1. (-) This index or parameter is not required for this operating mode.
2. (N/A) This transducer is not intended for cephalic examination.

1.7. Acoustic Output Table for P7-3Q

Acoustic Output Reporting Table for IEC60601-2-37

Transducer Model: P7-3Q

Operating Mode: B

Index label			MI	*TIS*		*TIB*		*TIC*
				At surface	Below surface	At surface	Below surface	
Maximum index value			1.35	1.04		1.04		N/A
Index Component Value				1.04	1.04	1.04	1.04	
Associated acoustic parameters	$p_{r.\alpha}$ *at zMI*	*(MPa)*	2.18					
	P	*(mW)*		57.59		57.59		N/A
	P_{1X1}	*(mW)*		56.24		56.24		
	z_s	*(cm)*			-			
	z_b	*(cm)*					-	
	z_{MI}	*(cm)*	3.07					
	$z_{PII,a}$	*(cm)*	3.07					
	f_{awf}	*(MHz)*	2.61	3.88	3.88	3.88	3.88	N/A
Other Information	*prr*	*(Hz)*	-					
	Srr	*(Hz)*	25.00					
	n_{pps}		1.00					
	$I_{pa.\alpha}$ at $z_{PII,a}$	*(W/cm²)*	118.97					
	$I_{spta,a}$ *at* $z_{PII,a}$ *or* $z_{SII,a}$	*(mW/cm²)*	16.08					
	I_{spta} *at* z_{PII} *or* z_{SII}	*(mW/cm²)*	13.84					
	pr at z_{PII}	*(MPa)*	2.48					
Operating control conditions	B Frequency		Level H0	Level 0		Level 0		N/A
	B Display Depth(mm)		180.00	80.00		80.00		N/A
	B Focus Pos(mm)		60.00	70.00		70.00		N/A
	B FOV		Med.	Full		Full		N/A
	B Line Density		Low	Low		Low		N/A

Note:

1. (-) This index or parameter is not required for this operating mode.
2. (N/A) This transducer is not intended for cephalic examination.

Acoustic Output Reporting Table for IEC60601-2-37

Transducer Model: P7-3Q

Operating Mode: B+M

Index label			MI	*TIS*		*TIB*		*TIC*
				At surface	Below surface	At surface	Below surface	
Maximum index value			1.25	0.90		1.22		N/A
Index Component Value				0.90	0.87	0.90	1.22	
Associated acoustic parameters	$p_{r.\alpha}$ *at zMI*	*(MPa)*	2.81					
	P	*(mW)*		37.63		37.63		N/A
	P_{1X1}	*(mW)*		37.63		37.63		
	z_s	*(cm)*			0.35			
	z_b	*(cm)*					1.06	
	z_{MI}	*(cm)*	1.11					
	$z_{PII,a}$	*(cm)*	1.11					
	f_{awf}	*(MHz)*	5.02	5.02	5.02	5.02	5.02	N/A
Other Information	*prr*	*(Hz)*	1000.00					
	Srr	*(Hz)*	-					
	n_{pps}		1.00					
	$I_{pa.\alpha}$ at $z_{PII,a}$	(W/cm^2)	286.87					
	$I_{spta,a}$ *at* $z_{PII,a}$ *or* $z_{SII,a}$	(mW/cm^2)	131.72					
	I_{spta} *at* z_{PII} *or* z_{SII}	(mW/cm^2)	160.15					
	pr at z_{PII}	*(MPa)*	3.10					
Operating control conditions	B Frequency		Level 1	Level 1		Level 1		N/A
	B Display Depth(mm)		20.00	20.00		20.00		N/A
	B Focus Pos(mm)		20.00	20.00		20.00		N/A
	B FOV		Small	Small		Small		N/A
	B Line Density		Low	Low		Low		N/A
	M Sweep Speed		Fast	Fast		Fast		N/A

Note:

1. (-) This index or parameter is not required for this operating mode.
2. (N/A) This transducer is not intended for cephalic examination.

Acoustic Output Reporting Table for IEC60601-2-37

Transducer Model: P7-3Q

Operating Mode: B+C/B+PDI/B+DPDI

Index label			MI	*TIS*		*TIB*		*TIC*
				At surface	Below surface	At surface	Below surface	
Maximum index value			1.17	0.99		0.99		N/A
Index Component Value				0.99	0.99	0.99	0.99	
Associated acoustic parameters	$p_{r.\alpha}$ *at zMI*	*(MPa)*	2.61					
	P	*(mW)*		51.88		51.88		N/A
	P_{1X1}	*(mW)*		51.88		51.88		
	z_s	*(cm)*			-			
	z_b	*(cm)*					-	
	z_{MI}	*(cm)*	1.16					
	$z_{PII,a}$	*(cm)*	1.16					
	f_{awf}	*(MHz)*	4.97	3.81	3.81	3.81	3.81	N/A
Other Information	*prr*	*(Hz)*	-					
	Srr	*(Hz)*	35.21					
	n_{pps}		1.00					
	$I_{pa.\alpha}$ at $z_{PII,a}$	*(W/cm²)*	276.56					
	$I_{spta,a}$ *at* $z_{PII,a}$ *or* $z_{SII,a}$	*(mW/cm²)*	6.67					
	I_{spta} *at* z_{PII} *or* z_{SII}	*(mW/cm²)*	4.98					
	pr at z_{PII}	*(MPa)*	2.87					
Operating control conditions	B Frequency		Level 2	Level 2		Level 2		N/A
	B Display Depth(mm)		180.00	40.00		40.00		N/A
	B FOV		Small	Small		Small		N/A
	B Line Density		High	High		High		N/A
	C Frequency		Level 1	Level 1		Level 1		N/A
	C Left Edge of ROI(mm)		-12.50	-12.50		-12.50		N/A
	C Right Edge of ROI(mm)		12.50	12.50		12.50		N/A
	C Up Edge of ROI(mm)		15.50	25.50		25.50		N/A
	C Down Edge of ROI(mm)		24.50	34.50		34.50		N/A
	C Line Density		Low	Low		Low		N/A
	C PRF(KHz)		0.60	4.60		4.60		N/A

Note:

1. (-) This index or parameter is not required for this operating mode.
2. (N/A) This transducer is not intended for cephalic examination.

Acoustic Output Reporting Table for IEC60601-2-37

Transducer Model: P7-3Q

Operating Mode: PW/B+PW/B+C+PW

Index label			MI	*TIS*		*TIB*		*TIC*
				At surface	Below surface	At surface	Below surface	
Maximum index value			1.40	0.90		2.05		N/A
Index Component Value				0.90	0.84	0.90	2.05	
Associated acoustic parameters	$p_{r.\alpha}$ *at zMI*	*(MPa)*	2.69					
	P	*(mW)*		50.62		50.62		N/A
	P_{1X1}	*(mW)*		50.62		50.62		
	z_s	*(cm)*			0.30			
	z_b	*(cm)*					2.16	
	z_{MI}	*(cm)*	2.01					
	$z_{PII,a}$	*(cm)*	2.01					
	f_{awf}	*(MHz)*	3.68	3.73	3.73	3.73	3.73	N/A
Other Information	*prr*	*(Hz)*	-					
	Srr	*(Hz)*	12.50					
	n_{pps}		1.00					
	$I_{pa.\alpha}$ at $z_{PII,a}$	(W/cm^2)	204.10					
	$I_{spta,a}$ *at* $z_{PII,a}$ *or* $z_{SII,a}$	(mW/cm^2)	15.35					
	I_{spta} *at* z_{PII} *or* z_{SII}	(mW/cm^2)	13.47					
	pr at z_{PII}	*(MPa)*	3.42					
Operating control conditions	B Frequency		Level 0	-		-		N/A
	B Display Depth(mm)		110.00	-		-		N/A
	B Focus Pos(mm)		100.00	-		-		N/A
	B FOV		Small	-		-		N/A
	B Line Density		Low	-		-		N/A
	PW Frequency		Level 0	Level 1		Level 1		N/A
	PW SV Depth(mm)		100.00	140.00		140.00		N/A
	PW PRF(KHz)		0.90	1.50		1.50		N/A

Note:

1. (-) This index or parameter is not required for this operating mode.
2. (N/A) This transducer is not intended for cephalic examination.

Acoustic Output Reporting Table for IEC60601-2-37

Transducer Model: P7-3Q

Operating Mode: CW

Index label			MI	*TIS*		*TIB*		*TIC*
				At surface	Below surface	At surface	Below surface	
Maximum index value			0.06	0.54		2.28		N/A
Index Component Value				0.54	0.51	0.54	2.28	
Associated acoustic parameters	$p_{r.\alpha}$ *at zMI*	*(MPa)*	0.11					
	P	*(mW)*		38.00		38.00		N/A
	P_{1X1}	*(mW)*		38.00		38.00		
	z_s	*(cm)*			0.30			
	z_b	*(cm)*					0.34	
	z_{MI}	*(cm)*	0.34					
	$z_{PII,a}$	*(cm)*	0.34					
	f_{awf}	*(MHz)*	3.00	3.00	3.00	3.00	3.00	N/A
Other Information	*prr*	*(Hz)*	200000.00					
	Srr	*(Hz)*	-					
	n_{pps}		1.00					
	$I_{pa.\alpha}$ at $z_{PII,a}$	*(W/cm²)*	0.42					
	$I_{spta,a}$ *at* $z_{PII,a}$ *or* $z_{SII,a}$	*(mW/cm²)*	415.13					
	I_{spta} *at* z_{PII} *or* z_{SII}	*(mW/cm²)*	445.71					
	pr at z_{PII}	*(MPa)*	0.11					
Operating control conditions	CW Focus Pos(mm)		Level 0	Level 0		Level 0		N/A
	CW Display Depth(mm)		160.00	160.00		160.00		N/A
	CW Frequency		100.5	100.5		100.5		N/A

Note:

1. (-) This index or parameter is not required for this operating mode.
2. (N/A) This transducer is not intended for cephalic examination.

1.8. Acoustic Output Table for VEL8-3WQ

Acoustic Output Reporting Table for IEC60601-2-37

Transducer Model: VEL8-3WQ

Operating Mode: B

Index label			MI	*TIS*		*TIB*		*TIC*
				At surface	Below surface	At surface	Below surface	
Maximum index value			1.45	1.70		1.70		N/A
Index Component Value				1.70	1.70	1.70	1.70	
Associated acoustic parameters	$p_{r.\alpha}$ *at zMI*	*(MPa)*	3.02					
	P	*(mW)*		81.95		81.95		N/A
	P_{1X1}	*(mW)*		81.95		81.95		
	z_s	*(cm)*			-			
	z_b	*(cm)*					-	
	z_{MI}	*(cm)*	0.61					
	$z_{PII,a}$	*(cm)*	0.61					
	f_{awf}	*(MHz)*	4.36	4.36	4.36	4.36	4.36	N/A
Other Information	*prr*	*(Hz)*	-					
	Srr	*(Hz)*	60.00					
	n_{pps}		1.00					
	$I_{pa.\alpha}$ at $z_{PII,a}$	*(W/cm²)*	376.03					
	$I_{spta,a}$ *at* $z_{PII,a}$ *or* $z_{SII,a}$	*(mW/cm²)*	19.73					
	I_{spta} *at* z_{PII} *or* z_{SII}	*(mW/cm²)*	15.96					
	pr at z_{PII}	*(MPa)*	3.10					
Operating control conditions	B Frequency		Level 0	Level 0		Level 0		N/A
	B Display Depth(mm)		20.00	20.00		20.00		N/A
	B Focus Pos(mm)		15.00	15.00		15.00		N/A
	B FOV		Full	Full		Full		N/A
	B Line Density		Low	Low		Low		N/A

Note:

1. (-) This index or parameter is not required for this operating mode.
2. (N/A) This transducer is not intended for cephalic examination.

Acoustic Output Reporting Table for IEC60601-2-37

Transducer Model: VEL8-3WQ

Operating Mode: B+M

Index label			MI	*TIS*		*TIB*		*TIC*
				At surface	Below surface	At surface	Below surface	
Maximum index value			1.39	1.45		1.49		N/A
Index Component Value				1.45	1.45	1.45	1.49	
Associated acoustic parameters	$p_{r.\alpha}$ *at zMI*	*(MPa)*	2.82					
	P	*(mW)*		74.98		74.98		N/A
	P_{1X1}	*(mW)*		74.98		74.98		
	z_s	*(cm)*			0.40			
	z_b	*(cm)*					1.21	
	z_{MI}	*(cm)*	0.30					
	$z_{PII,a}$	*(cm)*	0.30					
	f_{awf}	*(MHz)*	4.12	4.07	4.05	4.07	4.05	N/A
Other Information	*prr*	*(Hz)*	125.00					
	Srr	*(Hz)*	-					
	n_{pps}		1.00					
	$I_{pa.\alpha}$ at $z_{PII,a}$	*(W/cm²)*	248.23					
	$I_{spta,a}$ *at* $z_{PII,a}$ *or* $z_{SII,a}$	*(mW/cm²)*	13.01					
	I_{spta} *at* z_{PII} *or* z_{SII}	*(mW/cm²)*	12.49					
	pr at z_{PII}	*(MPa)*	2.82					
Operating control conditions	B Frequency		Level H1	Level H1		Level H1		N/A
	B Display Depth(mm)		20.00	30.00		30.00		N/A
	B Focus Pos(mm)		5.00	22.50		22.50		N/A
	B FOV		Full	Full		Full		N/A
	B Line Density		Low	Low		Low		N/A
	M Sweep Speed		Low	Slow		Slow		N/A

Note:

1. (-) This index or parameter is not required for this operating mode.
2. (N/A) This transducer is not intended for cephalic examination.

Acoustic Output Reporting Table for IEC60601-2-37

Transducer Model: VEL8-3WQ

Operating Mode: B+C/B+PDI/B+DPDI

Index label			MI	*TIS*		*TIB*		*TIC*
				At surface	Below surface	At surface	Below surface	
Maximum index value			0.59	0.74		0.74		N/A
Index Component Value				0.74	0.74	0.74	0.74	
Associated acoustic parameters	$p_{r.\alpha}$ *at zMI*	*(MPa)*	1.17					
	P	*(mW)*		39.21		39.21		N/A
	P_{1X1}	*(mW)*		39.21		39.21		
	zs	*(cm)*			-			
	zb	*(cm)*					-	
	z_{MI}	*(cm)*	0.30					
	$z_{PII,a}$	*(cm)*	0.30					
	f_{awf}	*(MHz)*	3.95	3.95	3.95	3.95	3.95	N/A
Other Information	*prr*	*(Hz)*	-					
	Srr	*(Hz)*	440.37					
	n_{pps}		1.00					
	$I_{pa.\alpha}$ at $z_{PII,a}$	(W/cm^2)	45.58					
	$I_{spta,a}$ *at* $z_{PII,a}$ *or* $z_{SII,a}$	(mW/cm^2)	33.75					
	I_{spta} *at* z_{PII} *or* z_{SII}	(mW/cm^2)	22.69					
	pr at z_{PII}	*(MPa)*	1.10					
Operating control conditions	B Frequency		Level 2	Level 2		Level 2		N/A
	B Display Depth(mm)		180.00	180.00		180.00		N/A
	B FOV		Small	Small		Small		N/A
	B Line Density		High	High		High		N/A
	C Frequency		Level 1	Level 1		Level 1		N/A
	C Left Edge of ROI(mm)		-7.20	-7.20		-7.20		N/A
	C Right Edge of ROI(mm)		7.20	7.20		7.20		N/A
	C Up Edge of ROI(mm)		0.50	0.50		0.50		N/A
	C Down Edge of ROI(mm)		9.50	9.50		9.50		N/A
	C Line Density		Low	Low		Low		N/A
	C PRF(KHz)		0.60	0.60		0.60		N/A

Note:

1. (-) This index or parameter is not required for this operating mode.
2. (N/A) This transducer is not intended for cephalic examination.

Acoustic Output Reporting Table for IEC60601-2-37

Transducer Model: VEL8-3WQ

Operating Mode: PW/B+PW/B+C+PW

Index label			MI	*TIS*		*TIB*		*TIC*
				At surface	Below surface	At surface	Below surface	
Maximum index value			1.50	1.10		1.93		N/A
Index Component Value				0.53	1.10	0.54	1.93	
Associated acoustic parameters	$p_{r.\alpha}$ *at zMI*	*(MPa)*	2.98					
	P	*(mW)*		81.81		26.85		N/A
	P_{1X1}	*(mW)*		28.41		26.85		
	z_s	*(cm)*			1.21			
	z_b	*(cm)*					0.30	
	z_{MI}	*(cm)*	0.55					
	$z_{PII,a}$	*(cm)*	0.55					
	f_{awf}	*(MHz)*	3.92	3.94	3.94	3.96	3.96	N/A
Other Information	*prr*	*(Hz)*	900.00					
	Srr	*(Hz)*	-					
	n_{pps}		1.00					
	$I_{pa.\alpha}$ at $z_{PII,a}$	(W/cm^2)	355.40					
	$I_{spta,a}$ *at* $z_{PII,a}$ *or* $z_{SII,a}$	(mW/cm^2)	300.75					
	I_{spta} *at* z_{PII} *or* z_{SII}	(mW/cm^2)	317.71					
	pr at z_{PII}	*(MPa)*	2.97					
Operating control conditions	B Frequency		-	-		Level 2		N/A
	B Display Depth(mm)		-	-		20.00		N/A
	B Focus Pos(mm)		-	-		5.00		N/A
	B FOV		-	-		Small		N/A
	B Line Density		-	-		Low		N/A
	PW Frequency		Level 1	Level 1		Level 1		N/A
	PW SV Depth(mm)		15.00	120.00		5.00		N/A
	PW PRF(KHz)		0.90	14.70		14.70		N/A

Note:

1. (-) This index or parameter is not required for this operating mode.
2. (N/A) This transducer is not intended for cephalic examination.

1.9. Acoustic Output Table for VEL12-5Q

Acoustic Output Reporting Table for IEC60601-2-37

Transducer Model: VEL12-5Q

Operating Mode: B

Index label			MI	*TIS*		*TIB*		*TIC*
				At surface	Below surface	At surface	Below surface	
Maximum index value			1.15	1.10		1.10		N/A
Index Component Value				1.10	1.10	1.10	1.10	
Associated acoustic parameters	$p_{r.\alpha}$ *at zMI*	*(MPa)*	2.69					
	P	*(mW)*		33.44		33.44		N/A
	P_{1X1}	*(mW)*		33.44		33.44		
	z_s	*(cm)*			-			
	z_b	*(cm)*					-	
	z_{MI}	*(cm)*	1.26					
	$z_{PII,a}$	*(cm)*	1.26					
	f_{awf}	*(MHz)*	5.42	6.89	6.89	6.89	6.89	N/A
Other Information	*prr*	*(Hz)*	-					
	Srr	*(Hz)*	29.00					
	n_{pps}		1.00					
	$I_{pa.\alpha}$ at $z_{PII,a}$	*(W/cm²)*	286.67					
	$I_{spta,a}$ *at* $z_{PII,a}$ *or* $z_{SII,a}$	*(mW/cm²)*	11.52					
	I_{spta} *at* z_{PII} *or* z_{SII}	*(mW/cm²)*	11.06					
	pr at z_{PII}	*(MPa)*	3.25					
Operating control conditions	B Frequency		Level H1	Level 1		Level 1		N/A
	B Display Depth(mm)		110.00	110.00		110.00		N/A
	B Focus Pos(mm)		20.00	75.00		75.00		N/A
	B FOV		Small	Full		Full		N/A
	B Line Density		Low	Low		Low		N/A

Note:

1. (-) This index or parameter is not required for this operating mode.
2. (N/A) This transducer is not intended for cephalic examination.

Acoustic Output Reporting Table for IEC60601-2-37

Transducer Model: VEL12-5Q

Operating Mode: B+M

Index label			MI	*TIS*		*TIB*		*TIC*
				At surface	Below surface	At surface	Below surface	
Maximum index value			1.09	0.69		0.69		N/A
Index Component Value				0.69	0.69	0.69	0.69	
Associated acoustic parameters	$p_{r.\alpha}$ *at zMI*	*(MPa)*	2.93					
	P	*(mW)*		21.89		21.89		N/A
	P_{1X1}	*(mW)*		21.89		21.89		
	z_s	*(cm)*			0.30			
	z_b	*(cm)*					0.35	
	z_{MI}	*(cm)*	0.30					
	$z_{PII,a}$	*(cm)*	0.30					
	f_{awf}	*(MHz)*	7.24	6.60	6.60	6.60	6.60	N/A
Other Information	*prr*	*(Hz)*	125.00					
	Srr	*(Hz)*	-					
	n_{pps}		1.00					
	$I_{pa.\alpha}$ at $z_{PII,a}$	(W/cm^2)	351.92					
	$I_{spta,a}$ *at* $z_{PII,a}$ *or* $z_{SII,a}$	(mW/cm^2)	10.10					
	I_{spta} *at* z_{PII} *or* z_{SII}	(mW/cm^2)	9.97					
	pr at z_{PII}	*(MPa)*	2.92					
Operating control conditions	B Frequency		Level 0	Level 1		Level 1		N/A
	B Display Depth(mm)		10.00	75.00		75.00		N/A
	B Focus Pos(mm)		7.50	75.00		75.00		N/A
	B FOV		Small	Full		Full		N/A
	B Line Density		Low	Low		Low		N/A
	M Sweep Speed		Low	Slow		Slow		N/A

Note:

1. (-) This index or parameter is not required for this operating mode.
2. (N/A) This transducer is not intended for cephalic examination.

Acoustic Output Reporting Table for IEC60601-2-37

Transducer Model: VEL12-5Q

Operating Mode: B+C/B+PDI/B+DPDI

Index label			MI	*TIS*		*TIB*		*TIC*
				At surface	Below surface	At surface	Below surface	
Maximum index value			0.60	0.50		0.50		N/A
Index Component Value				0.50	0.50	0.50	0.50	
Associated acoustic parameters	$p_{r.\alpha}$ *at zMI*	*(MPa)*	1.78					
	P	*(mW)*		17.09		17.09		N/A
	P_{1X1}	*(mW)*		17.09		17.09		
	z_s	*(cm)*			-			
	z_b	*(cm)*					-	
	z_{MI}	*(cm)*	0.48					
	$z_{PII,a}$	*(cm)*	0.48					
	f_{awf}	*(MHz)*	8.84	5.69	5.69	5.69	5.69	N/A
Other Information	*prr*	*(Hz)*	-					
	Srr	*(Hz)*	38.40					
	n_{pps}		1.00					
	$I_{pa.\alpha}$ at $z_{PII,a}$	*(W/cm²)*	152.91					
	$I_{spta,a}$ *at* $z_{PII,a}$ *or* $z_{SII,a}$	*(mW/cm²)*	1.49					
	I_{spta} *at* z_{PII} *or* z_{SII}	*(mW/cm²)*	1.23					
	pr at z_{PII}	*(MPa)*	2.28					
Operating control conditions	B Frequency		Level 2	Level 2		Level 2		N/A
	B Display Depth(mm)		110.00	110.00		110.00		N/A
	B FOV		Small	Small		Small		N/A
	B Line Density		High	High		High		N/A
	C Frequency		Level 0	Level 1		Level 1		N/A
	C Left Edge of ROI(mm)		-4.75	-4.75		-4.75		N/A
	C Right Edge of ROI(mm)		4.75	4.75		4.75		N/A
	C Up Edge of ROI(mm)		5.50	55.50		55.50		N/A
	C Down Edge of ROI(mm)		14.50	64.50		64.50		N/A
	C Line Density		Low	Low		Low		N/A
	C PRF(KHz)		0.60	8.00		8.00		N/A

Note:

1. (-) This index or parameter is not required for this operating mode.
2. (N/A) This transducer is not intended for cephalic examination.

Acoustic Output Reporting Table for IEC60601-2-37

Transducer Model: VEL12-5Q

Operating Mode: PW/B+PW/B+C+PW

Index label			MI	*TIS*		*TIB*		*TIC*
				At surface	Below surface	At surface	Below surface	
Maximum index value			1.23	0.66		0.96		N/A
Index Component Value				0.40	0.66	0.28	0.96	
Associated acoustic parameters	$p_{r.\alpha}$ *at zMI*	*(MPa)*	3.16					
	P	*(mW)*		27.23		10.45		N/A
	P_{1X1}	*(mW)*		14.64		10.45		
	z_s	*(cm)*			0.30			
	z_b	*(cm)*					1.06	
	z_{MI}	*(cm)*	1.27					
	$z_{PII,a}$	*(cm)*	1.27					
	f_{awf}	*(MHz)*	6.65	5.71	5.71	5.70	5.70	N/A
Other Information	*prr*	*(Hz)*	-					
	Srr	*(Hz)*	12.50					
	n_{pps}		1.00					
	$I_{pa.\alpha}$ at $z_{PII,a}$	*(W/cm²)*	402.24					
	$I_{spta,a}$ *at* $z_{PII,a}$ *or* $z_{SII,a}$	*(mW/cm²)*	2.31					
	I_{spta} *at* z_{PII} *or* z_{SII}	*(mW/cm²)*	2.17					
	pr at z_{PII}	*(MPa)*	4.10					
Operating control conditions	B Frequency		Level 0	-		-		N/A
	B Display Depth(mm)		25.00	-		-		N/A
	B Focus Pos(mm)		20.00	-		-		N/A
	B FOV		Small	-		-		N/A
	B Line Density		Low	-		-		N/A
	PW Frequency		Level 0	Level 1		Level 1		N/A
	PW SV Depth(mm)		20.00	75.00		17.50		N/A
	PW PRF(KHz)		0.90	14.70		0.90		N/A

Note:

1. (-) This index or parameter is not required for this operating mode.
2. (N/A) This transducer is not intended for cephalic examination.

2 Maximum Transducer SurfaceTemperature

In simulated use, the maximum surface temperatures of the transducers is:

- C5-2Q: 41.45 °C in PW/B+PW/B+C+PW mode.
- L17-7Q: 41.05°C in B mode.
- P5-1Q: 41.22°C in PW/B+PW/B+C+PW mode; 41.32°C in CW mode.
- VEL8-3WQ: 41.12°C in B mode; 41.07°C in PW/B+PW/B+C+PW mode.
- VEL12-5Q: 41.12°C in PW/B+PW/B+C+PW mode

All other imaging modes and transducers have a steady-state surface temperature below 41°C.

Uncertainty of temperature rise test：

Uncertainty of temperature rise test in simulate use: $\overline{X}$=7.73°C, U=0.26°C, K=2.

Uncertainty of temperature rise test in still air: $\overline{X}$=14.06°C, U=0.24°C, K=2.

The system limits patient contact temperature to 43°C, and the acoustic output below the maximum acoustic output limits for track 3. A power-protection circuit is used to prevent over-current conditions. If the power monitor protection circuit detects an over-current condition, then the drive current to the transducer is cut off promptly, preventing overheating of the transducer surface and limiting acoustic output. Validation of the power protection circuit is performed during normal operation. In single fault condition, when an abnormally large current or voltage is detected the system will automatically limit the current or voltage.

3 Formulas

Table 3-1 Generic Calculation Formulas

No.	Generic Calculation items	Formula
1. B-mode Generic Calculations		
1.1	Volume	Volume(cm^3)=Pi × D1(cm) ×D2(cm) ×D3(cm) / 6
1.2	Stenosis	%Stenosis = |(D1-D2)|/Max(D1, D2) ×100% %Stenosis = |(A1-A2)|/Max(A1, A2) × 100%.
2. Doppler Generic Calculations		
2.1	PG (Pressure Gradient)	PG (mmHg) = 4x(Vel(m/s)^2)
2.2	RI (Resistive Index)	RI= (PS-ED)/PS
2.3	PI (Pulse Index)	PI = (PS-ED)/TAMax
2.4	S/D	S/D = PS/ED
2.5	HR (Heart Rate)	HR (bpm) = 60(s) x N(beats) / Time (s)
2.6	ΔV	ΔV = V2-V1
2.7	Acceleration	Accel = (V2-V1)/(T2-T1)
2.8	PHT (Pressure Half Time)	PHT = (1-0.707) xV1x(T2-T1) / (V1-V2)
2.9	TAMax(Time Averaged Maximum Velocity)	TAMax = $\int_{Ta}^{Tb} V(t)dt \ / \ (Tb-Ta)$ (cm/s or m/s)
2.10	PGmax	PGmax = 4x(PS(m/s)^2) (mmHg)
2.11	PGmean	PGmean = $\int_{Ta}^{Tb} 4(V(t)(m/s))^2 dt \ / \ (Tb-Ta)$ (mmHg)
2.12	VTI (Velocity-time Integral)	VTI = $\int_{Ta}^{Tb} V(t)dt$ (m)

No.	Generic Calculation items	Formula
3. M-mode Generic Calculations		
3.1	Slope	Slope = Distance / Time
3.2	HR (Heart Rate)	HR (bpm) = 60(s) x N(beats) / Time (s)

Table 3-2 Abdominal Calculation Formulas

No.	Calculation Items	Description	Formula
1	Renal-Vol	Renal Volume	Renal-Vol(cm3) = 0.49×L(cm)×W(cm)×H(cm)

Table 3-3 Reproduction Calculation Formulas

No.	Calculation Items	Description	Formula
1	UT-Vol	Uterus volume	UT-Vol(cm^3) = 0.523×UT-L(cm)×UT-W(cm)×UT-H(cm)
2	UT-L/CX-L	Uterus length / Cervix length	UT-L/CX-L = UT-L(cm)/CX-L(cm)
3	OV-Vol	Ovary volume	OV-Vol(cm^3) = 0.523×OV-L(cm)×OV-W(cm)×OV-H(cm)
4	Fol-Vol	Follicle volume	Fol-Vol(ml) = π/6×FOL-L(cm)×FOL-W(cm)×FOL-H(cm)
5	Fol-Mean	Follicle Mean Diameter	Fol.Mean(cm) = (sum of two distances)/2, when measure any two of the three distances. Fol.Mean(cm) = (FOL-L(cm)+FOL-W(cm)+FOL-H(cm))/3, when measure these three distances.

Table 3-4 Obesteric Calculation Formulas

No.	Calculation Items	Formula
GA Formulas for Canine species:		
1	CRL GA	GA (day) =(3*CRL(cm))+27, before 40 days
2	GSD GA	GA (day) =(6*GSD(cm))+20, before 40 days
3	HD GA	GA (day) =(15*HD(cm))+20, after 40 days
4	BD GA	GA (day) =(7*BD(cm))+29, after 40 days
5	HD& BD GA	GA (day) =(6*HD(cm))+(3*BD(cm))+30, after 40 days
GA Formulas for Feline species:		
1	HD GA	GA (day) =(25*HD(cm))+3
2	BD GA	GA (day) =(11*BD(cm))+21
GA Formulas for Bovine species:		
1	CRL GA	GA (day) =InCRL(cm) * 16.73 + 27.5, before 50 days
2	TD GA	GA (day) =InTD(cm) * 37.21 + 39.7, after 50 days
3	HD GA	GA (day) =InHD(cm) * 45.23 + 37.7, after 50 days
GA Formulas for Ovine species:		
1	CRL GA	GA (day) =14.05 + 1.16 * CRL(cm) – 0.012 * CRL(cm)^2, 20~40 days
2	BPD GA	GA (day) =21.4 + 1.85 * BPD(cm), after 40 days
GA Formulas for Equine species:		
1	GSD-H GA	GA (day) =(GSD-H(cm)+0.55)/ 0.15
2	GSD-V GA	GA (day) =(GSD-V(cm)+0.15)/ 0.14

Table 3-5 Cardiac Calculation Formulas

No.	Calculation Items		Description	Formula
1	LV Simpson	SV(A4C)	Stroke Volume	SV(ml) = EDV(ml) - ESV(ml)
		EF(A4C)	Ejection Fraction	EF = SV(ml) / EDV(ml)
		CO(A4C)	Cardiac Output	CO(l/min) = SV(ml) × HR(bpm) / 1000

No.	Calculation Items		Description	Formula
		CI(A4C)	Cardiac Output Index	CI = CO(l/min) / BSA(m^2)
		SI(A4C)	Stroke Volume Index	SI= SV(ml) / BSA(m^2)
		SV(A2C)	Stroke Volume	SV(ml) = EDV(ml) - ESV(ml)
		EF(A2C)	Ejection Fraction	EF = SV(ml) / EDV(ml)
		CO(A2C)	Cardiac Output	CO(l/min) = SV(ml) × HR(bpm) / 1000
		CI(A2C)	Cardiac Output Index	CI = CO(l/min) / BSA(m^2)
		SI(A2C)	Stroke Volume Index	SI= SV(ml) / BSA(m^2)
		EDV(BP)	End-diastole Left Ventricular Volume	See table 3-6
		ESV(BP)	End-systole Left Ventricular Volume	
		SV(BP)	Stroke Volume	SV(ml) = EDV(ml) - ESV(ml)
		CO(BP)	Cardiac Output	CO(l/min) = SV(ml) × HR(bpm) / 1000
		EF(BP)	Ejection Fraction	EF = SV(ml) / EDV(ml)
		SI(BP)	Stroke Volume Index	SI= SV(ml) / BSA(m^2)
		CI(BP)	Cardiac Output Index	CI = CO(l/min) / BSA(m^2)
2	Mitral Valve	E/A	E-wave Velocity/ A-wave Velocity	E/A = E Vel(cm/s) / A Vel(cm/s)
3	Mitral Valve	MV Area	Mitral Valve Area	PHT(ms) = (1-0.707)× V1(cm/s)× Time(ms) / (V1(cm/s)-V2(cm/s)) MV Area(cm^2) = 220/MV PHT(ms)
4	P Vein	PVein S/D	Pulmonic Veins Systole/Diastole Velocity	S/D = S Vel(cm/s) / D Vel(cm/s)

No.	Calculation Items		Description	Formula
5	Vent. Dim (Ventricular Diameter)	EDV	End-diastolic Left Ventricular	see table 6-3
		ESV	End-systolic Left Ventricular	
		SV	Stroke Volume	SV(ml) = EDV(ml) - ESV(ml)
		CO	Cardiac Output	CO(l/min) = SV(ml) × HR(bpm) / 1000
		EF	Ejection Fraction	EF(no unit) = SV(ml) / EDV(ml)
		SI	Stroke Volume Index	SI(no unit) = SV(ml) / BSA(m^2)
		CI	Cardiac Output Index	CI(no unit) = CO(l/min) / BSA(m^2)
		MVCF	Mean Velocity of Circumferential Fiber Shortening	MVCF = (LVIDd - LVIDs)/(LVIDd × LVET(sec))
		FS	Fractional Shortening	FS(no unit) = (LVIDd - LVIDs) / LVIDd
6	LA/Ao	LAD/AoD	Left Atrial Diameter/ Aortic Toot Diameter	LA/Ao (no unit) = LAD(cm) / AoD(cm)

Table 3-6 EDV and ESV Calculation Formulas

Calc	Input	Formula
EDV A4C	LVLd	$EDV\,4[ml] = \pi \times {LVLd_{4i}[cm]}/{20} \times \sum_{i=1}^{20} r_{4i}^2[cm]$
ESV A4C	LVLs	$ESV\,4[ml] = \pi \times {LVLs_{4i}[cm]}/{20} \times \sum_{i=1}^{20} r_{4i}^2[cm]$
EDV A2C	LVLd	$EDV\,2[ml] = \pi \times {LVLd_{2i}[cm]}/{20} \times \sum_{i=1}^{20} r_{2i}^2[cm]$
ESV A2C	LVLs	$ESV\,2[ml] = \pi \times {LVLs_{2i}[cm]}/{20} \times \sum_{i=1}^{20} r_{2i}^2[cm]$
EDV (BP)	LVLd	$EDV[ml] = \pi \times {MAX\{LVLd_{2i}[cm], LVLd_{4i}[cm]\}}/{20} \times \sum_{i=1}^{20} (r_{2i}[cm] \times r_{4i}[cm])$
ESV (BP)	LVLs	$ESV[ml] = \pi \times {MAX\{LVLs_{2i}[cm], LVLs_{4i}[cm]\}}/{20} \times \sum_{i=1}^{20} (r_{2i}[cm] \times r_{4i}[cm])$

EDV(Teichholz)	LVIDd	EDV(ml) = (7×(LVIDd(cm))^3)/(2.4+LVIDd(cm))
ESV(Teichholz)	LVIDs	ESV(ml) = (7×(LVIDs(cm))^3)/(2.4+LVIDs(cm))
EDV(Cube)	LVIDd	EDV(ml) = LVIDd(cm)^3
ESV(Cube)	LVIDs	ESV(ml) = LVIDs(cm)^3
EDV(Gibson)	LVIDd	$EDV(ml) = \pi/6 \times (0.98 \times LVIDd(cm) + 5.90) \times LVIDd(cm)^2$
ESV(Gibson)	LVIDs	$ESV(ml) = \pi/6 \times (1.14 \times LVIDs(cm) + 4.18) \times LVIDs(cm)^2$

Table 3-7 Small Parts Calculation Formulas

No.	Calculation items	Description	Formula
1	THY-Vol	Thyroid volume	THY-Vol(cm^3) = 0.479×L(cm)×W(cm)×H(cm)

Table 3-8 Urology Calculation Formulas

No.	Calculation items	Description	Formula
1	Renal-Vol	Renal Volume	Renal-Vol(cm^3) = 0.49×L(cm)×W(cm)×H(cm)
2	Pre-BL Vol	Pre-void Bladder Volume	Pre-BL Vol(ml) = π/6×L(cm)×W(cm)×H(cm)
3	Post-BL Vol	Post-void Bladder Volume	Post-BL Vol(ml) = π/6×L(cm)×W(cm)×H(cm)
4	Mictur. Vol	Micturated Volume	Mictur. Vol(ml) = (Pre-BL Vol)–(Post-BL Vol)
5	Prostate-Vol	Prostate Volume	Prostate -Vol(cm^3) = 0.52×Pros-L(cm)×Pros-W(cm)×Pros-H(cm)
6	Testis-Vol	Testicle Volume	Testis-Vol(cm^3) = 0.65×L(cm)×W(cm)×H(cm)

Table 3-9 Vascular Calculation Formulas

No.	Calculation items	Formula
1	Volume Flow Area	Volume Flow Area =π * (VF Diam (cm)/2)^2
2	ICA/CCA	ICA/CCA =ICA PS / CCA PS
3	Volume Flow (TAMean)	Volume Flow (TAMean) = VF Area (cm^2) * |VF TAMean| (cm/s)* 60(s)
4	Volume Flow(TAMax)	Volume Flow(TAMax) = VF Area (cm^2) * |VF TAMax| (cm/s)* 60(s)

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