TOSHIBA
Leading Innovation >>>

MSSW-MRSM/S1

ADVANCED PROTON SPECTROSCOPY PACKAGE
for Vantage Titan™ 3T

APPLICATION

This package* is optional for the Vantage Titan 3T systems. It enables data acquisition and processing for multivoxel proton spectroscopy.

Proton spectroscopy provides spectral and metabolic information for enhanced diagnostic confidence in neuro examinations and is fully integrated in the imaging routine.

*: To use the ADVANCED PROTON SPECTROSCOPY PACKAGE, the PROTON SPECTROSCOPY PACKAGE (MSSW-MRSS/S1) is required.

FEATURES

- Multivoxel spectroscopy.
- Data acquisition with Spin Echo.
- Spectral data processing and analysis is performed at the operator console.
- Spectroscopy data and locator images can be printed to film and stored on the system hard disk, MOD or DVD.
- Chemical-shift images can be generated.
- Automatic adjustments.

CONFIGURATION

- Advanced proton spectroscopy software.

PERFORMANCE SPECIFICATIONS

MRI system

• Field strength:	3 T
• Target nucleus:	^{1}H (Proton)
• Target anatomy:	Head
• RF coil:	QD Head coil, Circular coil, Atlas SPEEDER™ Head can be used.
• Data acquisition:	Multi-voxel
– Pulse sequence:	Spin Echo
– Repetition time (TR):	1,500 ms to 30,000 ms
– Echo time (TE)	
· Spin Echo:	136, 272 ms
– Voxel orientation:	Orthogonal, oblique
– Voxel size:	Min. $5 \times 5 \times 5$ mm, variable
– Number of Acquisitions (NAQ):	Max. 256, variable
– Matrix size	
· 1 Dimensional:	8, 12, 16, 24, 32, 48, 64
· 2 Dimensional:	8, 12, 16, 24, 32

• Voxel localization:	Setting ROI on the arbitrary MR image
• Prescan (Automatic):	Transmitter gain control Local shimming Center frequency Water suppression (flip angle optimization) Receiver gain
• Data processing	
– Receiver gain correction:	Auto
– Baseline correction:	Auto (Elimination of residual water)
– DC offset correction:	Auto
– Filtering:	Auto (Exponential filters)
– Fourier transformation:	Auto
– Frequency correction:	Auto

The following processings are also possible with user interface.

– Phase correction:	0 or first order (automatic or manual)
– Base line correction:	Polynomial fitting
– Curve fitting	
– Statistical processing:	Measurements of peak, area, and area ratio to creatine (Cr)
– Scaling:	Y-axis (signal intensity), X-axis (frequency)
• Display	
– Single voxel display	
– Multi-voxel display	
– CSI (Chemical Shift Imaging):	Addition, subtraction, and division for 2 metabolites
– Peak information	
– ROI for reference:	ROI display on the locator image
• Data management (archive)	
– Hard disk	
– External MOD or DVD	
• Print to film	
– MR images	
– Spectroscopy data	

MASS

Unit	Mass (kg)
ADVANCED PROTON SPECTROSCOPY PACKAGE	Approx. 0.5

DRAFT

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