



NMR spectrometer **ZETA**
JNM-ECZR series

World's Latest • Next Generation NMR Spectrometer

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JNM-ECZR series

The FT NMR spectrometer ZETA (JNM-ECZR) series is a new system that fully incorporates the latest digital and high frequency technologies.

Improved reliability and a more compact size make possible by incorporating more advanced integrated circuits, it supports even greater expandability options than current models for multi-channel operation, high power amplifiers and other accessories.

The bus line for control of attachments has been upgraded to high speed and enables highly accurate and rapid control.

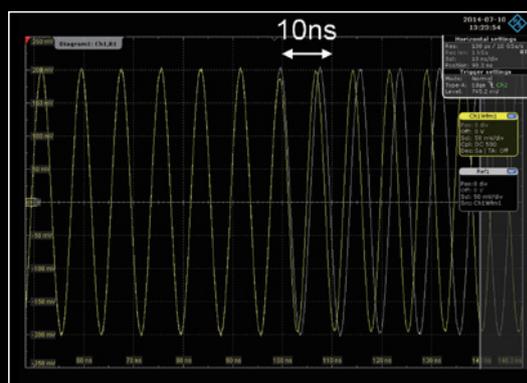
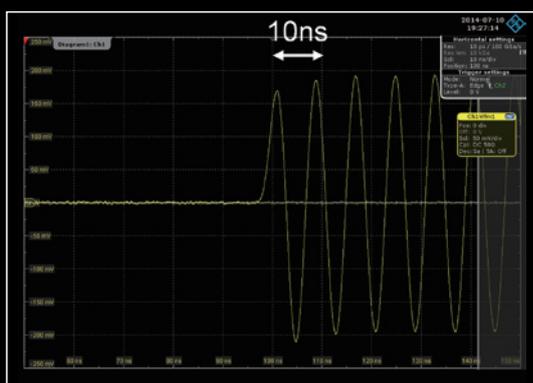


Latest Digital and High Frequency Technology

STS (Smart Transceiver System)

STS is a transceiver (transmitter / receiver) system offering high performance in a compact size using a fusion of integrated digital circuit technology and the latest high frequency technology.

The design, optimized for efficient transceiving and high precision digital signal processing, gives rapid and precise control of RF (radio frequency). The compact unit is equipped with signal receiver and transmitter functions that allows generation of up to 8 independent frequencies, and enables event control at 5 nanosecond resolution.



The receiver system uses high speed sampling at 16 bit 100 Msp, maximum observation range 10 MHz, and improves the effective dynamic range up to the equivalent of 22-24 bits using a high over-sampling rate. The use of a 64 bit acquisition word length ensures error-free prolonged measurements.

Lock feedback circuitry gives high stability measurements

The lock feedback circuit provides digital control of the interlock between the lock frequency and the shim controller. It provides accurate digital control of the response necessary for any magnetic field variations arising from environmental changes.

Highly stable temperature control system

The improved response in the probe heater and control unit achieves highly stable sample temperatures.

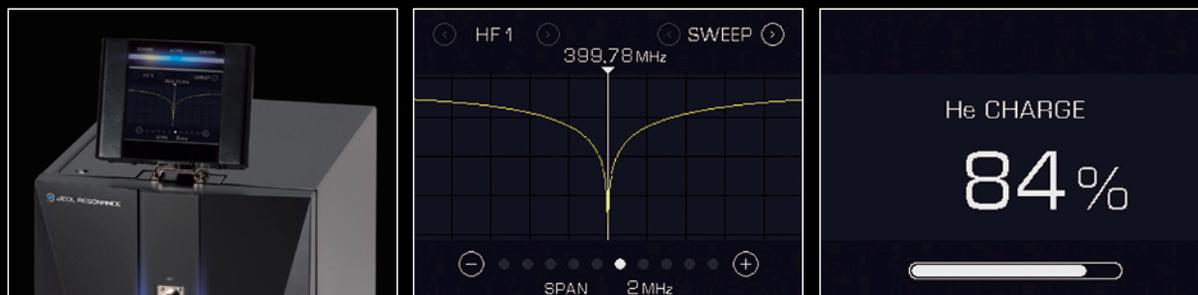
The high speed control bus line that connects the spectrometer to attachments has been improved and provides rapid and stable operation of attachments.

By incorporating the NMR lock function and the magnetic field gradient control function into one module, the interlock between the lock feedback circuit and the spectrometer control computer is enhanced. This makes possible the precise response necessary for any magnetic field variations arising from environmental or other changes.



Enhanced usability

The head amp chassis is equipped with functions that facilitate probe tuning. A touch panel display at the top of the head amp chassis provides an intuitive user interface. The panel displays items that are helpful for each step in operation, including a reflective dip and value (bar) for probe tuning, and the remaining cryogen amount when refilling liquid helium or liquid nitrogen. This significantly enhances the ease of operation.



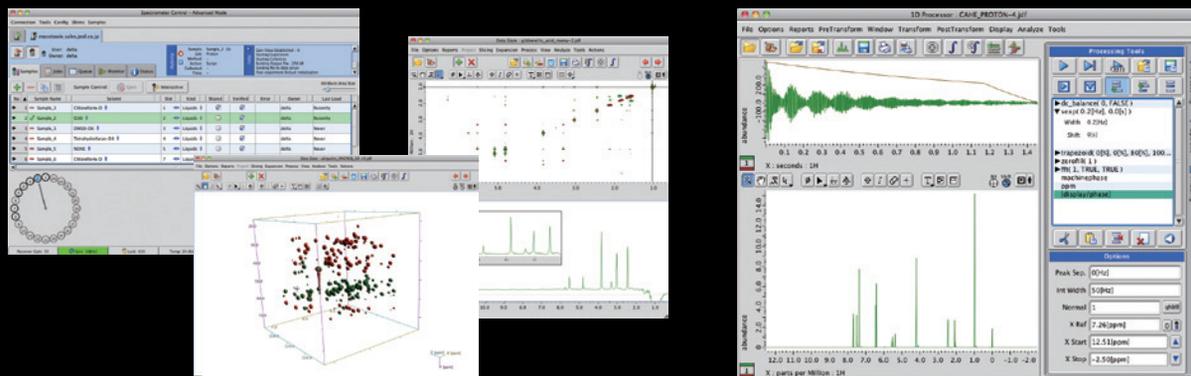
Improved functionality and unique design

The spectrometer features enhanced functionality, ease of operation, and an attractive design.



Intuitive control software

Incorporating an additional interface for simple, routine operation, the Delta software for spectrometer control and data processing supports both simple and sophisticated applications. A minimum sequence of operation is needed for routine, standard analysis, such as selection of a solvent or measurement mode. For more complicated analysis with numerous conditions, the system will automatically define hardware parameters, including those for the spectrometer and probe, allowing the operator to set up only the conditions specific to the sample or research objective.



Flexible room layout

Compared to the JNM-ECA II series, the spectrometer requires a 67% more compact size. All system units, including the magnet and compact auto multi sample changer, can be laid out efficiently in a small room.



Installation Requirements

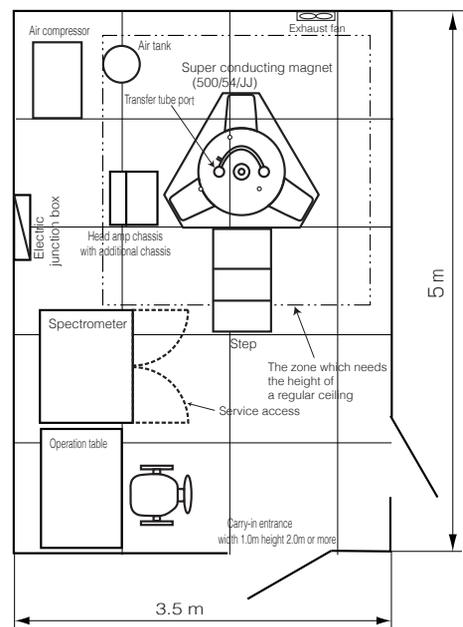
Power supplies required for installation

Spectrometer	Single phase AC100V to 240V, 50/60Hz 3kVA
Data system	Single phase AC100V to 240V, 50/60Hz 1kVA
Air Compressor (400MHz)	Single phase AC100V, 50/60Hz 30A
Air Compressor (500MHz or higher)	Three phase AC200V, 50/60Hz 30A
Backup	Single phase AC100/120V, 50/60Hz 3kVA
Ground resistance	100Ω or lower

Note : Long term low temperature air supplier (option) needs separate power supply.

Installation room 500MHz

Temperature range	17 to 27 °C (fluctuation:1°C/h or less)
Humidity	70% or less
Ceiling height	2.87 m or more (top of the SCM)
0.5mT position	Vertical: 1.15 m from SCM center Radial: 0.60 m from SCM center



The layout picture above is an example of the ECZR installation room. Recommend room layout may vary depending on the spectrometer configuration and apparatus in the room.

example of 500 MHz

*specifications subject change without notice.



High technology for quality assurance and the environment.

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1-2 Musashino 3-chome Akishima Tokyo 196-8558 Japan Sales Division Telephone:+81-3-6262-3560 Facsimile:+81-3-6262-3577

<http://www.jeol.com/>

ARGENTINA
COASIN S.A.C.I.yF.
Virrey del Pino 4071,
C1430CAM-Buenos Aires
Argentina
Tel. 54-11-4552-3185
Fax. 54-11-4555-3321

AUSTRALIA & NEW ZEALAND
JEOL(AUSTRALASIA) Pty.Ltd.
Suite 1, L2 18 Aquatic Drive
- Frenchs Forest NSW 2086
Australia
Tel. 61-2-9451-3855
Fax. 61-2-9451-3822

AUSTRIA
JEOL (GERMANY) GmbH
Oskar-Von-Miller-Strasse 1a, 85386
Eching, Germany
Tel. 49-8165-77346
Fax. 49-8165-77512

BANGLADESH
A.Q. CHOWDHURY SCIENCE & SYNERGY PVT. LTD.
87, Suhrawardy Avenue, Floor 2
Baridhara, Dhaka1212
Bangladesh
Tel. 8802-9862272, 8953450, 8953501
Fax. 8802-9854428

BELGIUM
JEOL (EUROPE) B.V.
Planet II, Gebouw B
Leuvensesteenweg 542,
B-1930 Zaventem
Belgium
Tel.32-2-720-0560
Fax.32-2-720-6134

BRASIL
JEOL Brasil Instrumentos Cientificos Ltda.
Av. Jabaquara, 2958 5º andar cj. 52
04046-500 Sao Paulo, SP
Brasil
Tel. 55-11-5070 4000
Fax. 55-11-5070 4010

CANADA
JEOL CANADA, INC.
3275 Tere Rue, Local #8
St-Hubert, QC J3Y-8Y6, Canada
Tel. 1-450-676-8776
Fax. 1-450-676-6694

CHILE
ARQUIMED INNOVATION
Arturo Prat 828,
Santiago, Chile
Tel. 56-2-634-6266
Fax. 56-2-634-4633

CHINA
JEOL(BEIJING) CO., LTD.
Room B1010/1110, Wantong New World Plaza No. 2
Fuchengmenwai Street, Xicheng District,
Beijing 100037, P.R.China
Tel. 86-10-6804-6321
Fax. 86-10-6804-6324

JEOL (BEIJING) CO., LTD., SHANGHAI BRANCH
Room 1505/1506, Nol 300Xi Kang Road,
Jing an Dist., Shanghai, 200040, China
Tel. 86-21-6248-4868/4487/4537/4404
Fax. 86-21-6248-4075

JEOL (BEIJING) CO., LTD., GUANG ZHOU BRANCH
N1601, World Trade Center Building,
#371-375, Huan Shi Road East, Guang Zhou,
Guangdong Prov., 510095, P.R.China
Tel. 86-20-8778-7848
Fax. 86-20-8778-4268

JEOL (BEIJING) CO., LTD., WUHAN BRANCH
Room A2118, Zhongshang Plaza Office Bldg.,
No. 7 Zhongnan Road, Wuhan,
Hubei, 430071, P.R.China
Tel. 86-27-8713-2567
Fax. 86-27-8713-2567

JEOL LTD. (BEIJING) CO., LTD., CHENGDU BRANCH
1807A Zongfu Building,
NO. 35 Zhongfu Road, Chengdu, Sichuan, 610016
P.R. China
Tel. 86-28-86622554
Fax. 86-28-86622564

EGYPT
JEOL SERVICE BUREAU
3rd Fl. Nile Center Bldg., Nawal Street,
Dokki, (Cairo), Egypt
Tel. 20-2-3335-7220
Fax. 20-2-3338-4186

FRANCE
JEOL (EUROPE) SAS
Espace Claude Monet, 1 Allée de Giverny
78290, Croissy-sur-Seine, France
Tel. 33-13015-3737
Fax. 33-13015-3747

GERMANY
JEOL (GERMANY) GmbH
Oskar-Von-Miller-Strasse 1a, 85386
Eching, Germany
Tel. 49-8165-77346
Fax. 49-8165-77512

GREAT BRITAIN & IRELAND
JEOL (U.K.) LTD.
JEOL House, Silver Court, Watchmead,
Welwyn Garden City, Herts AL7 1LT, U.K.
Tel. 44-1707-377117
Fax. 44-1707-373254

GREECE
N. ASTERJADIS S.A.
56-58, S. Trikoupi Str, P.O. Box 26140
GR-10022, Athens, Greece
Tel. 30-1-823-5383
Fax. 30-1-823-9567

HONG KONG
FARMING LTD.
Unit No. 1009, 10/F, Prosperity
663 King's Road, North Point, Hong Kong
Tel. 852-2815-7299
Fax. 852-2581-4635

INDIA
JEOL INDIA Pvt. Ltd.
Elegance Tower, Level 2, 212B
Old Mathura Road, Jasola Business District Centre,
Near Apollo Hospital Jasola,
New Delhi 110 025, India
Tel. 91-11-6472-2578
Fax. 91-11-4060-1235

JEOL India Pvt. Ltd, Mumbai Branch
Fergus Mumbai,
Levada Ground & 1, Trade Centre Bandra Kuria Complex 1108,
Bandra (E) Mumbai, 400051, India
Tel : +91-22-40700700

INDONESIA
PT. TEKNOABINDO Penta Perkasa
Komplek Gading Bukit Indah Blok I/11
Jl. Bukit Gading Raya Kelapa Gading Permai,
Jakarta 14240, Indonesia
Tel. 62-21-45847057/58
Fax. 62-21-45842729

ITALY
JEOL (ITALIA) S.p.A.
Palazzo Pacinotti - Milano 3 City,
Via Ludovico il Moro, 6/A
20080 Basiglio(MI) Italy
Tel. 39-02-6041431
Fax. 39-02-90414343

KOREA
JEOL KOREA LTD.
Dongwoo Bldg, 7F, 1443, Yangjae Daero,
Gangdong-Gu, Seoul, 134-010, Korea
Tel. 82-2-511-5501
Fax. 82-2-511-2635

KUWAIT
Ashraf & CO, Ltd,
P.O.Box 3555 Safat 13036, Kuwait
Tel. 965-1805151
Fax. 965-24335373

MALAYSIA
JEOL(MALAYSIA) SDN.BHD.
508, Block A, Level 5,
Kelana Business Center,
97, Jalan SS 7/2, Kelana Jaya,
47301 Petaling Jaya, Selangor, Malaysia
Tel. 60-3-7492-7722
Fax. 60-3-7492-7723

MEXICO
JEOL DE MEXICO S.A. DE C.V.
Arkansas 11 Piso 2
Colonia Napoles
Delegacion Benito Juarez, C.P. 03810
Mexico D.F., Mexico
Tel. 52-5-55-211-4511
Fax. 52-5-55-211-0720

PAKISTAN (Karachi)
ANALYTICAL MEASURING SYSTEM (PVT) LTD.(AMS LTD.)
14-C Main Sehar Commercial Avenue Lane 4,
Khayaban-e-Sehar,
D.H.A-VII, Karachi-75500, Pakistan
Tel. 92-21-35345581/35340747
Fax. 92-21-35345582

PANAMA
PROMED S.A.
Parque Industrial Costa del Este
Urbanizacion Costa del Este
Apartado 0816-01755, Panama, Panama
Tel. 507-303-3100
Fax. 507-303-3115

PHILIPPINES
PHILAB INDUSTRIES INC.
7487 Bagtikan Street, SAV Makati,
1203 Metro, Manila Philippines
Tel. 63-2-896-6658
Fax. 63-2-897-7732

PORTUGAL
Izasa Portugal Lda.
R. do Proletariado, 1
2790-138 CARNAXIDE, Portugal
Tel. 351-21-424-73-00
Fax. 351-21-418-60-20

RUSSIA
JEOL (RUS) LLC.
Krasnoprolletarskaya Street, 16,
Bld. 2, 127473, Moscow,
Russian Federation
Tel. 7-495-748-7791/7792
Fax. 7-495-748-7793

SAUDI ARABIA
ABDULREHMAN ALGOSAIBI G.T.C. (Riyadh)
Algoasaibi Building-Old Airport Road
P.O. Box 215, Riyadh-11411, Saudi Arabia
Tel. 966-1-477-7932

SCANDINAVIA
SWEDEN
JEOL (Skandinaviska)AB:
Hammarbacken 6A, Box 716, 191 27 Solentuna
Sweden
Tel. 46-8-28-2800
Fax. 46-8-29-1647

SINGAPORE
2 Corporation Road
#01-12 Corporation Place
Singapore 618494
Tel. 65-6565-9989
Fax. 65-6565-7552

SOUTH AFRICA
ADI Scientific (Pty) Ltd.
370 Angus Crescent,
Northlands Business Park, 29 Newmarket Road
Northridge, Randburg, Republic of South Africa
Tel. 27-11-462-1363
Fax. 27-11-462-1466

SPAIN
IZASA, S.A.
Argoneses, 13, 28100 Alcobendas,
(Poligono Industrial), Madrid, Spain
Tel. 34-91-663-0500
Fax. 34-91-663-0545

SWITZERLAND
JEOL (GERMANY) GmbH
Oskar-Von-Miller Strasse 1,
85386 Eching, Germany
Tel. 49-8165-77346
Fax. 49-8165-77512

TAIWAN
JIE DONG CO., LTD.
7F, 112, Chung Hsiao East Road,
Section 1, Taipei, Taiwan 10023
Republic of China
Tel. 886-2-2395-2978
Fax. 886-2-2322-4655

For NMR & Mass Spectrometer Products
Widertan Technologies Corp.
No.8-2., No.77, Sec.2, Zhonghua E Rd.,
East Dist., Tainan City 701, Taiwan(R.O.C.)
Tel. 886-6-289-1943
Fax. 886-6-289-1743

(For Mass Spectrometer Products)
Tech Max Technical Co., Ltd.
5F, No.11, Wuquan 2nd Rd., Wugu Dist.,
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Fax. 886-2-8990-2559

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Tel. 886-3-523-8490
Fax. 886-3-523-8503

THAILAND
BECTHAI BANGKOK EQUIPMENT & CHEMICAL CO., LTD.
300 Phaholyothin Rd. Phayathai, Bangkok 10400,
Thailand
Tel. 66-2-615-2929
Fax. 66-2-615-2350/2351

JEOL ASEAN TECHNICAL CENTER (JATC)
MTEC building room 533
114 Moo9, Thailand Science Park
Phaholyothin Rd., Klong 1, Klong Luang,
Pathumthani 12120
THAILAND
Tel. 66-2-564-7738
Fax. 66-2-564-7739

THE NETHERLANDS
JEOL (EUROPE) B.V.
Lireweg 4, NL-2153 PH Nieuw-Vennep,
The Netherlands
Tel. 31-252-623500
Fax. 31-252-623501

TURKEY
Tekser A.S.
Kartal Cad. No: 55/3 Inonu Wah.,
Atasehir 34755, Istanbul, Turkey
Tel. 90-216-5735470
Fax. 90-216-5736475

UAE
MRS Group Dubai
P.O.Box: 171612,
Rashid Abdulla Al Noami Building
Suite No. 306, Damascus Street,
Al Qusais-3, Dubai, U.A.E.
Tel. 971-4-2581141
Fax. 971-4-2581151

Gulf Bio Analytical LLC
Office No.902, Sapphire Tower,
Al Itihad Road, Near DNATA Building,
Deira Dubai, UAE
(P.O.Box 28932)
Tel. 971-4250-7300
Fax. 971-4250-7400

JEOL Gulf
c/o Gulf Bio Analytical LLC
Office No.902, Sapphire Tower,
Al Itihad Road, Near Dnata Building,
Deira Dubai, UAE
(P.O.Box 28832)
Tel. 971-4-2579228
Fax. 971-4-2579448

USA
JEOL USA, INC.
11 Dearborn Road, Peabody, MA 01960, U.S.A.
Tel. 1-978-535-5900
Fax. 1-978-536-2205/2206

JEOL USA, INC. WEST OFFICE
5653 Stoneridge Drive Suite #110
Pleasanton, CA 94588, U.S.A.
Tel. 1-925-737-1740
Fax. 1-925-737-1749

VENEZUELA
GOMSA Service and Supply C.A.
Urbanizacion Montalban III
- Residencias Don Andres - Piso 7 - Apartamento 74
Avenida 3, entre calles 7 y 6
Montalban, Caracas, Venezuela
Tel. 58-212-443-4342
Fax. 58-212-443-4342

VIETNAM
TECHNICAL MATERIALS AND RESOURCES
IMPORT-EXPORT JOINT STOCK COMPANY(REXCO)
Hanoi Branch,
No. 13-Lot 12 Trung Yen, Trung Hoa Street,
Cau Giay Dist, Hanoi, Vietnam
Tel. 84-43-562-0516
Fax. 84-43-853-2511