Product Brochure

/inritsu

CMA50 Series
Optical Loss Test Set/Optical Power Meter

CMA5 Series
Light Source/Optical Power Meter

Supports Optical FTTH/CATV/Backbones/ LAN Installation and Maintenance

The CMA50 series (Optical Loss Test Set/Optical Power Meter) supports measurement of optical power and loss of all wavelengths used by MM and SM fiber installations. It is the ideal measurement solution for installing and maintaining optical LAN, Access, CATV, Core, and Metro networks.

The Optical Loss Test Set model supports an optional EZ Test function (added function B) for measuring end-to-end optical loss by auto-switching multiple wavelengths. Eliminating the need to switch the wavelength setting at the light source and power meter for every measurement greatly increases on-site work efficiency. Models with the ORL function (added function O) option can measure return loss.

The CMA50 series is designed for both simple measurement and easy understanding of measured results. Results are evaluated based on preset threshold values for speedy and efficient confirmation. The main unit can save up to 100,000 data items, which are easily moved to a back-office PC via Ethernet or USB port for easy and efficient data processing.
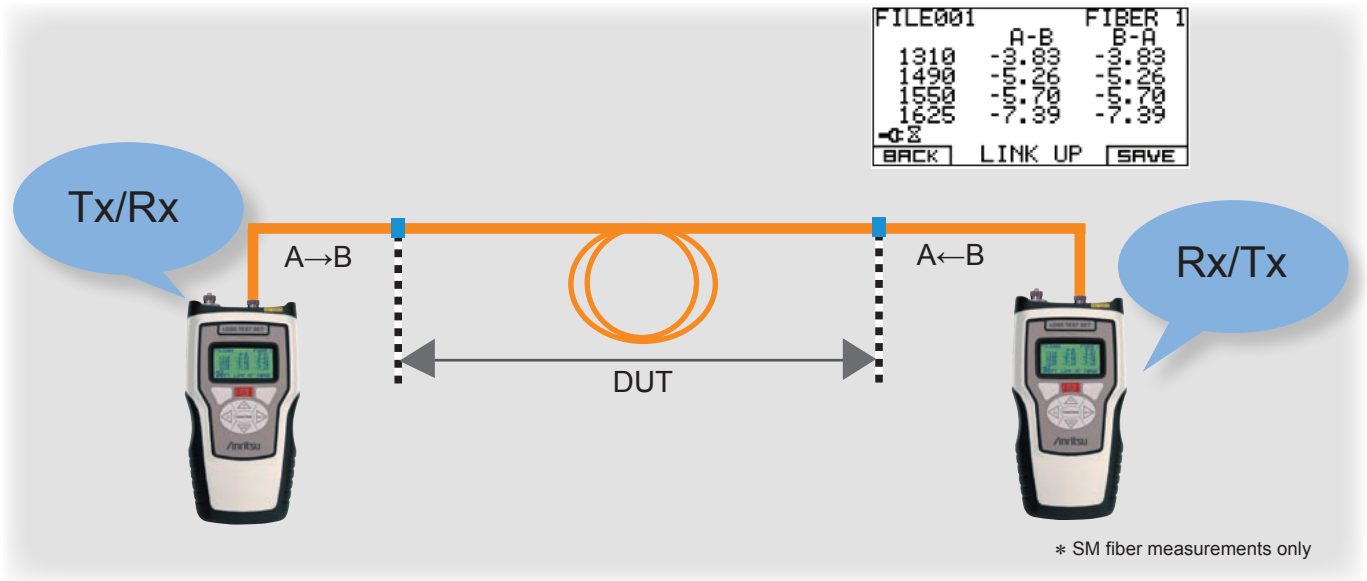
Key Functions

- All-in-one unit supports both light source and optical power meter (Optical Loss Test Set)
- All-in-one unit supports four wavelengths:
    LED light source (850 nm/1300 nm)
    LD light source (1310 nm/1550 nm)
- EZ test function option supports auto-switching of wavelengths and end-to-end measurements (added function B)
- Supports return loss measurements (added function O)
- 1490 nm light source for FTTH PON system installation and maintenance
- Pass/Fail function with set threshold value
- Saves up to 100,000 measurement items
- Easy access from PC to CMA50 internal memory via USB cable
- Built-in visible light source (Optical Loss Test Set model)
- Optional network test function
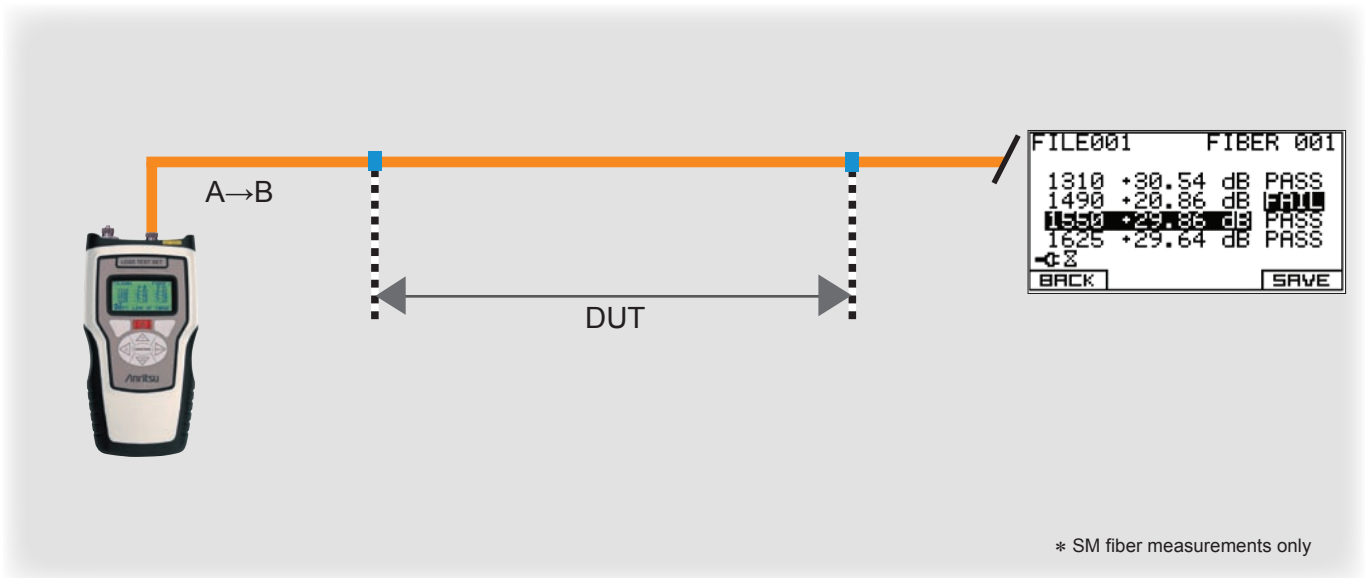
Improve On-site Work Efficiency

● EZ Test Function (added function B)

The Optical Loss Test Set model with optional EZ test function can measure optical loss while automatically switching wavelengths, eliminating the need for time-consuming manual wavelength switching as well as changing send and receive ports at end-to-end testing.

* SM fiber measurements only

● ORL Function (added function O)

The Optical Loss Test Set with optional ORL (optical return loss) function and EZ test function measures return loss for multiple wavelengths simultaneously.

* SM fiber measurements only

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Specifications

Optical Loss Test Set			
	Light Source Ports (dual wavelength model)	Light Source Ports (four wavelength model)	
Model	50LTS35	50LTS3456	50LTS8335*3
Emitter Type	LD	LD	LED on MM port, LD on SM port
Wavelength*1	1310/1550 ±20 nm	1310/1490/1550/1625 ±20 nm	850 ±20 nm, 1300 +30/–20 nm (MM) 1310/1550 ±20 nm (SM)
Output Power	≥–7 dBm (ITU-T G.852 fiber)	≥–7 dBm (ITU-T G.852 fiber)	≥–7 dBm ≥–20 dBm (62.5 μm/125 μm GI fiber)
Source Line Width (FWHM)	<5 nm (1310/1490/1550/1625 nm), <50 nm (850 nm), <200 nm (1300 nm)		
Stability*2	±0.05 dB (1310 nm/1550 nm), ±0.15 dB (1490 nm/1625 nm), ±0.1 dB (850 nm/1300 nm)		
Optical Power Meter Port			
Model	Standard		CATV Model
Wavelength	850/1300/1310/1490/1550/1625 nm CWDM wavelengths (ITU-T G694.2)		850/1300/1310/1490/1550/1625 nm CWDM wavelengths (ITU-T G694.2)
Detector Type	InGaAs-PD		InGaAs-PD
Measurement Range	–75 to +10 dBm		–50 to +27 dBm
Accuracy*4, *5	±0.2 dB (±5%) (–65 to +5 dBm)		±0.2 dB (±5%) (–37 to +27 dBm)
Linearity*1	±0.1 dB (–65 to +2 dBm)		±0.1dB (–37 to +23 dBm)
Maximum Input Power	+10 dBm		+27 dBm
General Specifications			
Laser Safety*6	IEC 60825-1: 2007: CLASS 1 21CFR1040.10 Excludes deviations caused by conformance to Laser Notice No. 50 dated June 24, 2007		
Modulation Output	CW, 270 Hz, 1 kHz, 2 kHz		
Modulation Detection*7	270 Hz, 1 kHz, 2 kHz		
Display Resolution	0.01 (mW, μW, nW , dBr, dBm)		
Power Supply	Rechargeable battery pack, four AA batteries or 110 V (ac)/220 V (ac) adapter		
Battery Operation Time	20 h (typ.)		
Auto Shutoff	1 to 99 minutes (On/Off switchable)		
Connector Type	FC, SC, ST, DIN, LC		
Operating Temperature Range	–10° to +50°C		
Storage Temperature Range	–25° to +60°C		
Dimensions	110 (W) × 210 (H) × 41.3 (D) mm		
Mass	<910 g (inc. batteries)		
Warranty	3 years		
EMC	EN61326-1, EN55011		
LVD	EN61010-1		

Optical Power Meter	
Standard	
Model	50PMS
Wavelength	850/1300/1310/1490/1550/1625 nm CWDM wavelengths (ITU-T G694.2)
Measurement Range	–75 to +10 dBm
Detector Type	InGaAs-PD
Accuracy*4, *5	±0.2 dB (±5%) (–65 to +5 dBm)
Linearity*1	±0.1 dB (–65 to +2 dBm)
Maximum Input Power	+10 dBm
General Specifications	
Modulation Detection*7	270 Hz, 1 kHz, 2 kHz
Display Resolution	0.01 (mW, μW, nW, dBr, dBm)
Power Supply	Rechargeable battery pack, four AA batteries or 110 V (ac)/220 V (ac) adapter
Battery Operation Time	20 h (typ.)
Auto Shutoff	1 to 99 minutes (On/Off switchable)
Connector Type	FC, SC, ST, DIN, LC
Operating Temperature Range	–10° to +50°C
Storage Temperature Range	–25° to +60°C
Dimensions	110 (W) × 210 (H) × 41.3 (D) mm
Mass	<910 g (inc. batteries)
Warranty	3 years
EMC	EN61326-1, EN55011
LVD	EN61010-1

EZ Test	
B Option	
Wavelength	Single mode only
Link Loss Range*8	50 dB (200 km, 1550 nm) (typ.)
Link Loss Accuracy*8	±0.25 dB
VFL	
50-OPT-V	
Laser Safety*6	IEC 60825-1: 2007 CLASS 3R 21CFR 1040.10 Excludes deviations caused by conformance to Laser Notice No. 50 dated June 24, 2007
Wavelength	650 ±20 nm
Output Power	Max. 1 mW, 0.8 mW (typ.) (ITU-T G.652 fiber)
Output Modes	CW, 2 Hz modulation
Optical Return Loss (ORL)	
O Option	
Wavelength	Single mode only
ORL Range	0 to 55 dB
ORL Accuracy	±0.75 dB (0 to 50 dB) ±1.5 dB (50 to 55 dB)
ORL Stability	±0.5 dB (20 ±0.5 dB)

*6: Safety measures for laser products
  This product complies with optical safety standards in 21CFR1040.10 and IEC 60825-1; the following descriptive labels are affixed to the product.

⚠ IEC 60825-1: 2007
CLASS 1 LASER PRODUCT

THIS PRODUCT COMPLIES WITH 21 CFR 1040.10 AND 1040.11 EXCEPT FOR DEVIATIONS PURSUANT TO LASER NOTICE NO. 50, DATED JUNE 24, 2007

⚠ IEC 60825-1:2007
VISIBLE LASER RADIATION
AVOID DIRECT EYE EXPOSURE
(MAX OUTPUT POWER)   (PULSE DURATION)   (WAVELENGTH)
5mW   CW   650±20nm
CLASS 3R LASER PRODUCT

*1: 23°C (typ.)
*2: After 10 minutes warm-up
*3: The 50LTS8335 unit has one port each for SM fiber and multiport mode.
*4: Calibrated with1310 nm at –10 dBm and 23°C
*5: Accuracy differs at 1000-nm wavelength. 850 nm: ±0.35 dB

*7: Input power: ≥–50 dBm
*8: Connector pair uncertainty: ±CW accuracy (23°C)

Ordering Information

Please specify the model/order number, name and quantity when ordering.
The names listed in the chart below are Order Names. The actual name of the item may differ from the Order Name.

(1) Specify one main frame.

Model/Order No.	Description	
	Standard accessories	
	CMA50 Operation Manual:	1 pc
	NiMH Battery Pack:	1 pc
	AC Adapter:	1 pc
	USB Cable:	1 pc
	Software CD:	1 pc
50PMS-xx	**Optical Power Meter Model**	
	850/1300/1310/1490/1550/1625 nm (–75 to +10 dBm)	
	Optical Loss Test Set Model＊1	
	[Dual Wavelength Model for SM]	
50LTS35XS-xxx	1310/1550 nm + S Function	
50LTS35BS-xxx	1310/1550 nm + B + S Functions	
	[Four Wavelength Model for SM]	
50LTS3456BS-xxx	1310/1490/1550/1625 nm + B + S Functions	
50LTS3456BC-xxx	1310/1490/1550/1625 nm + B + C Functions	
50LTS3456OS-xxx	1310/1490/1550/1625 nm + B + O + S Functions	
50LTS3456OC-xxx	1310/1490/1550/1625 nm + B + O + C Functions	
	[Four Wavelength Model for SM/MM]＊2	
50LTS8335XS-xxx	850/1300/1310/1550/1625 nm + S Function	
50LTS8335BS-xxx	850/1300/1310/1550/1625 nm + B + S Functions	
50LTS8335OC-xxx	850/1300/1310/1550/1625 nm + B + O + C Function	

Symbols in model name indicate following functions installed
  X: Standard Function
  B: EZ Test Function＊3
  O: Optical Return Loss (ORL) Function＊3, ＊4, ＊5
  S: Optical Power Meter (Standard: –75 to +10 dBm)
  C: Optical Power Meter (CATV: –50 to +27 dBm)

(2) Specify one optical connector.

Specify connector type for (1) "xx" or "xxx" from below.＊6

Optical Power Meter Model	Optical Loss Test Set Model
FC (FC Connector)	UFC (FC Connector)
SC (SC Connector)	USC (SC Connector)
ST (ST Connector)	UST (ST Connector)
LC (LC Connector)	ULC (LC Connector)
DN (DIN Connector)	UDN (DIN Connector)
	AFC (FC-APC Connector)＊7
	ASC (SC-ASC Connector)＊7

(3) Select options and accessories from below.

Model/Order No.	Description
	Options
50-OPT-N	Network Test
50-OPT-V＊8	Visible Light Source (VFL)
	Accessories
CMA50-HARDCASE	Hard Carrying Case
CMA50-POUCH-A	Carrying Pouch/Shoulder Strap
CMA50-BATT	NiMH Battery Pack
Z1526A	AC Adapter (CMA50)
CMA50-USB	USB Cable
GN-MANDREL＊9	Mandrel for ORL Measurement
LP-FC	FC Connector (PM port)
LP-SC	SC Connector (PM port)
LP-ST	ST Connector (PM port)
LP-LC	LC Connector (PM port)
LP-DIN	DIN Connector (PM port)
UNIV-AFC	FC-APC Connector (Light source port)
UNIV-FC	FC Connector (Light source port)
UNIV-FCSCST	FC, SC and ST Connector (Light source port)
UNIV-LC	LC Connector (Light source port)
UNIV-SC	SC-PC or SC-APC Connector (Light source port)
UNIV-ST	ST Connector (Light source port)
UNIV-DN	DIN Connector (Light source port)

＊1: Optical loss test set (LTS) model has built-in visible light source.
＊2: When different connector adapters are required for light source SM and MM ports, order either adapter as an accessory.
＊3: The automatic measurement (EZ test) and ORL functions only support SM fiber. MM fiber is not supported.
＊4: Models with the ORL function option also have the automatic measurement (EZ test) function.
＊5: When selecting a model with the ORL function, always use an AFC connector for the SM light source port. When specifying a different connector from AFC at (2), a conversion patch cord is supplied as a standard accessory.
    (Example: When the 50LTS3456OC-USC is specified, the FC/APC-SC/UPC conversion patch cord is supplied.)
＊6: When different connector adapters are required for light sources and optical power meters, order either adapter as an accessory.
＊7: Not supported for MM light source. When specifying the 50LTS8335, only the SM port is supported. The UPC type connector is supplied for the MM light source port.
    (Example: When the 50LTS8335BS-ASC is specified, the ASC connector for SM port and USC connector for MM port are supplied.)
＊8: Standard accessory for optical loss test set (LTS), so specification not required.
＊9: Used for reference measurement at ORL measurement. Standard accessory when selecting model with ORL function.

CMA5 Series

Compact and Lightweight for Optical Fiber Installation and Maintenance

■ Light Source

Supports MM model (850 nm/1300 nm), SM model (1310 nm/1550 nm)

Lightweight at only 250 g

16 hours of continuous running with 9 V alkaline battery

Light source for fiber identification (270 Hz, 1 kHz, 2 kHz and CW)

Light Source*	
SM Model	1310 nm/1550 nm
MM Model	850 nm/1300 nm

∗: One 9 V alkaline battery as standard. No AC adapter.

■ Specifications

Model/Order No.	5L83	5L35
Emitter Type	LD	
Wavelength	850/1300 ±20 nm	1310/1550 ±20 nm
Output Power*1	−7 dBm (62.5 µm/125 µm MM fiber)	−7 dBm (SM fiber)
Source Line Width (FWHM)	<5 nm	
Modulation Output	CW, 270 Hz, 1 kHz, 2 kHz	
Stability (8 hours)	±0.1 dB (25°C)	
Connector Type	FC, ST, SC (User replaceable)	
Battery Operation Time	16 h (9 V alkaline battery)	
Input Power	9 V (9 V alkaline battery)	
AC Adapter (Option)	Input: 100 to 240 V, 50 to 60 Hz, Output: 7.5 V	
Operating Temperature Range	−10° to +50°C	
Storage Temperature Range	−25° to +60°C	
Relative Humidity	0 to 95% (no condensation)	
Dimensions	75 (W) × 145 (H) × 25 (D) mm (excl. rubber cover)	
Mass	250 g	
Warranty	3 years	
Laser Safety*2	IEC 60825-1: 2007 CLASS 1 21CFR 1040.10 Excludes deviations caused by conformance to Laser Notice No. 50 dated June 24, 2007	
EMC	EN61326-1, EN61000-3-2	

∗1: Typical (25°C)

∗2: Safety measures for laser products
This product complies with optical safety standards in 21CFR1040.10 and IEC 60825-1; the following descriptive labels are affixed to the product.

CLASS 1 LASER PRODUCT

THIS PRODUCT COMPLIES WITH 21 CFR 1040. 10 AND 1040. 11 EXCEPT FOR DEVIATIONS PURSUANT TO LASER NOTICE NO. 50, DATED JUNE 24, 2007

■ Ordering Information

Please specify the model/order number, name and quantity when ordering.

The names listed in the chart below are Order Names. The actual name of the item may differ from the Order Name.

Model/Order No.	Description
5L35-YY* 5L83-YY*	**Main frame** Light Source: 1310 nm/1550 nm (Dual wavelength for SM fiber) Light Source: 850 nm/1300 nm (Four wavelength for MM fiber)
	Standard accessories CMA5 Operation Manual: 1 pc Rubber Protective Cover: 1 pc 9 V Alkaline Battery: 1 pc
GN-3HH-CASE CMA5-POUCH-A CMA5-BAT Z1525A CMA5-AD-LS-FC CMA5-AD-LS-SC CMA5-AD-LS-ST CMA5-AD-LS-ALL3	**Accessories** Hard Case (for two CMA5 light sources or optical power meter) Carrying Pouch/Shoulder Strap 9 V Alkaline Battery AC Adapter (CMA5) FC Connector Adapter SC Connector Adapter ST Connector Adapter Connector Adapter (FC, SC and ST)

∗: Specify one connector adapter for YY.
FU=FC/PC, SU=SC/PC, TU=ST/PC, FA=FC/APC, SA=SC/APC
(FA=FC/APC and SA=SC/APC cannot be selected for 5L83-YY.)

∗: Photographs about same size as actual instruments.

■ Optical Power Meter

Lightweight at only 250 g

40 hours of continuous running with 9 V alkaline battery

Measures up to +23 dBm optical power[*1]

*1: CATV model

Optical Power Meter* (Calibrated for 850, 1300, 1310, 1490, 1550, and 1625 nm)	
Standard Model	–60 to +10 dBm
CATV Model	–50 to +23 dBm

*: One 9 V alkaline battery as standard. No AC adapter.

■ Specifications

Model/Order No.	5P100	5P100C
Connector Type	FC, SC, ST (User replaceable)	
Fiber Type	MM, SM	
Detector Type	InGaAs-PD	
Calibrated Wavelength	850/1300/1310/1490/1550/1625 nm	
Measurement Range	–60 to +10 dBm (–50 to +10 dBm @ 850 nm)	–50 to +23 dBm
Accuracy[*1]	±0.2 dB @ 1310/1550 nm (–60 to +5 dBm) ±0.5 dB @ 850 nm (–50 to +5 dBm)	±0.2 dB @ 1310/550 nm (–40 to +23 dBm) ±0.5 dB @ 850 nm (–40 to +23 dBm)
Linearity[*2]	±0.2 dB @ 1310/1550 nm (–60 to +5 dBm) ±0.5 dB @ 850 nm (–50 to +5 dBm)	±0.2 dB @ 1310/1550 nm (–40 to +23 dBm) ±0.5 dB @ 850 nm (–40 to +23 dBm)
Display Resolution	0.01 dB	
Modulation Detection	2 kHz modulation	
Display	4-digit, 7-segment display LCD	
Others	Reference setting function, battery level display, automatic power OFF	
Battery Operation Time	40 hours min. (9 V alkaline battery)	
Input Power	9 V (one alkaline battery)	
AC Adapter (Option)	Input: 100 to 240 V, 50 to 60 Hz, Output: 7.5 V	
Operating Temperature Range	–10° to +50°C	
Storage Temperature Range	–25° to +60°C	
Relative Humidity	0 to 95% (no condensation)	
Dimensions	75 (W) × 145 (H) × 25 (D) mm (excl. rubber cover)	
Mass	250 g	
Warranty	3 years	
EMC	EN61326-1, EN61000-3-2	

*1: –10 dBm, 25°C (typ.)

*2: 25°C

■ Ordering Information

Please specify the model/order number, name and quantity when ordering.

The names listed in the chart below are Order Names. The actual name of the item may differ from the Order Name.

Model/Order No.	Description	
5P100-YY* 5P100C-YY*	**Main frame** Optical Power Meter (Standard): –60 to +10 dBm Optical Power Meter (CATV): –50 to +23 dBm	
	Standard accessories CMA5 Operation Manual: Rubber Protective Cover: 9 V Alkaline Battery:	1 pc 1 pc 1 pc
GN-3HH-CASE CMA5-POUCH-A CMA5-BAT Z1525A CMA5-AD-PM-FC CMA5-AD-PM-SC CMA5-AD-PM-ST CMA5-AD-PM-ALL3	**Accessories** Hard Case (for two CMA5 light sources or optical power meter) Carrying Pouch/Shoulder Strap 9 V Alkaline Battery AC Adapter (CMA5) FC Connector Adapter SC Connector Adapter ST Connector Adapter Connector Adapter (FC, SC and ST)	

*: Specify one of FC, SC or ST connector adaptor for YY.

*: Photographs about same size as actual instruments.

Anritsu

Anritsu Corporation
5-1-1 Onna, Atsugi-shi, Kanagawa, 243-8555 Japan
Phone: +81-46-223-1111
Fax: +81-46-296-1238

• **U.S.A.**
Anritsu Company
1155 East Collins Blvd., Suite 100, Richardson,
TX 75081, U.S.A.
Toll Free: 1-800-267-4878
Phone: +1-972-644-1777
Fax: +1-972-671-1877

• **Canada**
Anritsu Electronics Ltd.
700 Silver Seven Road, Suite 120, Kanata,
Ontario K2V 1C3, Canada
Phone: +1-613-591-2003
Fax: +1-613-591-1006

• **Brazil**
Anritsu Eletrônica Ltda.
Praça Amadeu Amaral, 27 - 1 Andar
01327-010 - Bela Vista - São Paulo - SP - Brazil
Phone: +55-11-3283-2511
Fax: +55-11-3288-6940

• **Mexico**
Anritsu Company, S.A. de C.V.
Av. Ejército Nacional No. 579 Piso 9, Col. Granada
11520 México, D.F., México
Phone: +52-55-1101-2370
Fax: +52-55-5254-3147

• **U.K.**
Anritsu EMEA Ltd.
200 Capability Green, Luton, Bedfordshire, LU1 3LU, U.K.
Phone: +44-1582-433200
Fax: +44-1582-731303

• **France**
Anritsu S.A.
12 avenue du Québec, Bâtiment Iris 1- Silic 612,
91140 VILLEBON SUR YVETTE, France
Phone: +33-1-60-92-15-50
Fax: +33-1-64-46-10-65

• **Germany**
Anritsu GmbH
Nemetschek Haus, Konrad-Zuse-Platz 1
81829 München, Germany
Phone: +49-89-442308-0
Fax: +49-89-442308-55

• **Italy**
Anritsu S.r.l.
Via Elio Vittorini 129, 00144 Roma, Italy
Phone: +39-6-509-9711
Fax: +39-6-502-2425

• **Sweden**
Anritsu AB
Borgarfjordsgatan 13A, 164 40 KISTA, Sweden
Phone: +46-8-534-707-00
Fax: +46-8-534-707-30

• **Finland**
Anritsu AB
Teknobulevardi 3-5, FI-01530 VANTAA, Finland
Phone: +358-20-741-8100
Fax: +358-20-741-8111

• **Denmark**
Anritsu A/S (Service Assurance)
Anritsu AB (Test & Measurement)
Kay Fiskers Plads 9, 2300 Copenhagen S, Denmark
Phone: +45-7211-2200
Fax: +45-7211-2210

• **Russia**
Anritsu EMEA Ltd.
Representation Office in Russia
Tverskaya str. 16/2, bld. 1, 7th floor.
Russia, 125009, Moscow
Phone: +7-495-363-1694
Fax: +7-495-935-8962

• **United Arab Emirates**
Anritsu EMEA Ltd.
Dubai Liaison Office
P O Box 500413 - Dubai Internet City
Al Thuraya Building, Tower 1, Suit 701, 7th Floor
Dubai, United Arab Emirates
Phone: +971-4-3670352
Fax: +971-4-3688460

• **Singapore**
Anritsu Pte. Ltd.
60 Alexandra Terrace, #02-08, The Comtech (Lobby A)
Singapore 118502
Phone: +65-6282-2400
Fax: +65-6282-2533

• **India**
Anritsu Pte. Ltd.
India Branch Office
3rd Floor, Shri Lakshminarayan Niwas, #2726, 80 ft Road,
HAL 3rd Stage, Bangalore - 560 075, India
Phone: +91-80-4058-1300
Fax: +91-80-4058-1301

• **P.R. China (Hong Kong)**
Anritsu Company Ltd.
Units 4 & 5, 28th Floor, Greenfield Tower, Concordia Plaza,
No. 1 Science Museum Road, Tsim Sha Tsui East,
Kowloon, Hong Kong
Phone: +852-2301-4980
Fax: +852-2301-3545

• **P.R. China (Beijing)**
Anritsu Company Ltd.
Beijing Representative Office
Room 2008, Beijing Fortune Building,
No. 5, Dong-San-Huan Bei Road,
Chao-Yang District, Beijing 100004, P.R. China
Phone: +86-10-6590-9230
Fax: +86-10-6590-9235

• **Korea**
Anritsu Corporation, Ltd.
8F Hyunjuk Building, 832-41, Yeoksam Dong,
Kangnam-ku, Seoul, 135-080, Korea
Phone: +82-2-553-6603
Fax: +82-2-553-6604

• **Australia**
Anritsu Pty. Ltd.
Unit 21/270 Ferntree Gully Road, Notting Hill,
Victoria 3168, Australia
Phone: +61-3-9558-8177
Fax: +61-3-9558-8255

• **Taiwan**
Anritsu Company Inc.
7F, No. 316, Sec. 1, NeiHu Rd., Taipei 114, Taiwan
Phone: +886-2-8751-1816
Fax: +886-2-8751-1817

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Please Contact: