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ADULT MULTIPHASIC LIVER CT PROTOCOLS

GOAL: The primary goal of multiphasic liver CT is to detect and characterize liver lesions and to assess treatment response. It also serves for assessment of major hepatic vasculature.

DISCLAIMER: This document is ONLY meant to describe the technical elements of a liver-protocol CT examination. It is NOT intended to be a comprehensive description of the liver findings and elements of interpretation of those findings. Please refer to the LIRADS manual for full description of role of imaging for surveillance, detection, and characterization of hepatic lesions in patients at risk for hepatocellular carcinoma.

Indications

Screening for and characterization of liver lesions in patients with increased risk of primary liver or biliary cancer; assessment of tumor response to treatment in patients with known primary malignancy or certain secondary liver malignancies (such as neuroendocrine neoplasm).

Diagnostic Tasks (including but are not limited to)

- Screening of primary liver malignancy in patients at increased risk (mostly patients with history of chronic liver disease)
- Characterization of liver lesion found on another screening test (such as ultrasound)
- Follow up of known liver lesions in patients at risk of primary liver malignancy
- Assessment of tumor response to systemic or locoregional treatments

Key Elements

- Multiphasic study includes late arterial (hepatic arterial), venous, and delayed phases.
- Non-contrast phase in general is optional. The non-contrast phase is recommended for assessment of tumor response to treatment.
- Arterial phase should be obtained with late arterial timing (also known as hepatic arterial phase) to allow for optimum enhancement of hypervascular lesions.
- Delayed phase is required and can help with better characterization of lesions.
- Axial images should be reconstructed at 2-5 mm thickness. Reconstruction of coronal and sagittal reformations is helpful and encouraged.

Contrast

- These studies are performed with injected intravenous contrast:
- Oral: None
- Intravenous: ≥ 300 mgI/mL concentration, 1.5 – 2.0 mL/kg, ≥ 3 mL/sec followed by 30 – 40 mL saline chaser bolus. Injection rates > 3 mL/s improve sensitivity for detection of hypervascular HCC, especially for small lesions. Recommend using bolus tracking rather than fixed timing.

Patient Positioning

- Center the patient within the gantry; this is critical for proper functioning of AEC systems
- Patient in supine position, arms above head

Scan Range

- From a few centimeters above the diaphragm to the iliac crests. If imaging of chest and pelvis are required (mostly for staging in patients with history of malignancy) they can be included in venous phase.

Suspension of Respiration

- Patient should be instructed to hold his/her breath at end of inspiration during the entire scan.

Additional Image Reconstructions

- Coronal and sagittal planar MPRs are encouraged.
 - MPRs of the late (hepatic) arterial and portal venous phases are encouraged. MPRs of the non-contrast and delayed phases are optional.
- Thin images (approximately 2-3 mm) are recommended for the sagittal and/or coronal reformatted images.
- Creation, use, and archival of these additional images are at the discretion of supervising radiologist and/or departmental policy. Large datasets may result from these additional reconstructions.

Radiation Dose Management

- AEC should be used whenever possible.
- Pay careful attention to the values selected to define the desired level of image quality (eg, Noise Index, Quality Reference mAs, Standard Deviation).
- Each manufacturer will have recommendations unique to their systems and system features. Be sure to work with your CT equipment manufacturer and a qualified medical physicist to ensure safe and appropriate operation of AEC systems.
- If more than one CT localizer radiograph is acquired, AEC systems from different manufacturers can differ with respect to which one is used to determine mA and/or kV settings. Please refer to individual manufacturer protocol instructions.

Positioning Scan Guidance

Figure 1. Scan Range for Abdomen Pelvis W/O, Arterial and Delayed Arterial Phase



Figure 2. Scan Range for Venous phase

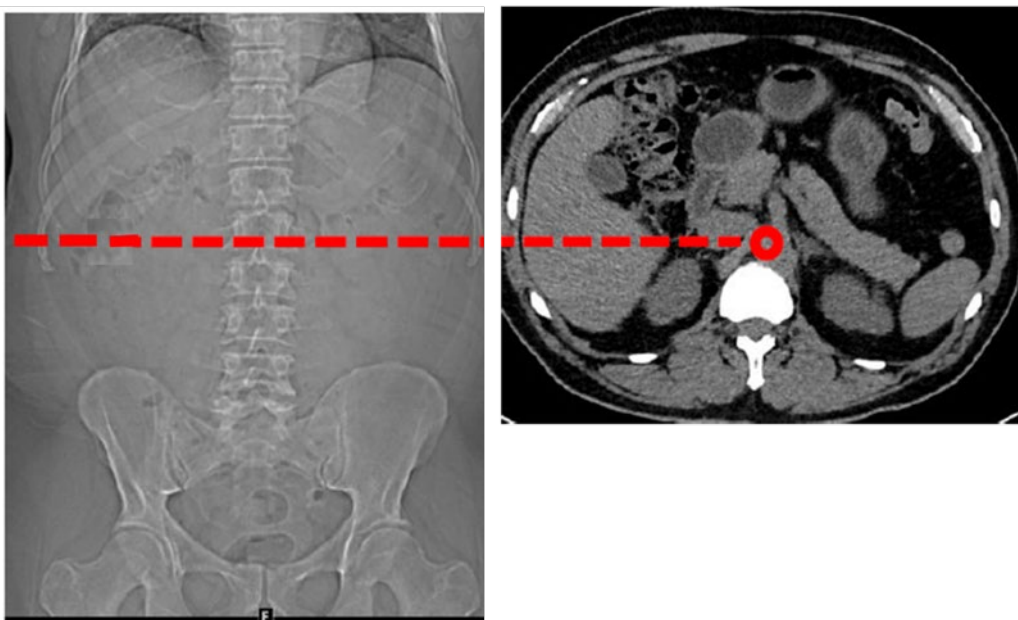


Figure 3. ROI Placement: In Aorta at level of Celiac Artery

ADULT MULTIPHASIC LIVER CT PROTOCOLS

INDEX OF ADULT MULTIPHASIC LIVER CT PROTOCOLS (by manufacturer)

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ADULT MULTIPHASIC LIVER CT (Selected Canon scanners)[\(Back to INDEX\)](#)

Dual Scano:500 mm AP and LAT. Both Scanograms are used for tube current modulation.

PHASE 1: ABDOMEN WITHOUT (OPTIONAL)		
	Aquilion ONE Original/ Vision	Aquilion ONE Genesis/Prism/Insight
Scan Type	Helical	Helical
kV	120	120
mA (AEC)	Low Dose	Low Dose
Rotation Time (s)	0.5	0.5
SURE Exposure	SD 15 / 5mm	SD 15 / 5mm
Effective mAs (or mAs per slice)	*	*
min mA	40	40
max mA	680	680
Detector Configuration (mm)	80 x 0.5	80 x 0.5
Pitch	0.813	0.813
Recon 1		
Type	Axial / Volume	Axial / Volume
Slice Thickness (mm)	5 / 0.5	5 / 0.5
Slice Interval (mm)	5 / 0.3	5 / 0.3
SURE IQ Setting	Body Std Axial (FC18) / Body Std Volume (FC08)	Body Std Axial (FC18) / Body Std Volume (FC08)/Body Sharp L2
Recon Process	AIDR3D Enhanced	AIDR3D Enhanced or AiCE Body Sharp

ADULT MULTIPHASIC LIVER CT (Selected Canon scanners) (continued)

PHASE 2: ABDOMEN WITH (LATE ARTERIAL)		
	Aquilion ONE Original/ Vision	Aquilion ONE Genesis/Prism/Insight
Scan Type	Helical	Helical
kV	120	120
mA (AEC)	Standard	Standard
Rotation Time (s)	0.5	0.5
SURE Exposure	SD 12.5 / 5mm	SD 12.5 / 5mm
Effective mAs (or mAs per slice)	*	*
min mA	80	80
max mA	680	680
Detector Configuration (mm)	80 x 0.5	80 x 0.5
Pitch	0.813	0.813
Recon 1		
Type	Axial / Volume	Axial / Volume
Slice Thickness (mm)	5 / 0.5	5 / 0.5
Slice Interval (mm)	5 / 0.3	5 / 0.3
SURE IQ Setting	Body Std Axial (FC18) / Body Std Volume (FC08)	Body Std Axial (FC18) / Body Std Volume (FC08)/Body Sharp L2
Recon Process	AIDR3D Enhanced	AIDR3D Enhanced or AiCE Body Sharp
Other Recons		
Type	Cor / Sag MPR (2 - 3 mm)	Cor / Sag MPR (2 -3 mm)

ADULT MULTIPHASIC LIVER CT (Selected Canon scanners) (continued)

PHASE 3: ABDOMEN WITH (PORTAL VENOUS)		
	Aquilion ONE Original/ Vision	Aquilion ONE Genesis/Prism/Insight
Scan Type	Helical	Helical
kV	120	120
mA (AEC)	Standard	Standard
Rotation Time (s)	0.5	0.5
SURE Exposure	SD 12.5 / 5mm	SD 12.5 / 5mm
Effective mAs (or mAs per slice)	*	*
min mA	80	80
max mA	680	680
Detector Configuration (mm)	80 x 0.5	80 x 0.5
Pitch	0.813	0.813
Recon 1		
Type	Axial / Volume	Axial / Volume
Slice Thickness (mm)	5 / 0.5	5 / 0.5
Slice Interval (mm)	5 / 0.3	5 / 0.3
SURE IQ Setting	Body Std Axial (FC18) / Body Std Volume (FC08)	Body Std Axial (FC18) / Body Std Volume (FC08)/Body Sharp L2
Recon Process	AIDR3D Enhanced	AIDR3D Enhanced or AiCE Body Sharp
Other Recons		
Type	Cor / Sag MPR (2 - 3 mm)	Cor / Sag MPR (2 -3 mm)

ADULT MULTIPHASIC LIVER CT (Selected Canon scanners) (continued)

PHASE 4: ABDOMEN WITH (DELAYED)		
	Aquilion ONE Original/ Vision	Aquilion ONE Genesis/Prism/Insight
Scan Type	Helical	Helical
kV	120	120
mA (AEC)	Low Dose	Low Dose
Rotation Time (s)	0.5	0.5
SURE Exposure	SD 15 / 5mm	SD 15 / 5mm
Effective mAs (or mAs per slice)	*	*
min mA	40	40
max mA	680	680
Detector Configuration (mm)	80 x 0.5	80 x 0.5
Pitch	0.813	0.813
Recon 1		
Type	Axial / Volume	Axial / Volume
Slice Thickness (mm)	5 / 0.5	5 / 0.5
Slice Interval (mm)	5 / 0.3	5 / 0.3
SURE IQ Setting	Body Std Axial (FC18) / Body Std Volume (FC08)	Body Std Axial (FC18) / Body Std Volume (FC08)/Body Sharp L2
Recon Process	AIDR3D Enhanced	AIDR3D Enhanced or AiCE Body Sharp

ADULT MULTIPHASIC LIVER CT (Selected GE scanners)**[\(Back to INDEX\)](#)**

SCOUT: LAT (recommended first to ensure accurate vertical centering for AEC operation) and AP/PA. AP if automatic exposure control is used. PA if manual mA is used. If two Scouts are obtained, the second one must cover the entire intended scan range, as it is used to determine mA settings.

PHASE 1: ABDOMEN WITHOUT (OPTIONAL)			
	Revolution CT ES Revolution CT Revolution CT with Apex Edition Revolution Apex Plus Revolution Apex Elite	Revolution Frontier Revolution Frontier ES Revolution Discovery CT Discovery CT 750 HD Revolution HD	Revolution Ascend
Scan Type	Helical	Helical	Helical
Beam Collimation	80 (128x0.625 mm)	40 (64x0.625 mm)	40 (64x0.625 mm)
Rotation Time (s)	0.5	0.7	0.7
Pitch	0.992	1.375	1.375
Table Speed (mm/rot)	79.36	55	55
kVp (Auto) ^a OR kVp (Manual) ^c	Auto Prescription / kV Assist range ^b OR 120 ^c	kV Assist range ^b OR 120 ^c	Auto Prescription / kV Assist range ^b OR 120 ^c
Manual mA Approach (mA)	N/A	N/A	N/A
Smart mA Approach (Noise Index)	18.4	26.9	18.4
Smart mA Approach (SmartmA mA Range)	125 - max	125 - max	125 - max
SFOV	LargeBody	LargeBody	LargeBody
ASiR/ASiR-V	ASiR-V 30%	ASiR-V 30% or ASiR 30%	ASiR-V 30%
Slice Thickness	2.5	2.5	2.5
Slice Interval	2.5	2.5	2.5
Recon 1			
Plane	Axial	Axial	Axial
DFOV	36	36	36
Algorithm (Recon Type)	Standard	Standard	Standard
Recon Mode	Plus	Plus	Plus
Recon Option	None	None	None
ASiR/ ASiR-V/ DLIR	ASiR-V 30%	ASiR-30% or ASiR-V 30%	ASiR-V 30%
Thickness	2.5	2.5	2.5
Interval	2.5	2.5	2.5

ADULT MULTIPHASIC LIVER CT (Selected GE scanners) (continued)

PHASE 2: ABDOMEN WITH (LATE ARTERIAL)			
	Revolution CT ES Revolution CT Revolution CT with Apex Edition Revolution Apex Plus Revolution Apex Elite	Revolution Frontier Revolution Frontier ES Revolution Discovery CT Discovery CT 750 HD Revolution HD	Revolution Ascend
Scan Type	Helical	Helical	Helical
Beam Collimation	80 (128x0.625 mm)	40 (64x0.625 mm)	40 (64x0.625 mm)
Rotation Time (s)	0.5	0.7	0.7
Pitch	0.992	1.375	1.375
Table Speed (mm/rot)	158.75	78.57	78.57
kVp (Auto) ^a OR kVp (Manual) ^c	Auto Prescription / kV Assist range ^b OR 120 ^c	kV Assist range ^b OR 120 ^c	Auto Prescription / kV Assist range ^b OR 120 ^c
Manual mA Approach (mA)	N/A	N/A	N/A
Smart mA Approach (Noise Index)	18.4	26.9	18.4
Smart mA Approach (SmartmA mA Range)	125 - max	125 - max	125 - max
SFOV	LargeBody	Large Body	LargeBody
ASiR/ASiR-V	ASiR-V 30%	ASiR-V 30% or ASiR 30%	ASiR-V 30%
Slice Thickness	2.5	2.5	2.5
Slice Interval	2.5	2.5	2.5
Recon 1			
Plane	Axial	Axial	Axial
DFOV	36	36	36
Algorithm (Recon Type)	Standard	Standard	Standard
Recon Mode	Plus	Plus	Plus
Recon Option	None	None	None
ASiR/ ASiR-V/ DLIR	ASiR-V 30%	ASiR-V 30% or ASiR 30%	ASiR-V 30%
Thickness	2.5	2.5	2.5
Interval	2.5	2.5	2.5
Other Recons			
Plane	Cor and Sag MPR (2.5/3 mm)	Cor and Sag MPR (2.5/3 mm)	Cor and Sag MPR (2.5/3 mm)

ADULT MULTIPHASIC LIVER CT (Selected GE scanners) (continued)

PHASE 3: ABDOMEN WITH (PORTAL VENOUS)			
	Revolution CT ES Revolution CT Revolution CT with Apex Edition Revolution Apex Plus Revolution Apex Elite	Revolution Frontier Revolution Frontier ES Revolution Discovery CT Discovery CT 750 HD Revolution HD	Revolution Ascend
Scan Type	Helical	Helical	Helical
Beam Collimation	80 (128x0.625 mm)	40 (64x0.625 mm)	40 (64x0.625 mm)
Rotation Time (s)	0.5	0.7	0.7
Pitch	0.992	1.375	1.375
Table Speed (mm/rot)	158.75	78.57	78.57
kVp (Auto) ^a OR kVp (Manual) ^c	Auto Prescription / kV Assist range ^b OR 120 ^c	kV Assist range ^b OR 120 ^c	Auto Prescription / kV Assist range ^b OR 120 ^c
Manual mA Approach (mA)	N/A	N/A	N/A
Smart mA Approach (Noise Index)	18.4	26.9	18.4
Smart mA Approach (SmartmA mA Range)	125 - max	125 - max	125 - max
SFOV	LargeBody	Large Body	LargeBody
ASiR/ASiR-V	ASiR-V 30%	ASiR-V 30% or ASiR 30%	ASiR-V 30%
Slice Thickness	2.5	2.5	2.5
Slice Interval	2.5	2.5	2.5
Recon 1			
Plane	Axial	Axial	Axial
DFOV	36	36	36
Algorithm (Recon Type)	Standard	Standard	Standard
Recon Mode	Plus	Plus	Plus
Recon Option	None	None	None
ASiR/ ASiR-V/ DLIR	ASiR-V 30%	ASiR-V 30% or ASiR 30%	ASiR-V 30%
Thickness	2.5	2.5	2.5
Interval	2.5	2.5	2.5
Other Recons			
Plane	Cor and Sag MPR (2.5/3 mm)	Cor and Sag MPR (2.5/3 mm)	Cor and Sag MPR (2.5/3 mm)

ADULT MULTIPHASIC LIVER CT (Selected GE scanners) (continued)

PHASE 4: ABDOMEN WITH (DELAYED)			
	Revolution CT ES Revolution CT Revolution CT with Apex Edition Revolution Apex Plus Revolution Apex Elite	Revolution Frontier Revolution Frontier ES Revolution Discovery CT Discovery CT 750 HD Revolution HD	Revolution Ascend
Scan Type	Helical	Helical	Helical
Beam Collimation	80 (128x0.625 mm)	40 (64x0.625 mm)	40 (64x0.625 mm)
Rotation Time (s)	0.5	0.7	0.7
Pitch	0.992	1.375	1.375
Table Speed (mm/rot)	158.75	78.57	78.57
kVp (Auto) ^a	Auto Prescription / kV Assist range ^b	kV Assist range ^b	Auto Prescription / kV Assist range ^b
OR	OR	OR	OR
kVp (Manual) ^c	120 ^c	120 ^c	120 ^c
Manual mA Approach (mA)	N/A	N/A	N/A
Smart mA Approach (Noise Index)	18.4	26.9	18.4
Smart mA Approach (SmartmA mA Range)	125 - max	125 - max	125 - max
SFOV	LargeBody	Large Body	LargeBody
ASiR/ASiR-V	ASiR-V 30%	ASiR-V 30% or ASiR 30%	ASiR-V 30%
Slice Thickness	2.5	2.5	2.5
Slice Interval	2.5	2.5	2.5
Recon 1			
Plane	Axial	Axial	Axial
DFOV	36	36	36
Algorithm (Recon Type)	Standard	Standard	Standard
Recon Mode	Plus	Plus	Plus
Recon Option		None	None
ASiR/ ASiR-V/ DLIR	ASiR-V 30%	ASiR-V 30% or ASiR 30%	ASiR-V 30%
Thickness	2.5	2.5	2.5
Interval	2.5	2.5	2.5

- If scanner is equipped with automatic kV selection (kV Assist or Auto Prescription Profile), this should be used. Min kV, max kV and clinical task should be chosen appropriately.
- Recommendation: Without contrast kV: range: 100-140 and Clinical Task: C-/ Soft Tissue Non-Contrast; With contrast kV range: 100-140; Clinical Task: Soft Tissue +C Low Contrast / C+ Soft Tissue Contrast – enhanced
- Recommendation: kV based on BMI if Automatic kV selection is not possible:
 - BMI < 25, use 100 kVp
 - BMI between 25-50, use 120 kVp
 - BMI > 50, Use 140 kVp

Note: Operator-selected noise index and primary image reconstruction thickness will both strongly impact both CTDIvol and patient dose. [See: Kanal KM et al. Impact of Operator-Selected Image Noise Index and Reconstruction Slice Thickness on Patient Radiation Dose in 64-MDCT. AJR 2007; 189: 219-225.]

Sagittal and Coronal DMPR should be built off a separate 0.625 mm AX series

ADULT MULTIPHASIC LIVER CT (selected GE scanners)(continued)

SCOUT: LAT (recommended first to ensure accurate vertical centering for AEC operation) and AP/PA. AP if automatic exposure control is used. PA if manual mA is used. If two Scouts are obtained, the second one must cover the entire intended scan range, as it is used to determine mA settings.

	PHASE 1: ABDOMEN WITHOUT (OPTIONAL)			
	Optima CT660 Revolution EVO (32 Slice) Optima CT660s Revolution Maxima w/ ASiR Optima CT680 Expert Revolution Ace	Brightspeed	LightSpeed VCT	LightSpeed Pro 16 **
Scan Type	Helical	Helical	Helical	Helical
Beam Collimation	40 (64x0.625 mm)	20 (32x0.625 mm)	40 (64 x 0.625 mm)	20 (32x0.625 mm)
Rotation Time (s)	0.7	0.7	0.4	0.6
Pitch	1.375	1.375	1.375	1.375
Table Speed (mm/rot)	55	27.5	55	45.83
kVp (Auto)a	N/A	N/A	N/A	N/A
OR	OR	OR	OR	OR
kVp (Manual)c	120 ^c	120 ^c	100 ^c	120 ^c
Manual mA Approach (mA)	N/A	N/A	150	N/A
Smart mA Approach (Noise Index)	22.6	22.6	25	18.4
Smart mA Approach (SmartmA mA Range)	125 - max	125 - max	30-420	125 - max
SFOV	LargeBody	LargeBody	LargeBody	LargeBody
ASiR/ASiR-V	SS30:Slice	SS30:Slice	None	N/A
Slice Thickness	2.5	2.5	3.75	2.5
Slice Interval	2.5	2.5	2.5	2.5
Recon 1				
Plane	Axial	Axial	Axial	Axial
DFOV	36	36	40	36
Algorithm (Recon Type)	Standard	Standard	Standard	Standard
Recon Mode	Plus	Plus	Plus	Plus
Recon Option	None	None	None	None
ASiR/ ASiR-V/ DLIR	N/A	N/A	40%/20%/low	N/A
Thickness	2.5	2.5	3.75	5
Interval	2.5	2.5	2.5	5

ADULT MULTIPHASIC LIVER CT (selected GE scanners)(continued)

PHASE 2: ABDOMEN WITH (LATE ARTERIAL)				
	Optima CT660 Revolution EVO (32 Slice) Optima CT660s Revolution Maxima w/ ASiR Optima CT680 Expert Revolution Ace	Brightspeed	LightSpeed VCT	LightSpeed Pro 16 **
Scan Type	Helical	Helical	Helical	Helical
Beam Collimation	40 (64x0.625 mm)	20 (32x0.625 mm)	40 (64 x 0.625 mm)	20 (32x0.625 mm)
Rotation Time (s)	0.7	0.7	0.7	0.6
Pitch	1.375	1.375	0.516	1.375
Table Speed (mm/rot)	78.57	39.28	20.6	45.83
kVp (Auto) ^a	N/A	N/A	N/A	N/A
OR	OR	OR	OR	OR
kVp (Manual) ^c	120 ^c	120 ^c	100 ^c	120 ^c
Manual mA Approach (mA)	N/A	N/A	380	N/A
Smart mA Approach (Noise Index)	22.6	22.6	17.5	18.4
Smart mA Approach (SmartmA mA Range)	125 - max	125 - max	80-760	125 - max
SFOV	LargeBody	LargeBody	LargeBody	LargeBody
ASiR/ASiR-V	SS30:Slice	SS30:Slice	None	N/A
Slice Thickness	2.5	2.5	2.5	2.5
Slice Interval	2.5	2.5	2.5	2.5
Recon 1				
Plane	Axial	Axial	Axial	Axial
DFOV	36	36	40	36
Algorithm (Recon Type)	Standard	Standard	Standard	Standard
Recon Mode	Plus	Plus	Plus	Plus
Recon Option	None	None	None	None
ASiR/ ASiR-V/ DLIR	SS30:Slice	SS30:Slice	40%/20%/low	N/A
Thickness	2.5	2.5	2.5	2.5
Interval	2.5	2.5	2.5	2.5
Other Recons				
Plane	Cor and Sag MPR (2.5/3 mm)	Cor and Sag MPR (2.5/3 mm)	Cor and Sag MPR (2.5/3 mm)	Cor and Sag MPR (2.5/3 mm)

ADULT MULTIPHASIC LIVER CT (selected GE scanners)(continued)

PHASE 3: ABDOMEN WITH (PORTAL VENOUS)				
	Optima CT660 Revolution EVO (32 Slice) Optima CT660s Revolution Maxima w/ ASiR Optima CT680 Expert Revolution Ace	Brightspeed	LightSpeed VCT	LightSpeed Pro 16 **
Scan Type	Helical	Helical	Helical	Helical
Beam Collimation	40 (64x0.625 mm)	20 (32x0.625 mm)	40 (64 x 0.625 mm)	20 (32x0.625 mm)
Rotation Time (s)	0.7	0.7	0.6	0.6
Pitch	1.375	1.375	0.984	1.375
Table Speed (mm/rot)	78.57	39.28	39.4	45.83
kVp (Auto) ^a	N/A	N/A	N/A	N/A
OR	OR	OR	OR	OR
kVp (Manual) ^c	120 ^c	120 ^c	100 ^c	120 ^c
Manual mA Approach (mA)	N/A	N/A	350	N/A
Smart mA Approach (Noise Index)	22.6	22.6	22.5	18.4
Smart mA Approach (SmartmA mA Range)	125 - max	125 - max	70-700	125 - max
SFOV	LargeBody	LargeBody	LargeBody	LargeBody
ASiR/ASiR-V	SS30:Slice	SS30:Slice	None	N/A
Slice Thickness	2.5	2.5	3.75	2.5
Slice Interval	2.5	2.5	2.5	2.5
Recon 1				
Plane	Axial	Axial	Axial	Axial
DFOV	36	36	40	36
Algorithm (Recon Type)	Standard	Standard	Standard	Standard
Recon Mode	Plus	Plus	Plus	Plus
Recon Option	None	None	None	None
ASiR/ ASiR-V/ DLIR	SS30:Slice	SS30:Slice	40%/20%/low	N/A
Thickness	2.5	2.5	3.75	2.5
Interval	2.5	2.5	2.5	2.5
Other Recons				
Plane	Cor and Sag MPR (2.5/3 mm)	Cor and Sag MPR (2.5/3 mm)	Cor and Sag MPR (2.5/3 mm)	Cor and Sag MPR (2.5/3 mm)

ADULT MULTIPHASIC LIVER CT (selected GE scanners)(continued)

PHASE 4: ABDOMEN WITH (DELAYED)				
	Optima CT660 Revolution EVO (32 Slice) Optima CT660s Revolution Maxima w/ ASiR Optima CT680 Expert Revolution Ace	Brightspeed	LightSpeed VCT	LightSpeed Pro 16 **
Scan Type	Helical	Helical	Helical	Helical
Beam Collimation	40 (64x0.625 mm)	20 (32x0.625 mm)	40 (64 x 0.625 mm)	20 (32x0.625 mm)
Rotation Time (s)	0.7	0.7	0.6	0.6
Pitch	1.375	1.375	0.984	1.375
Table Speed (mm/rot)	78.57	39.28	39.4	45.83
kVp (Auto) ^a	N/A	N/A	N/A	N/A
OR	OR	OR	OR	OR
kVp (Manual) ^c	120 ^c	120 ^c	100 ^c	120 ^c
Manual mA Approach (mA)	N/A	N/A	350	N/A
Smart mA Approach (Noise Index)	22.6	22.6	22.5	18.4
Smart mA Approach (SmartmA mA Range)	125 - max	125 - max	70-700	125 - max
SFOV	LargeBody	LargeBody	Large Body	LargeBody
ASiR/ASiR-V	SS30:Slice	SS30:Slice	40%/20%/low	N/A
Slice Thickness	2.5	2.5	3.75	2.5
Slice Interval	2.5	2.5	2.5	2.5
Recon 1				
Plane	Axial	Axial	Axial	Axial
DFOV	36	36	40	36
Algorithm (Recon Type)	Standard	Standard	Standard	Standard
Recon Mode	Plus	Plus	Plus	Plus
Recon Option	None	None	IQ Enhance	None
ASiR/ ASiR-V/ DLIR	SS30:Slice	SS30:Slice	40%/20%/low	N/A
Thickness	2.5	2.5	1.25	2.5
Interval	2.5	2.5	0.625	2.5

- If scanner is equipped with automatic kV selection (kV Assist or Auto Prescription Profile), this should be used. Min kV, max kV and clinical task should be chosen appropriately.
- Recommendation: Without contrast kV: range: 100-140 and Clinical Task: C-/ Soft Tissue Non-Contrast; With contrast kV range: 100-140; Clinical Task: Soft Tissue +C Low Contrast / C+ Soft Tissue Contrast – enhanced
- Recommendation: kV based on BMI if Automatic kV selection is not possible:
 - BMI < 25, use 100 kVp
 - BMI between 25-50, use 120 kVp
 - BMI > 50, Use 140 kVp

Note: Operator-selected noise index and primary image reconstruction thickness will both strongly impact both CTDIvol and patient dose. [See: Kanal KM et al. Impact of Operator-Selected Image Noise Index and Reconstruction Slice Thickness on Patient Radiation Dose in 64-MDCT. AJR 2007; 189: 219-225.]

Sagittal and Coronal DMPR should be built off a separate 0.625 mm AX series

ADULT MULTIPHASIC LIVER CT (selected Neusoft scanners)[\(Back to INDEX\)](#)

SCOUT: LAT (recommended first to ensure accurate vertical centering for AEC operation) and AP/PA. AP if automatic exposure control is used. PA if manual mA is used. If two Scouts are obtained, the second one must cover the entire intended scan range, as it is used to determine mA settings.

PHASE 1: ABDOMEN WITHOUT (OPTIONAL)				
	NeuViz128	NeuViz64	Neuviz16 Essence	NneuViz 16
Scan Type	Helical	Helical	Helical	Helical
Beam Collimation	128x0.625 (64x.625 ^a)	64x0.625 (32x0.625 ^a)	32x1.25 (16x1.25mm ^a)	16x1.5
Rotation Time (s)	0.6s	0.6	0.6	0.75
Pitch	1	1	1	1
Table Speed (mm/rot)	40	20	20	24
kVp(Manual)	120	120	120	120
mAs (AEC/O-Dose)	250	250	250	250
SFOV	50cm	50cm	50cm	50cm
SliceThickness	5mm	5mm	5mm	5mm
Slice Interval	5mm	5mm	5mm	5mm
CTDI-vol (mGy) varies with AEC ^b				
Recon 1				
Plane	Axial	Axial	Axial	Axial
DFOV	300mm	300mm	300mm	300mm
Algorithm (Recon Type)	F20	F20	F20	SB
Iterative Reconstruction	ClearView 30%	ClearView 30%	ClearView 30%	ACS/DOM
Thickness	1mm	1mm	1mm	1.5mm
Interval	0.5mm	0.5mm	0.5mm	0.75mm
COR/SAG MPR	AIP 3/3MM	AIP 3/3MM	AIP 3/3MM	AIP 3/3mm

ADULT MULTIPHASIC LIVER CT (selected NEUSOFT scanners) (continued)

PHASE 2: ABDOMEN WITH (LATE ARTERIAL)				
	NeuViz128	NeuViz64	Neuviz16 Essence	NneuViz 16
Scan Type	Helical	Helical	Helical	Helical
Beam Collimation	128x0.625 (64x.625 ^a)	64x0.625 (32x0.625 ^a)	32x1.25 (16x1.25mm ^a)	16x1.5
Rotation Time (s)	0.6s	0.6	0.6	0.75
Pitch	1	1	1	1
Table Speed (mm/rot)	40	20	20	24
kVp(Manual)	120	120	120	120
mAs (AEC/O-Dose)	250	250	250	250
SFOV	50cm	50cm	50cm	50cm
SliceThickness	5mm	5mm	5mm	5mm
Slice Interval	5mm	5mm	5mm	5mm
CTDI-vol (mGy) varies with AEC ^b				
Recon 1				
Plane	Axial	Axial	Axial	Axial
DFOV	300mm	300mm	300mm	300mm
Algorithm (Recon Type)	F20	F20	F20	SB
Iterative Reconstruction	ClearView 30%	ClearView 30%	ClearView 30%	ACS/DOM
Thickness	1mm	1mm	1mm	1.5mm
Interval	0.5mm	0.5mm	0.5mm	0.75mm
COR/SAG MPR	AIP 3/3MM	AIP 3/3MM	AIP 3/3MM	AIP 3/3mm
Interval				
Recon 2				
Plane	Cor and Sag MPR	Cor and Sag MPR	Cor and Sag MPR	Cor and Sag MPR

ADULT MULTIPHASIC LIVER CT (selected NEUSOFT scanners) (continued)[\(Back to INDEX\)](#)

PHASE 3: ABDOMEN WITH (PORTAL VENOUS)				
	NeuViz128	NeuViz64	Neuviz16 Essence	NneuViz 16
Scan Type	Helical	Helical	Helical	Helical
Beam Collimation	128x0.625 (64x.625 ^a)	64x0.625 (32x0.625 ^a)	32x1.25 (16x1.25mm ^a)	16x1.5
Rotation Time (s)	0.6s	0.6	0.6	0.75
Pitch	1	1	1	1
Table Speed (mm/rot)	40	20	20	24
kVp(Manual)	120	120	120	120
mAs (AEC/O-Dose)	250	250	250	250
SFOV	50cm	50cm	50cm	50cm
Slice Thickness	5mm	5mm	5mm	5mm
Slice Interval	5mm	5mm	5mm	5mm
CTDI-vol (mGy) varies with AEC ^b				
Recon 1				
Plane	Axial	Axial	Axial	Axial
DFOV	300mm	300mm	300mm	300mm
Algorithm (Recon Type)	F20	F20	F20	SB
Iterative Reconstruction	ClearView 30%	ClearView 30%	ClearView 30%	ACS/DOM
Thickness	1mm	1mm	1mm	1.5mm
Interval	0.5mm	0.5mm	0.5mm	0.75mm
COR/SAG MPR	AIP 3/3MM	AIP 3/3MM	AIP 3/3MM	AIP 3/3mm
Interval				
Recon 2				
Plane	Cor and Sag MPR	Cor and Sag MPR	Cor and Sag MPR	Cor and Sag MPR

ADULT MULTIPHASIC LIVER CT (selected NEUSOFT scanners) (continued)

PHASE 4: ABDOMEN WITH (DELAYED)				
	NeuViz128	NeuViz64	Neuviz16 Essence	NneuViz 16
Scan Type	Helical	Helical	Helical	Helical
Beam Collimation	128x0.625 (64x.625 ^a)	64x0.625 (32x0.625 ^a)	32x1.25 (16x1.25mm ^a)	16x1.5
Rotation Time (s)	0.6s	0.6	0.6	0.75
Pitch	1	1	1	1
Table Speed (mm/rot)	40	20	20	24
kVp(Manual)	120	120	120	120
mAs (AEC/O-Dose)	250	250	250	250
SFOV	50cm	50cm	50cm	50cm
SliceThickness	5mm	5mm	5mm	5mm
Slice Interval	5mm	5mm	5mm	5mm
CTDI-vol (mGy) varies with AEC ^b				
Recon 1				
Plane	Axial	Axial	Axial	Axial
DFOV	300mm	300mm	300mm	300mm
Algorithm (Recon Type)	F20	F20	F20	SB
Iterative Reconstruction	ClearView 30%	ClearView 30%	ClearView 30%	ACS/DOM
Thickness	1mm	1mm	1mm	1.5mm
Interval	0.5mm	0.5mm	0.5mm	0.75mm
COR/SAG MPR	AIP 3/3MM	AIP 3/3MM	AIP 3/3MM	AIP 3/3mm
Interval				

- a. Indicates that a z-axis “flying focal spot” technique is used to obtain twice as many projections per rotation as detector rows.
- b. CTDIvol is generated after the Dual Scouts are completed.

ADULT MULTIPHASIC LIVER CT (selected PHILIPS scanners)[\(Back to INDEX\)](#)

SCANOGRAPH: Dual surview recommended to ensure accurate vertical centering for AEC operation.

PHASE 1: ABDOMEN WITHOUT (OPTIONAL)				
	Brilliance 64	Ingenuity 64	Incisive 2 cm system	Incisive 4 cm system
Scan Type	Helical	Helical	Liver (Helical)	Liver (Helical)
Age Group	Adult	Adult	Adult	Adult
Patient Size	50-90	50-90	50-90	50-90
Collimation	64 x 0.625	64 x 0.625 (Auto)	32 x 0.625	64 x 0.625
Pitch	0.891	1.288 (1.355)	0.8	0.8
Rotation Time	0.5	0.75 (0.5)	0.5	0.5
Resolution	Standard	Standard	Standard	Standard
DoseRight	Yes	Yes	Yes	Yes
Dose Right Index	19	19	27/ 20 with iDose4	27/ 20 with iDose4
Z - Modulation	Yes	Yes		
3D - Modulation	Yes	Yes	Yes	Yes
Liver Area DoseRight Index	+3	+3	Same	Same
kV	120	120	120	120
mAs	113	113	227 / 103	227 / 103
CTDIvol	8.7	8.7	20.5 / 9.24	18.45/8.31
Reference Patient Size/Ref Diameter (Philips)	29	29	29	29
Recon 1				
Orientation	Axial	Axial	Axial	Axial
Thickness	3	3	3	3
Increment	3	3	3	3
Recon Mode	iDose	iDose	Standard/ iDose 4	Standard/ iDose 4
iDose Level	4	4	4	4
Filter	Standard (B)	Standard (B)	B	B
Enhancement	0	0	0	0

ADULT MULTIPHASIC LIVER CT (selected PHILIPS scanners) (continued)

PHASE 2: ABDOMEN WITH (LATE ARTERIAL)				
	Brilliance 64	Ingenuity 64	Incisive 2 cm system	Incisive 4 cm system
Scan Type	Helical	Helical	Liver (Helical)	Liver (Helical)
Age Group	Adult	Adult	Adult	Adult
Patient Size	50-90	50-90	50-90	50-90
Collimation	64 x 0.625	64 x 0.625 (Auto)	32 x 0.625	64 x 0.625
Pitch	64 x 0.625	64 x 0.625 (Auto)	0.8	0.8
Rotation Time	0.891	1.288 (1.355)	0.5	0.5
Resolution	Standard	Standard	Standard	Standard
DoseRight	Yes	Yes	Yes	Yes
Dose Right Index	19	19	27/ 20 with iDose4	27/ 20 with iDose4
Z - Modulation	Yes	Yes		
3D - Modulation	Yes	Yes	Yes	Yes
Liver Area DoseRight Index	+3	+3	Same	Same
kV	120	120	120	120
mAs	113	113	227 / 103	227 / 103
CTDIvol	8.7	8.7	20.5 / 9.24	18.45 / 8.31
Reference Patient Size/Ref Diameter (Philips)	29	29	29	29
Recon 1				
Orientation	Axial	Axial	Axial	Axial
Thickness	3	3	3	3
Increment	3	3	3	3
Recon Mode	iDose	iDose	Standard/ iDose	Standard/ iDose
iDose Level	4	4	4	4
Filter	Standard (B)	Standard (B)	B	B
Enhancement	0	0	0	0
Other Recons				
Plane	Cor and Sag MPR (2.5/3 mm)	Cor and Sag MPR (2.5/3 mm)	Cor and Sag MPR (2.5/3 mm)	Cor and Sag MPR (2.5/3 mm)

ADULT MULTIPHASIC LIVER CT (selected PHILIPS scanners) (continued)

PHASE 3: ABDOMEN WITH (PORTAL VENOUS)				
	Brilliance 64	Ingenuity 64	Incisive 2 cm system	Incisive 4 cm system
Scan Type	Helical	Helical	Liver (Helical)	Liver (Helical)
Age Group	Adult	Adult	Adult	Adult
Patient Size	50-90	50-90	50-90	50-90
Collimation	64 x 0.625	64 x 0.625 (Auto)	32 x 0.625	64 x 0.625
Pitch	64 x 0.625	64 x 0.625 (Auto)	0.8	0.8
Rotation Time	0.891	1.288 (1.355)	0.5	0.5
Resolution	Standard	Standard	Standard	Standard
DoseRight	Yes	Yes	Yes	Yes
Dose Right Index	19	19	27/ 20 with iDose4	27/ 20 with iDose4
Z - Modulation	Yes	Yes		
3D - Modulation	Yes	Yes	Yes	Yes
Liver Area DoseRight Index	+3	+3	Same	Same
kV	120	120	120	120
mAs	113	113	227 / 103	227 / 103
CTDIvol	8.7	8.7	20.5 / 9.24	18.45 / 8.31
Reference Patient Size/Ref Diameter (Philips)	29	29	29	29
Recon 1				
Orientation	Axial	Axial	Axial	Axial
Thickness	3	3	3	3
Increment	3	3	3	3
Recon Mode			Standard/ iDose	Standard/ iDose
iDose Level	iDose4	iDose4	4	4
Filter	Standard (B)	Standard (B)	B	B
Enhancement	0	0	0	0
Other Recons				
Plane	Cor and Sag MPR (2.5/3 mm)	Cor and Sag MPR (2.5/3 mm)	Cor and Sag MPR (2.5/3 mm)	Cor and Sag MPR (2.5/3 mm)

ADULT MULTIPHASIC LIVER CT (selected PHILIPS scanners) (continued)

PHASE 4: ABDOMEN WITH (DELAYED)				
	Brilliance 64	Ingenuity 64	Incisive 2 cm system	Incisive 4 cm system
Scan Type	Helical	Helical	Liver (Helical)	Liver (Helical)
Age Group	Adult	Adult	Adult	Adult
Patient Size	50-90	90-120 kg ?	50-90	50-90
Collimation	64 x 0.625	64 x 0.625 (Auto)	32 x 0.625	64 x 0.625
Pitch	64 x 0.625	1.288 (1.355)	0.8	0.8
Rotation Time	0.891	0.75 (0.5)	0.5	0.5
Resolution	Standard	Standard	Standard	Standard
DoseRight	Yes	Yes	Yes	Yes
Dose Right Index	19	19	27/ 20 with iDose4	27/ 20 with iDose4
Z - Modulation	Yes	Yes		
3D - Modulation	Yes	Yes	Yes	Yes
Liver Area DoseRight Index	+3	+3	Same	Same
kV	120	120	120	120
mAs	113	180	227 / 103	227 / 103
CTDIvol	8.7	13.8	20.5 / 9.24	18.45 / 8.31
Reference Patient Size/Ref Diameter (Philips)	29	29	29	29
Recon 1				
Orientation	Axial	Axial	Axial	Axial
Thickness	3	5	3	3
Increment	3	2.5	3	3
Recon Mode		iDose	Standard/ iDose	Standard/ iDose
iDose Level	iDose4	3	4	4
Filter	Standard (B)	Standard (B)	B	B
Enhancement	0		0	0

ADULT MULTIPHASIC LIVER CT (selected PHILIPS scanners) (continued)

SCANOGRAM: Dual survey recommended to ensure accurate vertical centering for AEC operation.

PHASE 1: ABDOMEN WITHOUT (OPTIONAL)				
	Spectral CT 7500	IQon	iCT 256	iCT 128
Scan Type	Helical	Helical	Helical	Helical
Age Group	Adult	Adult	Adult	Adult
Patient Size	50-90	50-90	50-90	50-90
Collimation	128 x 0.625	64 x 0.625	128 x 0.625	64 x 0.625
Pitch	1.4	1.258	0.925	1.49
Rotation Time	0.33	0.27	0.4	0.4
Resolution	Standard	Standard	Standard	Standard
DoseRight	Yes	Yes	Yes	Yes
Dose Right Index	18	18	19	19
Z - Modulation	Yes	Yes	Yes	Yes
3D - Modulation	Yes	Yes	Yes	Yes
Liver Area DoseRight Index	+3	+3	+3	+3
kV	120	120	120	120
mAs	87	82	113	113
CTDIvol	7.8	7.3	8	8.2
Reference Patient Size/Ref Diameter (Philips)	29	29	29	29
Recon 1				
Orientation	Axial	Axial	Axial	Axial
Thickness	3	3	3	3
Increment	3	3	3	3
Recon Mode	iDose	iDose	iDose	iDose
iDose Level	4	4	4	4
Filter	Standard (B)	Standard (B)	Standard (B)	Standard (B)
Enhancement	0	0	0	0

ADULT MULTIPHASIC LIVER CT (selected PHILIPS scanners) (continued)

PHASE 2: ABDOMEN WITH (LATE ARTERIAL)				
	Spectral CT 7500	IQon	iCT 256	iCT 128
Scan Type	Abdomen/Pelvis (Helical)	Abdomen/Pelvis (Helical)	Helical	Helical
Age Group	Adult	Adult	Adult	Adult
Patient Size	50-90	50-90	50-90	50-90
Collimation	128 x 0.625	64 x 0.625	128 x 0.625	64 x 0.625
Pitch	1.4	1.258	0.925	1.49
Rotation Time	0.33	0.27	0.4	0.4
Resolution	Standard	Standard	Standard	Standard
DoseRight	Yes	Yes	Yes	Yes
Dose Right Index	18	18	19	19
Z - Modulation	Yes	Yes	Yes	Yes
3D - Modulation	Yes	Yes	Yes	Yes
Liver Area DoseRight Index	+3	+3	+3	+3
kV	120	120	120	120
mAs	87	82	113	113
CTDIvol	7.8	7.3	8	8.2
Reference Patient Size/Ref Diameter (Philips)	29	29	29	29
Recon 1				
Orientation	Axial	Axial	Axial	Axial
Thickness	3	3	3	3
Increment	3	3	3	3
Recon Mode	iDose	iDose	iDose	iDose
iDose Level	4	4	4	4
Filter	Standard (B)	Standard (B)	Standard (B)	Standard (B)
Enhancement	0	0	0	0
Other Recons				
Plane	Cor and Sag MPR (2.5/3 mm), Spectral (MonoE 55keV)	Cor and Sag MPR (2.5/3 mm), Spectral (MonoE 55keV)	Cor and Sag MPR (2.5/3 mm)	Cor and Sag MPR (2.5/3 mm)

ADULT MULTIPHASIC LIVER CT (selected PHILIPS scanners) (continued)

PHASE 3: ABDOMEN WITH (PORTAL VENOUS)				
	Spectral CT 7500	IQon	iCT 256	iCT 128
Scan Type	Abdomen/Pelvis (Helical)	Abdomen/Pelvis (Helical)	Helical	Helical
Age Group	Adult	Adult	Adult	Adult
Patient Size	50-90	50-90	50-90	50-90
Collimation	128 x 0.625	64 x 0.625	128 x 0.625	64 x 0.625
Pitch	1.4	1.258	0.925	1.49
Rotation Time	0.33	0.27	0.4	0.4
Resolution	Standard	Standard	Standard	Standard
DoseRight	Yes	Yes	Yes	Yes
Dose Right Index	18	18	19	19
Z - Modulation	Yes	Yes	Yes	Yes
3D - Modulation	Yes	Yes	Yes	Yes
Liver Area DoseRight Index	+3	+3	+3	+3
kV	120	120	120	120
mAs	87	82	113	113
CTDIvol	7.8	7.3	8	8
Reference Patient Size/Ref Diameter (Philips)	29	29	29	29
Recon 1				
Orientation	Axial	Axial	Axial	Axial
Thickness	3	3	3	3
Increment	3	3	3	3
Recon Mode	iDose	iDose		
iDose Level	4	4	iDose4	iDose4
Filter	Standard (B)	Standard (B)	Standard (B)	Standard (B)
Enhancement	0	0	0	0
Other Recons				
Plane	Cor and Sag MPR (2.5/3 mm), Spectral (MonoE 55keV)	Cor and Sag MPR (2.5/3 mm), Spectral (MonoE 55keV)	Cor and Sag MPR (2.5/3 mm)	Cor and Sag MPR (2.5/3 mm)

ADULT MULTIPHASIC LIVER CT (selected PHILIPS scanners) (continued)

PHASE 4: ABDOMEN WITH (DELAYED)				
	Spectral CT 7500	IQon	iCT 256	iCT 128
Scan Type	Abdomen/Pelvis (Helical)	Abdomen/Pelvis (Helical)	Helical	Helical
Age Group	Adult	Adult	Adult	Adult
Patient Size	50-90	50-90	50-90	50-90
Collimation	128 x 0.625	64 x 0.625	128 x 0.625	64 x 0.625
Pitch	1.4	1.258	0.925	1.49
Rotation Time	0.33	0.27	0.4	0.4
Resolution	Standard	Standard	Standard	Standard
DoseRight	Yes	Yes	Yes	Yes
Dose Right Index	18	18	19	19
Z - Modulation	Yes	Yes	Yes	Yes
3D - Modulation	Yes	Yes	Yes	Yes
Liver Area DoseRight Index	+3	+3	+3	+3
kV	120	120	120	120
mAs	87	82	113	113
CTDIvol	7.8	7.3	8	8
Reference Patient Size/Ref Diameter (Philips)	29	29	29	29
Recon 1				
Orientation	Axial	Axial	Axial	Axial
Thickness	3	3	3	3
Increment	3	3	3	3
Recon Mode	iDose	iDose		
iDose Level	4	4	iDose4	iDose4
Filter	Standard (B)	Standard (B)	Standard (B)	Standard (B)
Enhancement	0	0	0	0

ADULT MULTIPHASIC LIVER CT (Selected Siemens scanners)[\(Back to INDEX\)](#)

TOPOGRAM: LAT (recommended first to ensure accurate vertical centering for AEC operation) and AP/PA. AP if automatic exposure control is used. PA if manual mA is used. If two Scouts are obtained, the second one must cover the entire intended scan range, as it is used to determine mA settings.

PHASE 1: ABDOMEN WITHOUT (OPTIONAL)				
SIEMENS	Definition AS (64 Slice)	SOMATOM go.Top (64-slice)	SOMATOM go.All (32-slice)	Definition AS (20 Slice)
Scan Mode	Spiral	Spiral	Spiral	Spiral
Rotation Time (s)	0.5	0.5	0.5	0.5
Pitch	0.8	0.8	0.8	0.8
Detector Configuration (mm)	64 × 0.6 ^a (32 x 0.6 = 19.2)	64 × 0.6 ^a (64 x 0.6 = 38.4)	32 x 0.7 (32 x 0.7 = 22.4)	20 × 0.6 (10 x 0.6 = 6)
kV (ref.) or Manual	120	120	120	120
Quality ref. mAs	170	112	112	179
IQ Level		145	145	
CARE Dose4D	ON	Full	Full	ON
CARE kV or CARE k(e)V	ON ^c	Full ^c	Full ^c	ON ^c
CTDIvol (mGy)	13 ^e	10 ^e	10 ^e	13 ^e
CARE kV group	ON			ON
Recon 1				
Type	Axial	Axial	Axial	Axial
keV				
Kernel (IR Strength)	Br40(2)	Br40(3)	Br40(3)	I40f (2)/ B40f (2)
Window	Abdomen	Abdomen	Abdomen	Abdomen
Slice (mm)	5	5	5	5
Increment (mm)	5	5	5	5

ADULT MULTIPHASIC LIVER CT (Selected Siemens scanners) (continued)

PHASE 2: ABDOMEN WITH (LATE ARTERIAL)				
SIEMENS	Definition AS (64 Slice)	SOMATOM go.Top (64-slice)	SOMATOM go.All (32-slice)	Definition AS (20 Slice)
Scan Mode	Spiral	Spiral	Spiral	Spiral
Rotation Time (s)	0.5	0.5	0.5	0.5
Pitch	0.8	0.8	0.8	0.8
Detector Configuration (mm)	64 × 0.6 ^a (32 × 0.6 = 19.2)	64 × 0.6 ^a (64 × 0.6 = 38.4)	32 × 0.7 (32 × 0.7 = 22.4)	20 × 0.6 (10 × 0.6 = 6)
kV (ref.)	120	120	120	120
Quality ref. mAs	170	112	112	179
IQ Level		145	145	
CARE Dose4D	ON	Full	Full	ON
CARE kV	ON ^c	Full ^c	Full ^c	ON ^c
CTDIvol (mGy)	13 ^e	10 ^e	10 ^e	13 ^e
CARE kV group	ON			ON
Recon 1				
Type	Axial	Axial	Axial	Axial
keV				
Kernel (IR Strength)	Br40(2)	Br40(3)	Br40(3)	I40f (2)
Window	Abdomen	Abdomen	Abdomen	Abdomen
Slice (mm)	2	2	2	2
Increment (mm)	2	2	2	2
Other Recons				
Plane	Cor and Sag MPR (2.5/3 mm)	Cor and Sag MPR (2.5/3 mm)	Cor and Sag MPR (2.5/3 mm)	Cor and Sag MPR (2.5/3 mm)

ADULT MULTIPHASIC LIVER CT (Selected Siemens scanners) (continued)

PHASE 3: ABDOMEN WITH (PORTAL VENOUS)				
SIEMENS	Definition AS (64 Slice)	SOMATOM go.Top (64-slice)	SOMATOM go.All (32-slice)	Definition AS (20 Slice)
Scan Mode	Spiral	Spiral	Spiral	Spiral
Rotation Time (s)	0.5	0.5	0.5	0.5
Pitch	0.8	0.8	0.8	0.8
Detector Configuration (mm)	64 × 0.6 ^a (32 × 0.6 = 19.2)	64 × 0.6 ^a (64 × 0.6 = 38.4)	32 × 0.7 (32 × 0.7 = 22.4)	20 × 0.6 (10 × 0.6 = 6)
kV (ref.)	120	120	120	120
Quality ref. mAs	170	112	112	179
IQ Level		145	145	
CARE Dose4D	ON	Full	Full	ON
CARE kV	ON ^c	Full ^c	Full ^c	ON ^c
CTDIvol (mGy)	13 ^e	10 ^e	10 ^e	13 ^e
CARE kV group	ON			ON
Recon 1				
Type	Axial	Axial	Axial	Axial
keV				
Kernel (IR Strength)	Br40(2)	Br40(3)	Br40(3)	I40f (2)/ B40f
Window	Abdomen	Abdomen	Abdomen	Abdomen
Slice (mm)	2	2	2	2
Increment (mm)	2	2	2	2
Other Recons				
Plane	Cor and Sag MPR (2.5/3 mm)	Cor and Sag MPR (2.5/3 mm)	Cor and Sag MPR (2.5/3 mm)	Cor and Sag MPR (2.5/3 mm)

ADULT MULTIPHASIC LIVER CT (Selected Siemens scanners) (continued)

PHASE 4: ABDOMEN WITH (DELAYED)				
SIEMENS	Definition AS (64 Slice)	SOMATOM go.Top (64-slice)	SOMATOM go.All (32-slice)	Definition AS (20 Slice)
Scan Mode	Spiral	Spiral	Spiral	Spiral
Rotation Time (s)	0.5	0.5	0.5	0.5
Pitch	0.8	0.8	0.8	0.8
Detector Configuration (mm)	64 × 0.6 ^a (32 × 0.6 = 19.2)	64 × 0.6 ^a (64 × 0.6 = 38.4)	32 × 0.7 (32 × 0.7 = 22.4)	20 × 0.6 (10 × 0.6 = 6)
kV (ref.)	120	120	120	120
Quality ref. mAs	170	112	112	179
IQ Level		145	145	
CARE Dose4D	ON	Full	Full	ON
CARE kV	ON ^c	Full ^c	Full ^c	ON ^c
CTDIvol (mGy)	13 ^e	10 ^e	10 ^e	13 ^e
CARE kV group	ON			ON
Recon 1				
Type	Axial	Axial	Axial	Axial
keV				
Kernel (IR Strength)	Br40(2)	Br40(3)	Br40(3)	I40f (2)
Window	Abdomen	Abdomen	Abdomen	Abdomen
Slice (mm)	2	2	2	2
Increment (mm)	2	2	2	2

* Shorter rotation times should be considered if the required tube current-time product (mAs) can be reached.

a. Indicates that a z-axis “flying focal spot” technique is used to obtain twice as many projections per rotation as detector rows

b. If scanner is equipped with automatic kV selection (CARE kV), this should be activated by selecting “On”

c. Recommendation: Without contrast kV: range: 100-140 and Dose saving optimized for slider position = 3/non-contrast; With contrast kV range: 100-140; Dose saving optimized for slider position = 7/soft tissue with contrast

d. Recommendation: kV based on BMI if Automatic kV selection is not possible:

BMI < 25, use 100 kVp

BMI between 25-50, use 120 kVp

BMI > 50, Use 140 kVp

e. with ADMIRE, SAFIRE or IRIS

f. CTDIvol will be generated upon acquisition of the topogram. CARE Dose4D will adjust the mAs/eff. mAs to the patient based on the topogram. CTDIvol values for any given patient should be comparable or lower than the values associated with the manual mAs and kV approach.

ADULT MULTIPHASIC LIVER CT (Selected Siemens scanners) (continued)

TOPOGRAM: LAT (recommended first to ensure accurate vertical centering for AEC operation) and AP/PA. AP if automatic exposure control is used. PA if manual mA is used. If two Scouts are obtained, the second one must cover the entire intended scan range, as it is used to determine mA settings.

PHASE 1: ABDOMEN WITHOUT (OPTIONAL)				
SIEMENS	Somatom Drive Somatom Flash (Dual source 128- slice)	Definition AS+/ Edge Plus (128- slice)	SOMATOM X.ceed (128-slice)	SOMATOM X.cite (128-slice)
Scan Mode	Spiral	Spiral	Spiral	Spiral
Rotation Time (s)	0.5	0.5	0.25	0.3
Pitch	0.8	0.8	0.6	0.6
Detector Configuration (mm)	128 × 0.6 ^a (64 × 0.6 = 38.4)	128 × 0.6 ^a (64 × 0.6 = 38.4)	128 × 0.6 ^a (64 × 0.6 = 38.4)	128 × 0.6 ^a (64 × 0.6 = 38.4)
kV (ref.) or Manual	120	120	120	120
Quality ref. mAs	203	192	131	131
IQ Level			145	145
CARE Dose4D	ON	ON	Full	Full
CARE kV or CARE k(e)V	ON ^c	On ^c	Full ^c	Full ^c
CTDIvol (mGy)	13 ^e	13 ^e	13 ^e	11 ^e
CARE kV group	ON	ON		
Recon 1				
Type	Axial	Axial	Axial	Axial
keV				
Kernel (IR Strength)	Br40(2)	Br40(2)/ I40f(2)	Br40(3)	Br40(3)
Window	Abdomen	Abdomen	Abdomen	Abdomen
Slice (mm)	5	5	5	5
Increment (mm)	5	5	5	5

ADULT MULTIPHASIC LIVER CT (Selected Siemens scanners) (continued)

PHASE 2: ABDOMEN WITH (LATE ARTERIAL)				
SIEMENS	Somatom Drive Somatom Flash (Dual source 128-slice)	Definition AS+/ Edge Plus (128- slice)	SOMATOM X.ceed (128-slice)	SOMATOM X.cite (128-slice)
Scan Mode	Spiral	Spiral	Spiral	Spiral
Rotation Time (s)	0.5	0.5	0.25	0.3
Pitch	0.8	0.8	0.6	0.6
Detector Configuration (mm)	128 × 0.6 ^a (64 × 0.6 = 38.4)	128 × 0.6 ^a (64 × 0.6 = 38.4)	128 × 0.6 ^a (64 × 0.6 = 38.4)	128 × 0.6 ^a (64 × 0.6 = 38.4)
kV (ref.)	120	120	120	120
Quality ref. mAs	203	192	131	131
IQ Level			145	145
CARE Dose4D	ON	ON	Full	Full
CARE kV	ON ^c	ON ^c	Full ^c	Full ^c
CTDIvol (mGy)	13 ^e	13 ^e	11 ^e	11 ^e
CARE kV group	ON	ON		
Recon 1				
Type	Axial	Axial	Axial	Axial
keV				
Kernel (IR Strength)	Br40(2)	Br40(2)/ I40f(2)	Br40(3)	Br40(3)
Window	Abdomen	Abdomen	Abdomen	Abdomen
Slice (mm)	2	2	2	2
Increment (mm)	2	2	2	2
Other Recons				
Plane	Cor and Sag MPR (2.5/3 mm)	Cor and Sag MPR (2.5/3 mm)	Cor and Sag MPR (2.5/3 mm)	Cor and Sag MPR (2.5/3 mm)

ADULT MULTIPHASIC LIVER CT (Selected Siemens scanners) (continued)

PHASE 3: ABDOMEN WITH (PORTAL VENOUS)				
SIEMENS	Somatom Drive Somatom Flash (Dual source 128-slice)	Definition AS+/ Edge Plus (128- slice)	SOMATOM X.ceed (128-slice)	SOMATOM X.cite (128-slice)
Scan Mode	Spiral	Spiral	Spiral	Spiral
Rotation Time (s)	0.5	0.5	0.25	0.3
Pitch	0.8	0.8	0.6	0.6
Detector Configuration (mm)	128 × 0.6 ^a (64 × 0.6 = 38.4)	128 × 0.6 ^a (64 × 0.6 = 38.4)	128 × 0.6* (64 × 0.6 = 38.4)	128 × 0.6 ^a (64 × 0.6 = 38.4)
kV (ref.)	120	120	120	120
Quality ref. mAs	203	192	131	131
IQ Level			145	145
CARE Dose4D	ON	ON	Full	Full
CARE kV	ON ^c	ON ^c	Full ^c	Full ^c
CTDIvol (mGy)	13 ^e	13 ^e	11 ^e	11 ^e
CARE kV group	ON	ON		
Recon 1				
Type	Axial	Axial	Axial	Axial
keV				
Kernel (IR Strength)	Br40(2)	Br40(2)/ I40f(2)	Br40(3)	Br40(3)
Window	Abdomen	Abdomen	Abdomen	Abdomen
Slice (mm)	2	2	2	2
Increment (mm)	2	2	2	2
Other Recons				
Plane	Cor and Sag MPR (2.5/3 mm)	Cor and Sag MPR (2.5/3 mm)	Cor and Sag MPR (2.5/3 mm)	Cor and Sag MPR (2.5/3 mm)

ADULT MULTIPHASIC LIVER CT (Selected Siemens scanners) (continued)

PHASE 4: ABDOMEN WITH (DELAYED)				
SIEMENS	Somatom Drive Somatom Flash (Dual source 128-slice)	Definition AS+/ Edge Plus (128- slice)	SOMATOM X.ceed (128-slice)	SOMATOM X.cite (128-slice)
Scan Mode	Spiral	Spiral	Spiral	Spiral
Rotation Time (s)	0.5	0.5	0.25	0.3
Pitch	0.8	0.8	0.6	0.6
Detector Configuration (mm)	128 × 0.6 ^a (64 × 0.6 = 38.4)	128 × 0.6 ^a (64 × 0.6 = 38.4)	128 × 0.6* (64 × 0.6 = 38.4)	128 × 0.6 ^a (64 × 0.6 = 38.4)
kV (ref.)	120	120	120	120
Quality ref. mAs	203	192	131	131
IQ Level			145	145
CARE Dose4D	ON	ON	Full	Full
CARE kV	ON ^c	ON ^c	Full ^c	Full ^c
CTDIvol (mGy)	13 ^e	13 ^e	11 ^e	11 ^e
CARE kV group	ON	ON		
Recon 1				
Type	Axial	Axial	Axial	Axial
keV				
Kernel (IR Strength)	Br40(2)	Br40 (2)/ I40f (2)	Br40(3)	Br40(3)
Window	Abdomen	Abdomen	Abdomen	Abdomen
Slice (mm)	2	2	2	2
Increment (mm)	2	2	2	2

* Shorter rotation times should be considered if the required tube current-time product (mAs) can be reached.

a. Indicates that a z-axis “flying focal spot” technique is used to obtain twice as many projections per rotation as detector rows

b. If scanner is equipped with automatic kV selection (CARE kV), this should be activated by selecting “On”

c. Recommendation: Without contrast kV: range: 100-140 and Dose saving optimized for slider position = 3/non-contrast; With contrast kV range: 100-140; Dose saving optimized for slider position = 7/soft tissue with contrast

d. Recommendation: kV based on BMI if Automatic kV selection is not possible:

BMI < 25, use 100 kVp

BMI between 25-50, use 120 kVp

BMI > 50, Use 140 kVp

e. with ADMIRE, SAFIRE or IRIS

f. CTDIvol will be generated upon acquisition of the topogram. CARE Dose4D will adjust the mAs/eff. mAs to the patient based on the topogram. CTDIvol values for any given patient should be comparable or lower than the values associated with the manual mAs and kV approach.

ADULT MULTIPHASIC LIVER CT (Selected Siemens scanners) (continued)

TOPOGRAM: LAT (recommended first to ensure accurate vertical centering for AEC operation) and AP/PA. AP if automatic exposure control is used. PA if manual mA is used. If two Scouts are obtained, the second one must cover the entire intended scan range, as it is used to determine mA settings.

PHASE 1: ABDOMEN WITHOUT (OPTIONAL)		
SIEMENS	NAEOTOM Alpha (PCCT Dual source 144-slice)	Somatom Force (Dual source 192- slice)
Scan Mode	Spiral	Spiral
Rotation Time (s)	0.5	0.5
Pitch	0.8	0.8
Detector Configuration (mm)	144 x 0.4 (144 x 0.4 = 57.6)	192 x 0.6 ^a (96 x 0.6 = 57.6)
kV (ref.) or Manual	140	120
Quality ref. mAs	70	194
IQ Level	145	
CARE Dose4D	Full	ON
CARE kV or CARE k(e)V	Full ^c	ON ^c
CTDIvol (mGy)	8 ^e	13 ^e
CARE kV group		ON
Recon 1		
Type	Axial	Axial
keV	60	
Kernel (IR Strength)	Br40 (3)	Br40(2)
Window	Abdomen	Abdomen
Slice (mm)	5	5
Increment (mm)	5	5

ADULT MULTIPHASIC LIVER CT (Selected Siemens scanners) (continued)

PHASE 2: ABDOMEN WITH (LATE ARTERIAL)		
SIEMENS	NAEOTOM Alpha (PCCT Dual source 144-slice)	Somatom Force (Dual source 192- slice)
Scan Mode	Spiral	Spiral
Rotation Time (s)	0.5	0.5
Pitch	0.8	0.8
Detector Configuration (mm)	144 x 0.4 (144 x 0.4 = 57.6)	192 x 0.6 ^a (96 x 0.6 = 57.6)
kV (ref.)	140	120
Quality ref. mAs	70	194
IQ Level	145	
CARE Dose4D	Full	ON
CARE kV	Full ^c	ON ^c
CTDIvol (mGy)	8 ^e	13 ^e
CARE kV group		ON
Recon 1		
Type	Axial	Axial
keV	60	
Kernel (IR Strength)	Br40 (3)	Br40(2)
Window	Abdomen	Abdomen
Slice (mm)	5	2
Increment (mm)	5	2
Other Recons		
Plane	VNC Coronal and axial (60 keV)	Cor and Sag MPR (2.5/3 mm)

ADULT MULTIPHASIC LIVER CT (Selected Siemens scanners) (continued)

PHASE 3: ABDOMEN WITH (PORTAL VENOUS)		
SIEMENS	NAEOTOM Alpha (PCCT Dual source 144-slice)	Somatom Force (Dual source 192- slice)
Scan Mode	Spiral	Spiral
Rotation Time (s)	0.5	0.5
Pitch	0.8	0.8
Detector Configuration (mm)	144 x 0.4 (144 x 0.4 = 57.6)	192 x 0.6 ^a (96 x 0.6 = 57.6)
kV (ref.)	140	120
Quality ref. mAs	70	194
IQ Level	145	
CARE Dose4D	Full	ON
CARE kV	Full ^c	ON ^c
CTDIvol (mGy)	8 ^e	13 ^e
CARE kV group		ON
Recon 1		
Type	Axial	Axial
keV	60	
Kernel (IR Strength)	Br40 (3)	Br40(2)
Window	Abdomen	Abdomen
Slice (mm)	5	2
Increment (mm)	5	2
Other Recons		
Plane	VNC Coronal and axial (60 keV)	Cor and Sag MPR (2.5/3 mm)

ADULT MULTIPHASIC LIVER CT (Selected Siemens scanners) (continued)

PHASE 4: ABDOMEN WITH (DELAYED)		
SIEMENS	NAEOTOM Alpha (PCCT Dual source 144-slice)	Somatom Force (Dual source 192- slice)
Scan Mode	Spiral	Spiral
Rotation Time (s)	0.5	0.5
Pitch	0.8	0.8
Detector Configuration (mm)	144 x 0.4 (144 x 0.4 = 57.6)	192 x 0.6 ^a (96 x 0.6 = 57.6)
kV (ref.)	140	120
Quality ref. mAs	70	194
IQ Level	145	
CARE Dose4D	Full	ON
CARE kV	Full ^c	ON ^c
CTDIvol (mGy)	8 ^e	13 ^e
CARE kV group		ON
Recon 1		
Type	Axial	Axial
keV	60	
Kernel (IR Strength)	Br40 (3)	Br40(2)
Window	Abdomen	Abdomen
Slice (mm)	5	2
Increment (mm)	5	2

* Shorter rotation times should be considered if the required tube current-time product (mAs) can be reached.

a. Indicates that a z-axis “flying focal spot” technique is used to obtain twice as many projections per rotation as detector rows

b. If scanner is equipped with automatic kV selection (CARE kV), this should be activated by selecting “On”

c. Recommendation: Without contrast kV: range: 100-140 and Dose saving optimized for slider position = 3/non-contrast; With contrast kV range: 100-140; Dose saving optimized for slider position = 7/soft tissue with contrast

d. Recommendation: kV based on BMI if Automatic kV selection is not possible:

BMI < 25, use 100 kVp

BMI between 25-50, use 120 kVp

BMI > 50, Use 140 kVp

e. with ADMIRE, SAFIRE or IRIS

f. CTDIvol will be generated upon acquisition of the topogram. CARE Dose4D will adjust the mAs/eff. mAs to the patient based on the topogram. CTDIvol values for any given patient should be comparable or lower than the values associated with the manual mAs and kV approach.

ADULT MULTIPHASIC LIVER CT (Selected Siemens scanners) (continued)

TOPOGRAM: LAT (recommended first to ensure accurate vertical centering for AEC operation) and AP/PA. AP if automatic exposure control is used. PA if manual mA is used. If two Scouts are obtained, the second one must cover the entire intended scan range, as it is used to determine mA settings.

PHASE 2: ABDOMEN WITH (LATE ARTERIAL) – DUAL ENERGY			
Note: For non-contrast, Portal Venous and Delayed Phase refer SE Siemens Protocols			
SIEMENS	Somatom Drive Somatom Flash (Dual source 128-slice)	Somatom Force Somatom Drive? (Dual source 192-slice)	SOMATOM X.cite (128 twin beam)
Scan Mode	Spiral	Spiral	Spiral
Rotation Time (s)	0.5	0.5	0.25/0.5
Pitch	0.6	0.6	0.3/0.6
Detector Configuration (mm)	128 × 0.6 ^a (64 × 0.6 = 38.4)	2 × 192 × 0.6* (2 × 96 × 0.6 = 57.6)	128 × 0.6* (64 × 0.6 = 38.4)
kV (ref.)	Tube A: 80, Tube B: Sn140	Tube A: 100, Tube B: Sn150	AuSn 120
Quality ref. mAs / IQ Level	Tube A+B: 184	Tube A+B:190	463
CARE Dose4D	ON	ON	ON
CARE kV	OFF	OFF	ON
CTDIvol (mGy)	13 ^e	11.0	9.5
CARE kV group	OFF	OFF	ON
Recon 1*			
Type	Axial	Axial	Axial
Kernel (IR Strength)	Br40(3)	Br40(3)	Br40(3)
Window	Abdomen	Abdomen	Abdomen
Slice (mm)	2	2	2
Increment (mm)	2	2	2
Other Recons			
Plane	Cor and Sag MPR (2.5/3 mm)	Cor and Sag MPR (2.5/3 mm)	Cor and Sag MPR (2.5/3 mm)

*Additional DE recon options - Iodine Map, Mono+ 40; Data Role: DE Liver

a. Indicates that a z-axis “flying focal spot” technique is used to obtain twice as many projections per rotation as detector rows

e. with ADMIRE, SAFIRE or IRIS

ADULT MULTIPHASIC LIVER CT (Selected United Imaging scanners)[\(Back to INDEX\)](#)

Scout: Frontal, 600 mm coverage, 500mm FOV, 120 kV, 40 mA. HeadToFeet direction.

PHASE 1: ABDOMEN WITHOUT (OPTIONAL)			
	uCT550-40	uCT550-80	uCT760
Scan Type	Helical	Helical	Helical
Rotation Time (s)	0.8	0.8	0.5
Collimation	40 x 0.55mm	40 x 0.55mm*	80 x 0.5mm@
Coverage (mm)	22	22	40
KV	120	120	120
mAs	180	180	180
Tube Current Modulation	Active	Active	Active
Pitch	1.075	1.075	0.9875
SFOV (mm)	500	500	500
CTDIvol (mGy)**	15.1	15.1	15.22
DLP (mGy*cm)	486.66	486.66	517.99
RECON 1			
Type	Axial	Axial	Axial
Window	Abdomen	Abdomen	Abdomen
Filter	B_Soft_B	B_Soft_B	B_Soft_B
Enhancement	0	0	0
Thickness (mm)	5	5	5
Increment (mm)	5	5	5
Matrix	512 x 512	512 x 512	512 x 512
Karl Level	5	5	5

ADULT MULTIPHASIC LIVER CT (Selected United Imaging scanners) (continued)

PHASE 2: ABDOMEN WITH (LATE ARTERIAL)			
	uCT550-40	uCT550-80	uCT760
Scan Type	Helical	Helical	Helical
Rotation Time (s)	0.7	0.7	0.5
Collimation	40 x 0.55mm	40 x 0.55mm*	80 x 0.5mm@
Coverage (mm)	22	22	40
KV	120	120	120
mAs	150	150	150
Tube Current Modulation	Active	Active	Active
Pitch	1.075	1.075	0.9875
SFOV (mm)	500	500	500
CTDIvol (mGy)**	12.59	12.59	12.68
DLP (mGy*cm)	405.79	405.79	431.66
RECON 1			
Type	Axial	Axial	Axial
Window	Abdomen	Abdomen	Abdomen
Filter	B_Soft_B	B_Soft_B	B_Soft_B
Enhancement	0	0	0
Thickness (mm)	5	5	5
Increment (mm)	5	5	5
Matrix	512 x 512	512 x 512	512 x 512
Karl Level	5	5	5
Other Recons			
Type	Cor and Sag MPR (2.5/3 mm)	Cor and Sag MPR (2.5/3 mm)	Cor and Sag MPR (2.5/3 mm)

ADULT MULTIPHASIC LIVER CT (Selected United Imaging scanners) (continued)

PHASE 3: ABDOMEN WITH (PORTAL VENOUS)			
	uCT550-40	uCT550-80	uCT760
Scan Type	Helical	Helical	Helical
Rotation Time (s)	0.8	0.8	0.5
Collimation	40 x 0.55mm	40 x 0.55mm*	80 x 0.5mm@
Coverage (mm)	22	22	40
KV	120	120	120
mAs	150	150	150
Tube Current Modulation	Active	Active	Active
Pitch	1.075	1.075	0.9875
SFOV (mm)	500	500	500
CTDIvol (mGy)**	12.58	12.58	12.68
DLP (mGy*cm)	405.55	405.55	431.66
RECON 1			
Type	Axial	Axial	Axial
Window	Soft Tissue	Abdomen	Abdomen
Filter	B_Soft_B	B_Soft_B	B_Soft_B
Enhancement	0	0	0
Thickness (mm)	5	5	5
Increment (mm)	5	5	5
Matrix	512 x 512	512 x 512	512 x 512
Karl Level	5	5	5
Other Recons			
Type	Cor and Sag MPR (2.5/3 mm)	Cor and Sag MPR (2.5/3 mm)	Cor and Sag MPR (2.5/3 mm)

ADULT MULTIPHASIC LIVER CT (Selected United Imaging scanners) (continued)

PHASE 4: ABDOMEN WITH (DELAYED)			
	uCT550-40	uCT550-80	uCT760
Scan Type	Helical	Helical	Helical
Rotation Time (s)	0.8	0.8	0.5
Collimation	40 x 0.55mm	40 x 0.55mm*	80 x 0.5mm@
Coverage (mm)	22	22	40
KV	120	120	120
mAs	150	150	150
Tube Current Modulation	Active	Active	Active
Pitch	1.075	1.075	0.9875
SFOV (mm)	500	500	500
CTDIvol (mGy)**	12.58	12.58	12.68
DLP (mGy*cm)	405.55	405.55	431.66
RECON 1			
Type	Axial	Axial	Axial
Window	Abdomen	Abdomen	Abdomen
Filter	B_Soft_B	B_Soft_B	B_Soft_B
Enhancement	0	0	0
Thickness (mm)	5	5	5
Increment (mm)	5	5	5
Matrix	512 x 512	512 x 512	512 x 512
Karl Level	5	5	5

* Indicates that a z-axis "flying focal spot" technique is used to obtain twice as many projections per rotation

** Indicates for a standard sized patient, defined as 5'7", 155 pounds

@ Indicates that the system uses an overlap reconstruction algorithm

ADULT MULTIPHASIC LIVER CT (Selected United Imaging scanners) (continued)

Scout: Frontal, 600 mm coverage, 500mm FOV, 120 kV, 40 mA. HeadToFeet direction.

PHASE 1: ABDOMEN WITHOUT (OPTIONAL)			
	uCT780	uCT Atlas Astound 4cm	uCT Atlas 16cm
Scan Type	Helical	Helical	Helical
Rotation Time (s)	0.5	0.5	0.5
Collimation	80 x 0.5mm@	80 x 0.5mm*	160 x 0.5mm*
Coverage (mm)	40	40	80
KV	120	120	120
mAs	180	180	200
Tube Current Modulation	Active	Active	Active
Pitch	0.9875	0.9875	0.9937
SFOV (mm)	500	500	500
CTDIvol (mGy)**	15.22	13.676	15.89
DLP (mGy*cm)	517.99	465.38	604.69
RECON 1			
Type	Axial	Axial	Axial
Window	Abdomen	Abdomen	Abdomen
Filter	B_Soft_B	B_Soft_B	B_Soft_B
Enhancement	0	0	0
Thickness (mm)	5	5	5
Increment (mm)	5	5	5
Matrix	512 x 512	512 x 512	512 x 512
Karl Level	5	5	5

ADULT MULTIPHASIC LIVER CT (Selected United Imaging scanners) (continued)

PHASE 2: ABDOMEN WITH (LATE ARTERIAL)			
	uCT780	uCT Atlas Astound 4cm	uCT Atlas 16cm
Scan Type	Helical	Helical	Helical
Rotation Time (s)	0.5	0.5	0.5
Collimation	80 x 0.5mm@	80 x 0.5mm*	160 x 0.5mm*
Coverage (mm)	40	40	80
KV	120	120	120
mAs	150	150	150
Tube Current Modulation	Active	Active	Active
Pitch	0.9875	0.9875	0.9937
SFOV (mm)	500	500	500
CTDIvol (mGy)**	12.68	11.396	11.92
DLP (mGy*cm)	431.66	387.82	453.52
RECON 1			
Type	Axial	Axial	Axial
Window	Abdomen	Abdomen	Abdomen
Filter	B_Soft_B	B_Soft_B	B_Soft_B
Enhancement	0	0	0
Thickness (mm)	5	5	5
Increment (mm)	5	5	5
Matrix	512 x 512	512 x 512	512 x 512
Karl Level	5	5	5
Other Recons			
Type	Cor and Sag MPR (2.5/3 mm)	Cor and Sag MPR (2.5/3 mm)	Cor and Sag MPR (2.5/3 mm)

ADULT MULTIPHASIC LIVER CT (Selected United Imaging scanners) (continued)

PHASE 3: ABDOMEN WITH (PORTAL VENOUS)			
	uCT780	uCT Atlas Astound 4cm	uCT Atlas 16cm
Scan Type	Helical	Helical	Helical
Rotation Time (s)	0.5	0.5	0.5
Collimation	80 x 0.5mm@	80 x 0.5mm*	160 x 0.5mm*
Coverage (mm)	40	40	80
KV	120	120	120
mAs	150	150	150
Tube Current Modulation	Active	Active	Active
Pitch	0.9875	0.9875	0.9937
SFOV (mm)	500	500	500
CTDIvol (mGy)**	12.68	11.396	11.92
DLP (mGy*cm)	431.66	387.82	453.52
RECON 1			
Type	Axial	Axial	Axial
Window	Abdomen	Abdomen	Abdomen
Filter	B_Soft_B	B_Soft_B	B_Soft_B
Enhancement	0	0	0
Thickness (mm)	5	5	5
Increment (mm)	5	5	5
Matrix	512 x 512	512 x 512	512 x 512
Karl Level	5	5	5
Other Recons			
Type	Cor and Sag MPR (2.5/3 mm)	Cor and Sag MPR (2.5/3 mm)	Cor and Sag MPR (2.5/3 mm)

ADULT MULTIPHASIC LIVER CT (Selected United Imaging scanners) (continued)

PHASE 4: ABDOMEN WITH (DELAYED)			
	uCT780	uCT Atlas Astound 4cm	uCT Atlas 16cm
Scan Type	Helical	Helical	Helical
Rotation Time (s)	0.5	0.5	0.5
Collimation	80 x 0.5mm@	80 x 0.5mm*	160 x 0.5mm*
Coverage (mm)	40	40	80
KV	120	120	120
mAs	150	150	150
Tube Current Modulation	Active	Active	Active
Pitch	0.9875	0.9875	0.9937
SFOV (mm)	500	500	500
CTDIvol (mGy)**	12.68	11.396	11.92
DLP (mGy*cm)	431.66	387.82	453.52
RECON 1			
Type	Axial	Axial	Axial
Window	Abdomen	Abdomen	Abdomen
Filter	B_Soft_B	B_Soft_B	B_Soft_B
Enhancement	0	0	0
Thickness (mm)	5	5	5
Increment (mm)	5	5	5
Matrix	512 x 512	512 x 512	512 x 512
Karl Level	5	5	5

* Indicates that a z-axis "flying focal spot" technique is used to obtain twice as many projections per rotation

** Indicates for a standard sized patient, defined as 5'7", 155 pounds

@ Indicates that the system uses an overlap reconstruction algorithm