Specification

Media

RDX

Built-in 3.5-inch RDX drive x1	SATA interface	
Compatible RDX cartridge types	HDD and SSD	
Recording capacities	HDD : 500GB - 1TB / SSD : 64GB - 512GB	
Available cartridge	Operation verified : Imation RDX cartridges	
Media that has been verified to operate with this system	Imation	
	500GB	RDX-500GB-IMN
	1TB	RDX-1TB-IMN
	docking station	RDX-USB3-EXT-DOCK
	Tandberg Data	
	500GB	8541
	1TB	8586
	docking station	RDXQuikStor

SDHC

SDHC card slot x1		
Compatible media	SDHC cards (SDXC not supported)	
Recording capacity	4GB - 32GB	
Speed class	Class 10 recommended	
Media that has been verified to operate with this system	SanDisk	
	4GB	SDSDX-004G-J35
	8GB	SDSDU-008G-J35 / SDSDX-008G-J35 / SDSDX-008G-J95
	16GB	SDSDU-016G-J35 / SDSDX-016G-J35 / SDSDXPA-016G-J35
	32GB	SDSDXPA-032G-J35

Analog signal input channels

Input amplifier switching	Can be switched between DC input and PA input	
Input signal type	DC input	PA input
Number of input channels	16	
Input connectors	BNC (Z=50Ω type)	
Input format	Unbalanced	
Input impedance	1 MΩ or more	
Input signal and amplifier coupling	DC coupling	AC coupling
Input range options	±0.1,0.2,0.5,1,2,5,10,20V	
Input filter	-	Analog filter
High pass filter	-	3rd-order Butterworth analog filter 10 Hz (within ±0.5 dB), 20 Hz (within ±0.5 dB)
Weighting	-	A curve, C curve or flat IEC-TYPE1
Absolute maximum input volt-age (input range value)	±50V(0.1,0.2,0.5,1,2,5V) ±100V(10,20V)	
2-color input level LED (red/green)	Lights green when input level exceeds 10% of its input range and lights red when it exceeds 115%.	Lights green when input level exceeds 10% of its input range and lights red when it exceeds 115%. Lights both green and red when there is no ICP current.
Input signal quantization bit depth	24-bit or 16-bit switchable	
Over range	±127%(+2.08dB)	
Analog-digital conversion method	ΔΣ method with 24-bit, 128x oversampling	
Input frequency flatness characteristics (0 dB at 100 Hz) (Sampling frequency / 2.4)	10V or less input range Band (40kHz or less): ±0.5 dB or less Band (80kHz or less): +0.5 to – 1.0 dB 20V input range Band (20kHz or less): ±0.5 dB or less Band (80kHz or less): +0.5 to – 2.5 dB	
Input range precision	±2% or less	
Nonlinearity	±0.1% or less	-
Input DC drift stability	±0.1% or less 10 or more minutes after power supplied	-
OFFSET, gain correction	Correction function available	
Measured frequency of phase contrast between input channels (Sampling frequency / 2.4)	10V or less input range Band (20kHz or less): 1° or less (in same expansion unit) 2° or less (in different expansion unit) Band (80kHz or less): 3° or less 20V input range Band (20kHz or less): 2° or less (in same expansion unit) 3° or less (in different expansion unit) Band (80kHz or less): 3° or less	

Voltage supplied to ICP sensors	-	Can be set to 28V or 24V DC for each expansion unit (all 16 channels at once)
ICP sensor constant current source	-	Can be set to OFF, 0.5 mA or 4 mA per channel
ICP sensor interruption detection	-	Each channel has ICP sensor interruption detection
TEDS	-	Supports TEDS Ver. 1.1

DC/PA input amplifier signal to noise (SN) ratio

Input range	Band (20kHz or less)		Band (40kHz or less)		Band (80kHz or less)	
	16bit	24bit	16bit	24bit	16bit	24bit
Up to 1V	85dB	87dB	84dB	85dB	82dB	82dB
1 – 20V	87dB	98dB	87dB	93dB	86dB	91dB

DC/PA input amplifier distortion : 0.1% or less
DC/PA input amplifier crosstalk : -80dB
Noise level compared to 100% of the given input range
Signal leakage level from other channels compared to 100% of the given input range.

Analog signal output channels

Number of output channels	16
Output connectors	BNC (Z=50Ω type)
Onput format	Unbalanced
Onput impedance	50Ω±10%
Output range setting	±1 to ±5V selectable in 0.1V increments
Maximum output current	±10mA(into 20Ω load)
Quantization bit depth	24-bit or 16-bit switchable
Digital-analog conversion	ΔΣ method with 24-bit, 128x oversampling
Output frequency flatness characteristics	(10V or less input range) Band (20kHz or less) : ±0.5dB or less Band (40kHz or less) : +0.5 to – 1.0 dB or less Band (80kHz or less) : +0.5 to – 2.5 dB or less (20V input range) Band (20kHz or less) : +0.5 to – 1.0 dB or less Band (40kHz or less) : +0.5 to – 1.5 dB or less Band (80kHz or less) : +0.5 to – 3.0 dB or less
Output range precision	±2% or less
Output nonlinearity	±0.1% or less
Output distortion (THD)	±0.1% or less
Output dynamic range (1V input range in 20kHz band or less)	24bit : 97dB 16bit : 89dB

Signal to noise (SN) ration (1V input range)	Band(20kHz or less)		Band(40kHz or less)		Band(80kHz or less)	
	16bit	24bit	16bit	24bit	16bit	24bit
	87dB	95dB	87dB	92dB	78dB	82dB

Crosstalk between output channels (1V input range)	-74dB or more
Measured frequency of phase contrast between output channels	(10V or less input range) Band (20kHz or less): 1.5° or less (in same expansion unit) 2° or less (in different expansion unit) Band (80kHz or less): 3° or less (20V input range) Band (20kHz or less): 2° or less (in same expansion unit) 3° or less (in different expansion unit) Band (80kHz or less): 3° or less

AR-WXIRGPS

connectors (IRIG)	BNC : The terminal for acquiring the signal from IRIG-B126 IRIG-B120-B123
connectors (GPS)	Dsub9Pin (male) : The terminal for acquiring the signal from NMEA0183 WX-7000 clock can be adjusted using the time information acquired by IRIG and GPS.
Recording of time information / Playback of time information	Possible to record the data (time record that provided by GPS or IRIG-B126,IRIG-B120-B123) to the measurement channel by orginal format. An applicable channel (CH1) is occupied by the original format data. The signal is outputted during playback.
Recording of location information	Possible to record GPS information. Possible to select as follows two items. 1.Recording location information to measurement channels 2.Not recording location information to measurement channels

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TEAC®

Portable Wide-Band Data Recorder

WX-7000 Series

http://datarecorder.jp/en

Portable high-bandwidth Data Recorder with extended recording time.
Selectable 16/24-bit resolution for optimal dynamic range.
Multiple channel configurations to address a wide range of applications.

WX-7016

The WX-7000 Series, a new Portable Instrumentation Data Recorder family of products, are designed to provide multi-channel high-bandwidth data recording solutions for testing and monitoring requirements in aerospace, defense, power generation, underwater research, rail transportation, automotive, heavy machinery, and acoustics/vibration-based industrial applications.

Base model is WX-7016; 32, 64 and 128 channel models are available.

16ch model WX-7016

32ch model WX-7032

64ch model WX-7064

128ch model WX-7128

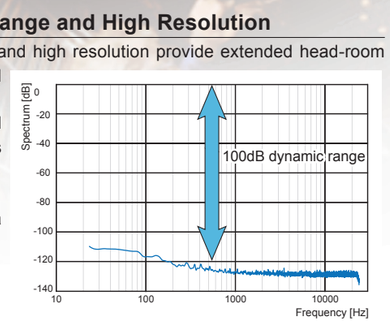
High-speed, Multi-channel and Long recording time in comparison to AIT tape data recorders.

WX-7000 series from TEAC provide reliable data recording with protection from catastrophic data loss

128ch model
WX-7128

Wide Dynamic Range and High Resolution

Wide dynamic range and high resolution provide extended head-room input range to record transientphenomenon. 24 bit analog to digital conversion provides high-resolution measurement, avoiding low level data buried in noise.



Extended Recording Time

With the use of 500GB RDX media, WX-7000 records 36 times longer than AIT data recorder. There is no need to change media frequently to record long term test data.

TEDS (Transducer Electronic Data Sheet) support

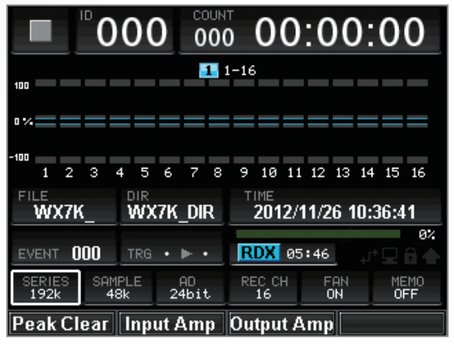
TEDS function recognizes sensitivity information from transducers electronically, reducing set-up time and eliminating cabling errors.

Reliable Recording Media

WX-7000 unit and recording media (RDX , SDHC) are rugged and reliable.
SDHC card has no moving part and is shockproof media.
RDX is a disk-based (HDD/SSD) storage system with removable cartridges which offers rugged, reliable and convenient data storage.
RDX cartridge is shockproof which against 1m (39.4")drop to tile over concrete floor.

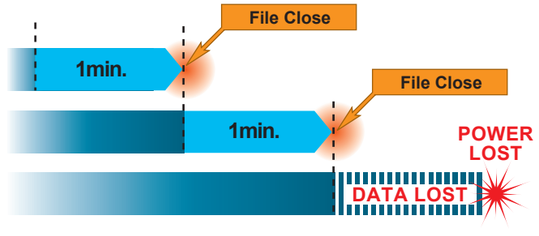
User-friendly, Intuitive Operation

3.5 inch LCD is provided on front panel, for user-friendly operation. Recorder settings are shown on the display.
It's easy to monitor and change main parameters on home screen, with easy to access additional set-up menu pages.



Fail-safe Recording

WX-7000 closes the data file after every one minute while recording. Even if an unexpected or mistaken power outage happens during recording, all recorded data from one minute before power loss is saved and is available for review and replay.

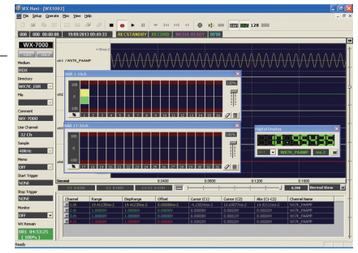


Software Support

(Commercial product) OPTION

WX Navi Control and Viewing Software for WX-7000

3.5 inch LCD is provided on front panel, for user-friendly operation. Recorder settings are shown on the display. It's easy to monitor and change main parameters on home screen, with easy to access additional set-up menu pages.



Control API

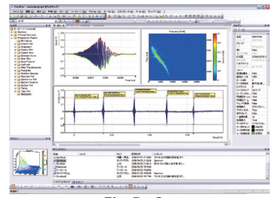
Control API is provided as a Windows DLL(Dynamic-Link Library) which can be linked from a upper program. Control, Settings, Real-time Transferring Data, Downloading Recorded Data File are available using this Control API. Data analysis software developer, system integrator can use this Control API in order to add these functions to their existing system.

TAFFmat (TEAC data Acquisition File Format) Data File

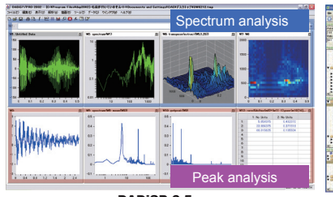
TAFFmat is widely supported by major data analysis software. Recorded data file by WX-7000 can be analyzed using data analysis software which is currently used.

Category	Software	Note
General	DADiSP	
	FlexPro	
	DIAdem	
	FAMOS	
	Matlab	Script file can be provided
NVH	LMS Test.Lab	
	B&K PULSE	16 bit only
Turbine Test	EDAS SIGnal Workbench	

General analysis software (Commercial product)



FlexPro9
Developed by Weisang GmbH



DADiSP 6.5
Developed by DSP Development Corporation

EDAS
WWW.EDASINC.COM

Sampling frequencies and bands

Series 1		Series 2		Series 3		Series 4	
Fs (kHz)	Band (kHz)	Fs (kHz)	Band (kHz)	Fs (kHz)	Band (kHz)	Fs (kHz)	Band (kHz)
192.00	80.00	200.00	83.33	204.80	85.33	131.07	54.61
96.00	40.00	100.00	41.67	102.40	42.67	65.54	27.31
48.00	20.00	50.00	20.83	51.20	21.33	32.77	13.65
24.00	10.00	20.00	8.33	25.60	10.67	16.38	6.83
12.00	5.00	10.00	4.17	12.80	5.33	8.19	3.41
6.00	2.50	5.00	2.08	5.12	2.13	4.10	1.71
3.00	1.25	2.00	0.83	2.56	1.07	2.05	0.85
1.50	0.63	1.00	0.42	1.28	0.53	1.02	0.43

Sampling frequencies and bands Sampling frequency (Fs)/2.4 = band

Number of channels that can be recorded simultaneously

Fs (kHz)				RDX recording 6MB/s		SDHC recording 1.5MB/s	
Series 1	Series 2	Series 3	Series 4	16bit	24bit	16bit	24bit
192.00	200.00	204.80	131.07	16ch	8ch	-	-
96.00	100.00	102.40	65.54	32ch	16ch	8ch	-
48.00	50.00	51.20	32.77	64ch	32ch	16ch	8ch
24.00	20.00	25.60	16.38	128ch	64ch	32ch	16ch
12.00	10.00	12.80	8.19	128ch	128ch	64ch	32ch
6.00	5.00	5.12	4.10	128ch	128ch	128ch	64ch
3.00	2.00	2.56	2.05	128ch	128ch	128ch	128ch
1.50	1.00	1.28	1.02	128ch	128ch	128ch	128ch

Series 1	Corresponds to DAT/audio sampling frequencies
Series 2	Corresponds to integer frequencies
Series 3	Frequency axis during 2N FFT analysis : integrated in resolution
Series 4	Frequency axis during 2N FFT analysis : integrated in resolution

Recording times

The following tables show approximate recording times for different media capacities according to the combination of sampling frequency, recording bit depth and recording media.

Approximate total recording times for a 1TB RDX HDD (in days, hours:minutes:seconds)

		16-bit					24-bit				
Fs (kHz)	Band (kHz)	8ch	16ch	32ch	64ch	128ch	8ch	16ch	32ch	64ch	128ch
192.00	80.00	3 days, 18:10:58	1 day, 21:09:00				1 day, 21:09:00				
96.00	40.00	7 days, 11:53:54	3 days, 18:10:58	1 day, 21:09:00			3 days, 18:10:58	1 day, 21:09:00			
48.00	20.00	14 days, 21:56:32	7 days, 11:53:54	3 days, 18:10:58	1 day, 21:09:00		7 days, 11:53:54	3 days, 18:10:58	1 day, 21:09:00		
24.00	10.00	29 days, 12:34:47	14 days, 21:56:32	7 days, 11:53:54	3 days, 18:10:58	1 day, 21:09:00	14 days, 21:56:32	7 days, 11:53:54	3 days, 18:10:58	1 day, 21:09:00	
12.00	5.00	57 days, 20:48:58	29 days, 12:34:47	14 days, 21:56:32	7 days, 11:53:54	3 days, 18:10:58	29 days, 12:34:47	14 days, 21:56:32	7 days, 11:53:54	3 days, 18:10:58	1 day, 21:09:00
6.00	2.50	111 days, 6:48:00	57 days, 20:48:58	29 days, 12:34:47	14 days, 21:56:32	7 days, 11:53:54	57 days, 20:48:58	29 days, 12:34:47	14 days, 21:56:32	7 days, 11:53:54	3 days, 18:10:58
3.00	1.25	206 days, 16:03:27	111 days, 6:48:00	57 days, 20:48:58	29 days, 12:34:47	14 days, 21:56:32	111 days, 6:48:00	57 days, 20:48:58	29 days, 12:34:47	14 days, 21:56:32	7 days, 11:53:54
1.50	0.63	361 days, 16:06:02	206 days, 16:03:27	111 days, 6:48:00	57 days, 20:48:58	29 days, 12:34:47	206 days, 16:03:27	111 days, 6:48:00	57 days, 20:48:58	29 days, 12:34:47	14 days, 21:56:32

Approximate total recording times for a 32GB SDHC (in days, hours:minutes:seconds)

		16-bit					24-bit				
Fs (kHz)	Band (kHz)	8ch	16ch	32ch	64ch	128ch	8ch	16ch	32ch	64ch	128ch
192.00	80.00										
96.00	40.00	5:44:51									
48.00	20.00	11:26:10	5:44:51				5:44:51				
24.00	10.00	22:38:19	11:26:10	5:44:51			11:26:10	5:44:51			
12.00	5.00	1 day, 20:22:18	22:38:19	11:26:10	5:44:51		22:38:19	11:26:10	5:44:51		
6.00	2.50	3 days, 13:19:48	1 day, 20:22:18	22:38:19	11:26:10	5:44:51	1 day, 20:22:18	22:38:19	11:26:10	5:44:51	
3.00	1.25	6 days, 14:28:12	3 days, 13:19:48	1 day, 20:22:18	22:38:19	11:26:10	3 days, 13:19:48	1 day, 20:22:18	22:38:19	11:26:10	5:44:51
1.50	0.63	11 days, 13:19:22	6 days, 14:28:12	3 days, 13:19:48	1 day, 20:22:18	22:38:19	6 days, 14:28:12	3 days, 13:19:48	1 day, 20:22:18	22:38:19	11:26:10