

## Portable Measuring Receiver

ML521A/B 25 to 300MHz

ML522A/B/C 300 to 1000MHz

ML524A/B/C 25 to 1000MHz

### *Ideal for Field Strength Measurements*

- Lightweight
- Synthesizer Local Oscillator
- Wide Dynamic Range (80dB)
- Direct Field Strength Readout
- GP-IB Interface Option





## Highly Sophisticated, General-Purpose Measuring Receiver ML521A/B, ML522A/B/C, ML524A/B/C

Unlike conventional compact field strength meters, the Anritsu Measuring Receiver ML521/2/4 series has a full range of features and functions normally found only in much larger, heavier equipment, plus demodulation functions for various signals. The compact, lightweight construction (about 3kg) makes it suitable for a variety of measurement applications. Use of the GP-IB interface option allows easy configuration of a lightweight, low-cost automatic monitoring or test system controlled by a personal computer. The ML521/2/4 boasts many different functions for a broad range of applications. Here are a few examples.

### Applications for other than field strength measurement

- **Radio monitoring**  
Ideal for monitoring AM or FM transmissions
- **Measuring receiver**  
Frequency-selective measurement of RF signal levels in R&D laboratories or on production lines
- **High-sensitivity signal demodulation**  
Discriminator output converts the ML521/2/4 into a discriminator for demodulating FSK signals
- **Other applications**  
Measurements of industrial radiowave appliance

### Features

- **Very compact and lightweight**  
ML521/ML522: 60H × 210W × 175Dmm, 3 kg including internal batteries  
ML524: 60H × 210W × 255Dmm, 4kg
- **Wide frequency range**  
ML521A/B: 25 to 300 MHz  
ML522A/B/C: 300 to 1000 MHz  
ML524A/B/C: 25 to 1000 MHz
- **High frequency stability**  
A local synthesizer is used. Its reference oscillator has a high frequency stability of  $\pm 1 \times 10^{-6}$ .
- **High precision frequency setting**  
1kHz steps (Type B receiver)
- **Superb selectivity**  
15kHz (6dB), 20kHz detuning >50dB (Type B and C receivers)
- **Wide dynamic range**  
80dB, without switching
- **Automatic gain calibration**  
Performed at power on or when CAL switch turned on
- **Direct field strength measurement**  
Digital display of voltage level (e.m.f.) and field strength
- **High precision level display**  
Indication in 0.1dB steps
- **Full remote control capabilities**  
The GP-IB interface option configures a monitoring or test system controlled by a personal computer.

## Guide to Measuring Receiver Selection

Application table

Model	ML521A ML522A ML524A	ML521B ML522B ML524B	ML522C ML524C
Application			
Broadcast CATV	•	•	
Mobile radio		•	•
General purpose	•	•	

Function table

	Frequency range (MHz)	Resolution (kHz)	Bandwidth (kHz)
ML521A	25 to 300	12.5	120
ML521B		1, 12.5	15, 120
ML522A	300 to 999.9875	12.5	120
ML522B	300 to 999.999	1, 12.5	15, 120
ML522C	300 to 999.9875	12.5	8, 15
ML524A	25 to 999.9875	12.5	120
ML524B	25 to 999.999	1, 12.5	15, 120
ML524C	25 to 999.9875	12.5	8, 15



## Compact, Easy-to-Carry Construction for On-Site Measurements

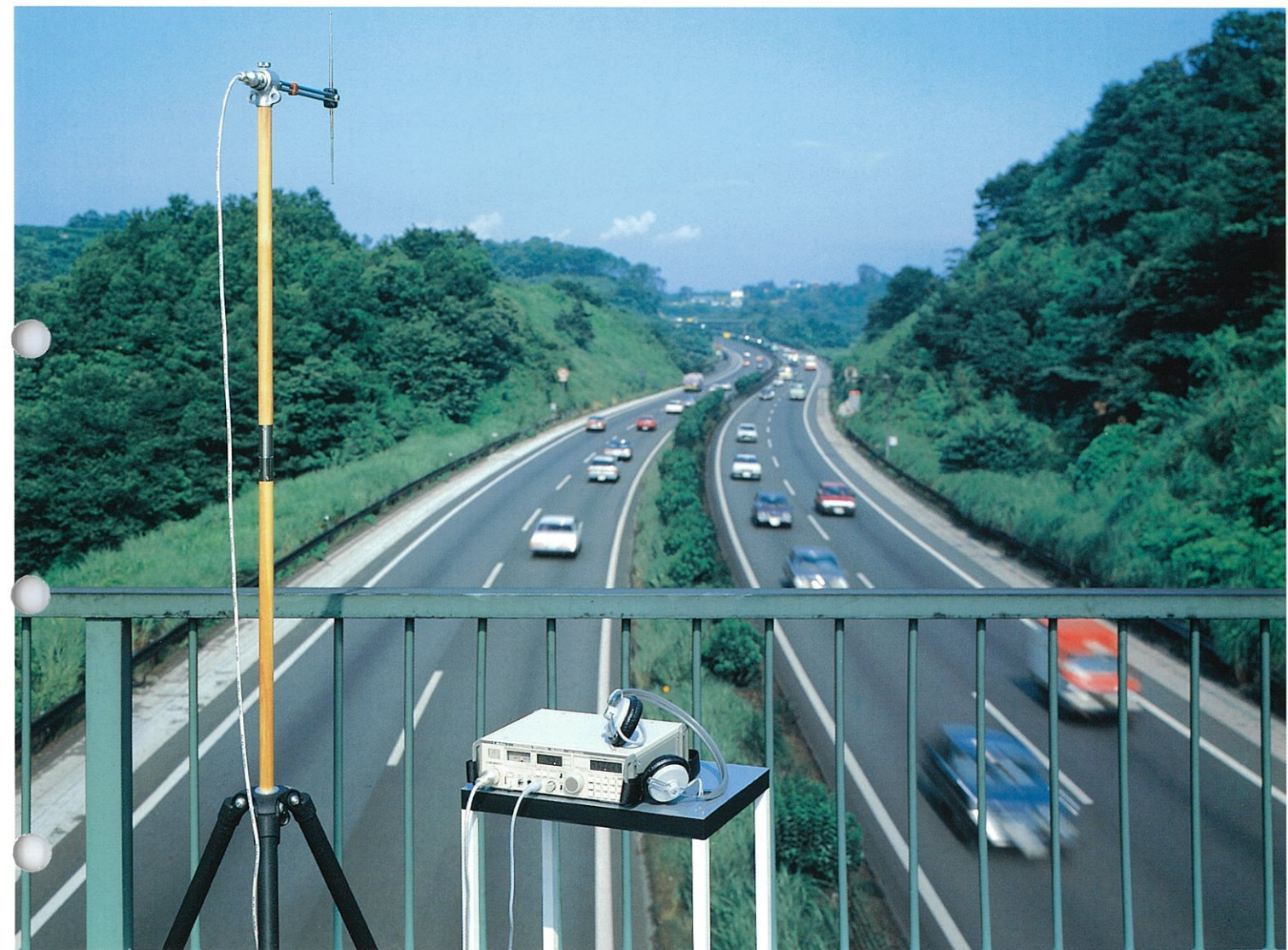


The ML521/2/4 is compact and lightweight, allowing simpler, easier field operations.

### Applications

- Field strength distribution measurement for surveying effect of buildings on transmission in urban areas
- Field strength measurements at the top of towers, in tunnels, on railroad bridges, and at other sites normally inaccessible to motor vehicles
- Field strength measurement in moving automobiles, boats, helicopters, etc.
- Transmission measurements for determining and planning coverage areas for communications networks
- Monitoring illegal transmissions
- Surveying TV and radio transmission service areas
- Measurements of CATV system signal levels and RF leakage
- Field strength measurements for determining antenna patterns, gain, etc.
- Measurement of spurious emissions from TV and radio receivers.
- Measurement of radiowaves emitted from radio-controlled equipment etc.

## Perfect Answer for Mobile Radio Testing



The ML521/2/4 series features a dynamic range as wide as 80dB and a high-speed response capability. It is ideal for field strength measurements of mobile telephones and radios systems. The high-stability design permits accurate measurements even over extended periods and is ideal for mobile applications. The recorder output terminal permits easy logging of measured data.

### •High frequency stability

A local synthesizer is used. Its reference oscillator stability is  $\pm 1 \times 10^{-6}$ .

### •High precision frequency setting

1kHz steps (Type B receiver)

### •Superb selectivity

BW 15 kHz (6 dB): > 50 dB at 20 kHz detuning (Type B and C receivers)  
BW 8 kHz (6 dB): > 50 dB at 10 kHz detuning (Type C receiver)

### •Wide dynamic range

80 dB



## Ideal for Determining Broadcast Service Areas

The ML521/2/4 series can also be used to determine the effective service areas of TV, FM and AM broadcast stations. The 100-frequency memory and automatic gain calibration allow quick measurements.

### Applications

- Saves measurement time during multiple frequency testing for mapping TV and radio service areas
- Ideal for planning countermeasures for radio transmission obstructed by roads, bridges, or buildings
- Quick measurement of indoor propagation characteristics of wireless microphones

## GP-IB Allows Automatic Measurements



An optional GP-IB interface can be installed in the compact body ML521/2/4 series allowing external personal-computer control of both frequency setting and reading-out of the measured signal level. Up to 100 antenna coefficient values can be stored in an internal RAM for up to one hundred frequency points, which enables reading of field strength for an arbitrary antenna when only its antenna coefficient values are known.

### Applications

#### • Automatic field strength measurement

External computer control enables measurement of field strength distribution at a variety of frequencies. It also allows measurement of time-dependent characteristics, such as fading, more quickly and efficiently.

#### • Radio monitoring

A computer-controlled monitoring system with the measuring receiver allows automatic logging of data

obtained as a result of continuous monitoring of a specific station or searching of an unknown radio wave.

#### • Other automatic measuring

Incorporating the measuring receiver as a signal detector in an automatic measuring equipment allows configuration of a compact, low-cost automatic measuring system.



**Level display:** This LCD indicates the input level in dB $\mu$ V or dB $\mu$ V/m units. Field strength can be read directly from it. When levels above 102 dB $\mu$ V are applied to the RF input, the display flashes to indicate an overload.

**Level meter:** This analog display is useful for monitoring level fluctuations. The indication range is from 0 to 80 dB $\mu$ V.

**Speaker:** For voice monitoring

**Input connector:** For connecting antenna

**Power switch**

**Battery check and LCD illumination switch:** When this switch is pressed, the level meter shows if the voltage of the internal batteries acceptable or not (blue area). In addition, the LCD display is illuminated by EL\*.

**Recorder output connector:** This connector delivers an analog recorder signal. When the digital display shows 80dB, this connector delivers approximately 1V into a 100k $\Omega$  load.

**Earphone jack**

**Address switches:** For GP-IB address setting (Option 01)

**Field strength-voltage conversion**

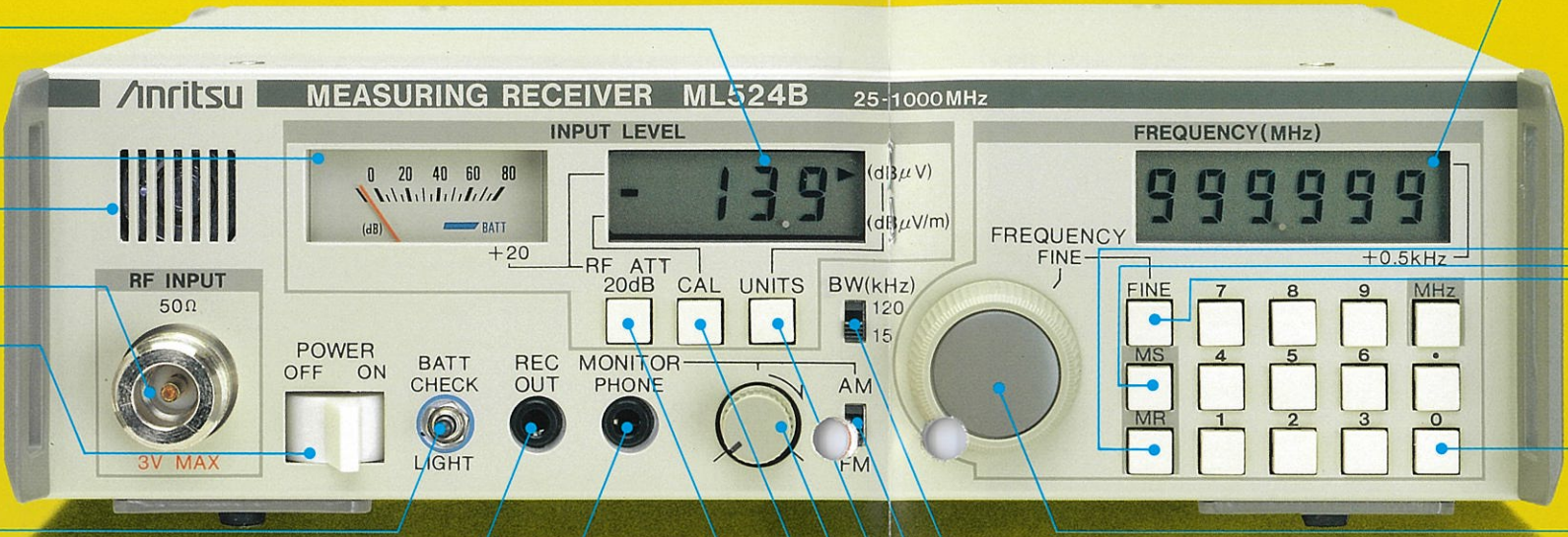
**Discriminator output connector**

**IF output connector**

**Squelch level adjust**

**External power supply connector:** For connecting supply cable when external 10 to 15 Vdc power supply used

\* EL: Electroluminescence



**Frequency Display:** This LCD indicates the frequency setting.

**Memory read key:** This key recalls the stored frequency to the frequency display.

**Memory set key:** This key stores the frequency shown on the display in the memory. 100 frequencies can be stored.

**FINE key:** When this key is ON, the FINE dial can be used.

**Numerical keys:** These keys are for frequency data input. The entered data is shown on the frequency display.

**FINE dial:** This dial continuously adjusts frequency in the steps listed below when the FINE key is ON.

Model	Step
ML521A, ML522A, ML524A	12.5kHz
ML522C, ML524C	12.5kHz (BW: 15/8kHz)
ML521B, ML522B, ML524B	1kHz (BW: 15kHz)
ML522C, ML524C	12.5kHz (BW: 120kHz)

**Bandwidth switch:** This switch is for passband switching.

Model	BW
ML521A, ML522A, ML524A	120kHz only
ML521B, ML522B, ML524B	15kHz and 120kHz
ML522C, ML524C	8kHz and 15kHz

**Monitor demodulation switch (AM or FM)**

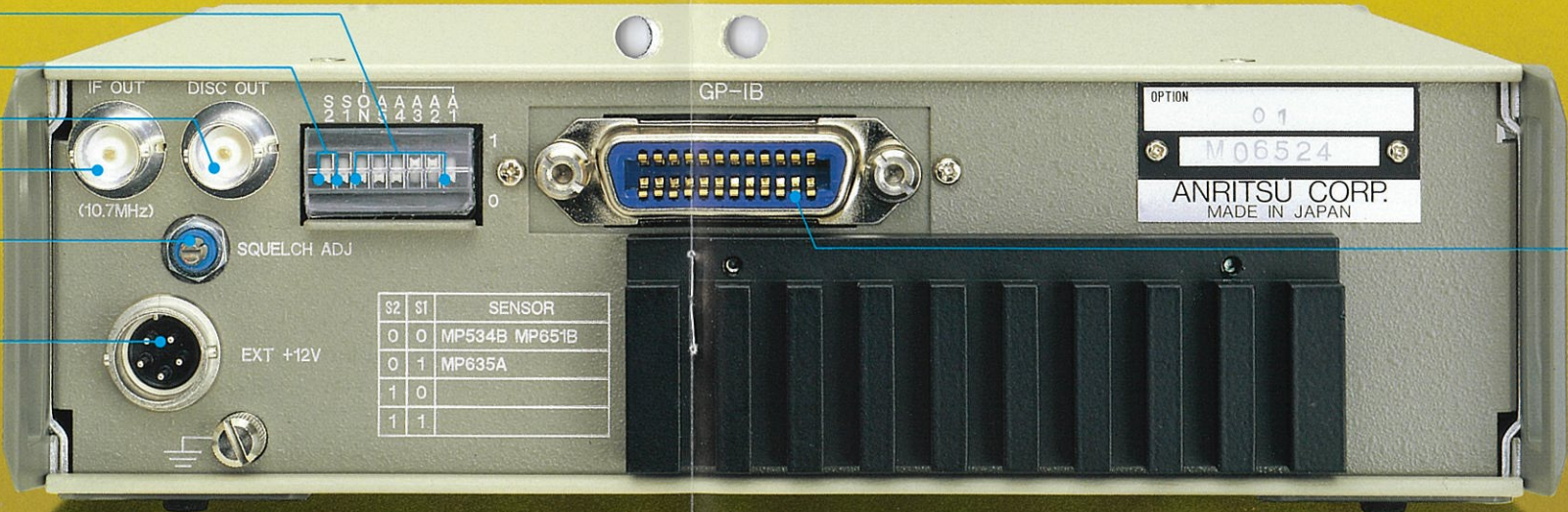
**UNITS switch:** For switching between voltage and field strength display

**Volume control for monitor**

**CAL switch:** When this switch is ON, the CAL mode is set and gain is automatically calibrated. After a few seconds, it turns OFF and the MEASURE mode is set.

**RF ATT switch:** When this switch is ON, a 20dB RF attenuator is inserted.


**GP-IB connector:** For connecting IEEE-488 bus (Option 01)





Specifications

•ML521A/B and ML522A/B/C

			ML521A	ML521B	ML522A	ML522B	ML522C
RF input			Nominal impedance 50Ω. Type N connector				
Frequency	Range		25.000 to 300.000MHz		300.000 to 999.9875MHz	300.000 to 999.999MHz	300.000 to 999.9875MHz
	Display		Liquid crystal display 6 digits. Minimum digit 1kHz (0.5kHz is displayed using a symbol of  )				
	Resolution	120kHz BW*	12.5kHz				—
		15kHz BW*	—	1kHz	—	1kHz	12.5kHz
		8kHz BW*	—				12.5kHz
	Setting		Keyboard and FINE dial				
	Memory		Up to 100 frequencies can be stored and recalled				
Reference frequency stability			± 1 × 10 <sup>-6</sup>				
Voltage measurement (emf)	Minimum value	25 to 300MHz	14dBμV	5dBμV	—		
		300 to 999.999MHz	—		14dBμV	5dBμV	2dBμV
	Maximum value	25 to 999.999MHz	100dBμV				
	Setting	C/N	≥ 6dB (at minimum value)				
		Bandwidth	120kHz	15kHz	120kHz	15kHz	8kHz
	Accuracy (digital display)		± 2dB (≥ minimum value + 6dB)				
Comparison oscillator			Pulse generator				
Field strength measurement	Minimum value	25 to 300MHz	4 to 28dBμV/m	−5 to 19dBμV/m	—		
		300 to 999.999MHz	—		28 to 41dBμV/m	19 to 32dBμV/m	16 to 29dBμV/m
	Maximum value	25 to 300MHz	90 to 114dBμV/m		—		
		300 to 999.999MHz	—		114 to 120dBμV/m		
	Setting	C/N	≥ 6dB (at minimum value)				
		Bandwidth	120kHz	15kHz	120kHz	15kHz	8kHz
Type of antenna			Half-wave dipole				
Selectivity	6dB Bandwidth	8kHz BW	—				8 ± 1kHz
		15kHz BW	—	15 ± 2kHz	—	15 ± 2kHz	15 ± 2kHz
		120kHz BW	120 ± 20kHz				—
	Detuning characteristics	8kHz BW	—				≥ 50dB (± 10kHz off center)
		15kHz BW	—	≥ 50dB (± 20kHz off center)	—	≥ 50dB (± 20kHz off center)	
Image ratio			≥ 60dB		≥ 50dB		
Detection system			Average value				
Measured level indication	Display		Liquid crystal display 4 digits. Minimum digit 0.1dB. (on digital display) Up to 80dB (on analog meter)				
	Unit		dBμV, dBμV/m (on digital display)				
Monitor output			AM and FM at speaker, earphone output terminal also provided				
IF output	Level		≥ 85dBμV at 80dBμV input				
	Impedance		50Ω (nominal)				
	Connector		BNC				
Discriminator output	Level		1V ± 20% (modulation frequency 2kHz, frequency deviation 3.5kHz, into 100kΩ load)				
	Impedance		≤ 150Ω				
	Connector		BNC				
Output for recorder	Connector		3.5ϕ jack				
	Level		1V ± 10% (at 80dB on digital display into 100kΩ load)				
	Output impedance		≤ 150Ω				
Ambient temperature	Rated range of use		0 to 50°C				
	Rated range for storing		−20 to +60°C				
Power			DC 12V: <700mA AC **V, 50/60Hz (using AC Power Pack MZ114A) SUM-2 Dry Battery (for Battery Pack MZ110A) Ni-Cd Battery (for Battery Pack MZ110B)				
Dimensions and weight			60H, 120W, 175Dmm, <3kg (including MZ110A)				
Accessories supplied			One carrying case One Battery Pack MZ110A with six SUM-2 batteries One connecting cord for recorder: 3.5ϕ plug • — • Alligator clip, Approx. 1.5m One DC power cord: RM12BPG-5S-2CC7 arrow tip, Approx. 1.5m One earphone				

•ML524A/B/C

			ML524A	ML524B	ML524C
RF input			Nominal impedance 50Ω. Type N connector		
Frequency	Range		25.000 to 999.9875MHz		25.000 to 999.999MHz
	Display		Liquid crystal display 6 digits. Minimum digit 1kHz (0.5kHz is displayed using symbol ■ )		
	Resolution	120kHz BW*	12.5kHz		—
		15kHz BW*	—	1kHz	12.5kHz
		8kHz BW*	—		12.5kHz
	Setting		Keyboard and FINE dial		
	Memory		Up to 100 frequencies can be stored and recalled		
Reference frequency stability		± 1 × 10 <sup>-6</sup>			
Voltage measurement (e.m.f.)	Minimum value	25 to 300MHz	14dBμV	5dBμV	5dBμV
		300 to 999.999MHz	14dBμV	5dBμV	2dBμV
	Maximum value	25 to 999.999MHz	100dBμV		
	Setting	C/N	≥ 6dB (at minimum value)		
		Bandwidth	120kHz	15kHz	8kHz
	Accuracy (digital display)		± 2dB (≥ minimum value + 6dB)		
Comparison oscillator		Pulse generator			
Field strength measurement	Minimum value	25 to 300MHz	4 to 28dBμV/m	− 5 to 19dBμV/m	− 5 to 19dBμV/m
		300 to 999.999MHz	28 to 41dBμV/m	19 to 32dBμV/m	16 to 29dBμV/m
	Maximum value	25 to 300MHz	90 to 114dBμV/m		
		300 to 999.999MHz	114 to 120dBμV/m		
	Setting	C/N	≥ 6dB (at minimum value)		
		Bandwidth	120kHz	15kHz	8kHz
Type of antenna		Half-wave dipole			
Selectivity	6dB Bandwidth	8kHz BW	—		8 ± 1kHz
		15kHz BW	—	15 ± 2kHz	15 ± 2kHz
		120kHz BW	120 ± 20kHz	120 ± 20kHz	—
	Detuning characteristics	8kHz BW	—	—	≥ 45dB ( ± 12.5kHz off center)
		15kHz BW	—	≥ 50dB ( ± 20kHz off center)	≥ 50dB ( ± 20kHz off center)
Image ratio		≥ 60dB (25.000 to 299.999MHz), ≥ 45dB (300 to 999.999MHz)			
Detection system		Average value			
Measured level indication	Display	Liquid crystal display 4 digits. Minimum digit 0.1dB. (on digital display) Up to 80dB (on analog meter)			
	Unit	dBμV, dBμV/m (on digital display)			
Monitor output		AM and FM at speaker, earphone output terminal also provided			
IF output	Level	≥ 85dBμV at 80dBμV input			
	Impedance	50Ω (nominal)			
	Connector	BNC			
Discriminator output	Level	1V ± 20% (modulation frequency 2kHz, frequency deviation 3.5kHz, into 100kΩ load)			
	Impedance	≤ 150Ω			
	Connector	BNC			
Output for recorder	Connector	3.5φ jack			
	Level	1V ± 10% (at 80dB on digital display into 100kΩ load)			
	Output impedance	≤ 150Ω			
Ambient temperature	Rated range of use	0 to 50°C			
	Rated range for storing	− 20 to + 60°C			
Power		DC 12V: <1A AC **V, 50/60Hz, ≤35VA (using AC Power Pack MZ114A) Ni-Cd Battery (for Battery Pack MZ110B, sold separately)			
Dimensions and weight		60H, 120W, 255Dmm, <4kg			
Accessories supplied		One carrying case One AC Power Pack MZ114A One connecting cord for recorder: 3.5φ plug—•Alligator clip, Approx. 1.5m One DC power cord: RM12BPG-5S·2CC7 arrow tip, Approx. 1.5m One earphone			

\* 6dB bandwidth.  
\*\* Specify one nominal line voltage between 100 and 250V when ordering.



Standard Accessories



Options

● GP-IB (OPT01)

Automatic measurement is made possible by using a personal computer with a GP-IB interface. The talk-only function enables continuous print-out on a GP-IB-interfaced printer when connected directly.

Listener function	Frequency, level, level calibration, level unit, attenuator
Talker function	Frequency, level
Talk-only function	Frequency, level
Power supply requirement	External DC supply (DC 12V, <1A) or AC Power Pack MZ114A is necessary

Optional Accessory

● Headphone

Helps easier voice monitoring



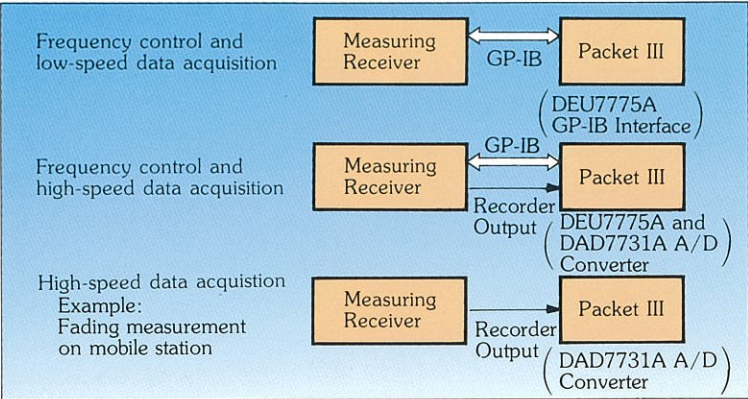
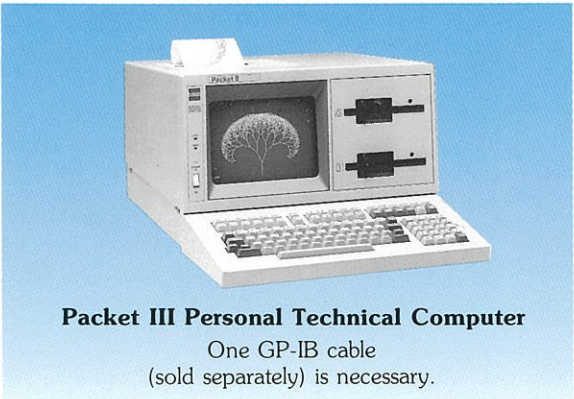
● Terminated Voltage display (OPT50)

The voltage display system is changed to one that displays Terminated voltages instead of emf values.

GP-IB Control and Application

Control and data Processing in Combination with Personal Computer

This arrangement enables programmable control of the ML521/2/4 series frequency setting together with data collection and processing.



Figs. A and B show examples of Anritsu Packet III printouts of measurements made with the ML521. Fig. A shows field strength level variation measured over a period of time. Fig. B shows percent of time graph data. Fig. C shows a received-signal frequency distribution of field strength data measured at frequencies from 80 to 110 MHz by automatic sweep operation.

Fig. A

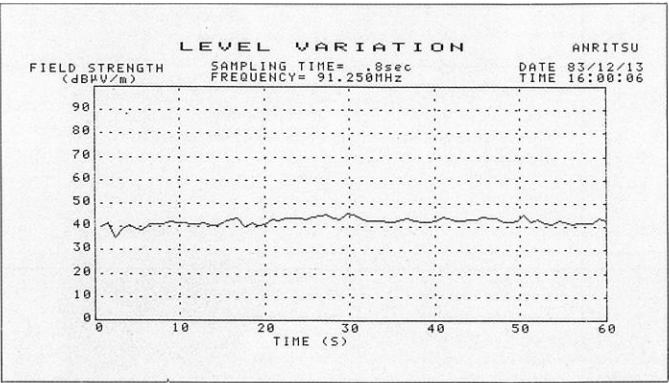


Fig. B

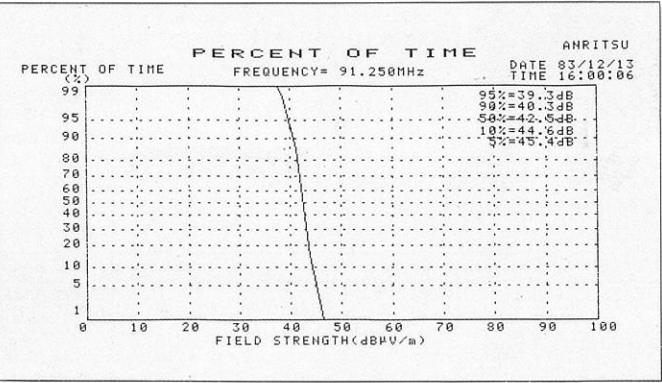
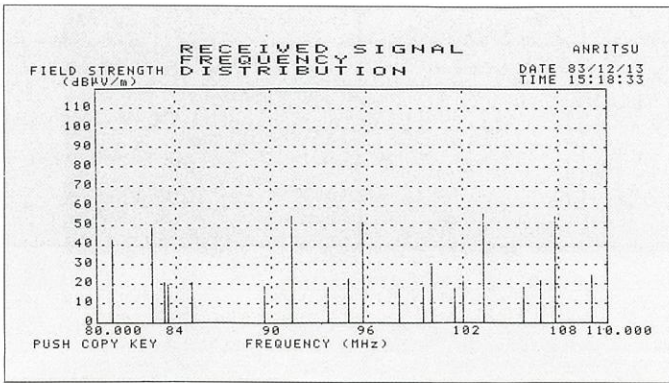


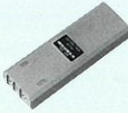





Fig. C





Guide to Power Supply Selection

Power supply selection guide

Type of power supply	Name	Photo	When used with ML521/522	When used with ML524	Remarks
Dry cell	MZ110A Battery Pack		<ul style="list-style-type: none"><li>Operates for 40 minutes</li><li>Supplied accessory</li></ul>	—	<ul style="list-style-type: none"><li>Six UM-2 batteries</li><li>Fits inside receiver</li><li>Does not permit GP-IB operation.</li></ul>
Dry cell	MZ137A Battery Pack		<ul style="list-style-type: none"><li>Operates continuously for about 8 hours</li><li>Sold separately</li></ul>	<ul style="list-style-type: none"><li>Operates continuously for about 5 hours*</li><li>Sold separately</li></ul>	<ul style="list-style-type: none"><li>Twelve UM-1 batteries</li><li>Does not permit GP-IB operation</li></ul>
Ni-Cd battery	NZ110B Battery Pack		<ul style="list-style-type: none"><li>Operates continuously for about 1.5 hours*</li><li>Sold separately</li></ul>	<ul style="list-style-type: none"><li>Operates continuously for about 1 hour*</li></ul>	<ul style="list-style-type: none"><li>Six Ni-Cd batteries with same dimensions as UM-2 battery, chargeable 200 to 300 times.</li><li>Fits inside receiver</li><li>Does not permit GP-IB operation</li></ul>
Sealed lead storage battery	MZ88A DC Power Supply		<ul style="list-style-type: none"><li>Operates continuously for about 7 to 10 hours*</li><li>Sold separately</li></ul>	<ul style="list-style-type: none"><li>Operates continuously for about 5 to 7 hours*</li><li>Supplied accessory</li></ul>	<ul style="list-style-type: none"><li>Contains 12 V, 7.5 AH charger</li><li>DC power is fed to the EXT +12 V terminal of the receiver</li><li>Permits GP-IB operation</li></ul>
AC supply	MZ114A AC Power Pack		<ul style="list-style-type: none"><li>Permits operation at AC 100 V</li><li>Sold separately</li></ul>	<ul style="list-style-type: none"><li>Permits operation at AC 100 V</li><li>One of accessories supplied</li></ul>	<ul style="list-style-type: none"><li>DC power is fed to receiver EXT +12 V terminal</li><li>Permits GP-IB operation</li></ul>
External DC supply	—	—	<ul style="list-style-type: none"><li>Receiver can be operated directly from an external DC 12 V supply</li></ul>	<ul style="list-style-type: none"><li>Receiver can be operated directly from an external DC 12 V supply</li></ul>	<ul style="list-style-type: none"><li>One DC power cord supplied</li><li>Permits GP-IB operation</li></ul>
Battery charger	MZ115A Battery Charger		<ul style="list-style-type: none"><li>Sold separately</li></ul>	<ul style="list-style-type: none"><li>Sold separately</li></ul>	<ul style="list-style-type: none"><li>Two MZ110Bs can be charged simultaneously</li></ul>

\* When used for continuous reception after power on and calibration (at 25°C)

Ordering Information

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

Model number/Order number	Name	Remarks
ML521A ML521B ML522A ML522B ML522C ML524A ML524B ML524C	<b>Main Frame</b> Measuring Receiver Measuring Receiver Measuring Receiver Measuring Receiver Measuring Receiver Measuring Receiver Measuring Receiver	25 to 300 MHz, BW = 120 kHz 25 to 300 MHz, BW = 15 kHz/120 kHz 300 to 1000 MHz, BW = 120 kHz 300 to 1000 MHz, BW = 15 kHz/120 kHz 300 to 1000 MHz, BW = 8 kHz/15 kHz 25 to 1000 MHz, BW = 120 kHz 25 to 1000 MHz, BW = 15 kHz/120 kHz 25 to 1000 MHz, BW = 8 kHz/15 kHz
J0231 J0144 A0002 MZ110A B0095 W0282AE W0283AE	<b>Standard ML521/2 accessories</b> Connecting cord for recorder, approx 1.5 m: 1 pc DC power cord, 1.5 m: 1 pc Earphone: 1 pc Battery Pack: 1 pc Carrying case: 1 pc ML521A/B operation manual: 1 copy ML522A/B/C operation manual: 1 copy	3.5φ Plug—•Alligator Clip RM12BPG-5S•2CC7•Arrow Tip  With six UM-2 batteries
J0231 J0144 A0002 MZ114A B0259 W0285AE	<b>Standard ML524 accessories</b> Connecting cord for recorder, approx 1.5m: 1 pc DC power cord, 1.5: 1 pc Earphone: 1 pc AC Power Pack: 1 pc Carrying case for ML524: 1 pc ML524A/B/C operation manual: 1 copy	3.5φ Plug—•Alligator Clip RM12BPG-5S•2CC7•Arrow Tip
ML521-01 ML521-50 ML522-01 ML522-50 ML524-01 ML524-50	<b>Options</b> GP-IB Terminated Voltage Indication GP-IB Terminated Voltage Indication GP-IB Terminated Voltage Indication	

Continued on next page



Model number/ Order number	Name	Remarks
	<b>Optional accessories common to ML521/2/4 series</b>	
MP612A	RF Fuse Holder	DC to 1000MHz
MP613A	RF Fuse Element	5 pcs/set
A0004	Headphone	
MZ110B	Battery Pack	With 6 Ni-Cd batteries
MZ115A	Battery Charger	Two MZ110Bs can be charged simultaneously.
MZ114A	AC Power Pack	
MZ88A	DC Power Supply	Sealed lead storage batteries used
MP635A	Log-periodic Antenna	80 to 1000 MHz
MZ137A	Battery Pack	With 12 UM-1 batteries
MB19A	Tripod	For MP635A
J0006	GP-IB cable, 0.5m	408JE-1P5
J0007	GP-IB cable, 1m	408JE-101
J0008	GP-IB cable, 2m	408JE-102
J0009	GP-IB cable, 4m	408JE-104
	<b>Optional accessories for ML521/2</b>	
MP534B	Dipole Antenna	25 to 520 MHz
MB9A	Tripod	For MP534B
MP520A	CM Directional Coupler	25 to 500 MHz, 75 $\Omega$ , NC-type connector
MP520C	CM Directional Coupler	25 to 500 MHz, 50 $\Omega$ , N-type connector
	<b>Optional accessories for ML522/4</b>	
MP663A	Dipole Antenna	300 to 1000 MHz, with pole and tripod
MP651B	Dipole Antenna	470 to 1700 MHz
MB18A	Pole	For MP651B
MB9A	Tripod	For MP651B
MP520B	CM Directional Coupler	25 to 1000 MHz, 75 $\Omega$ , NC-type connector
MP520D	CM Directional Coupler	25 to 1000 MHz, 50 $\Omega$ , N-type connector
	<b>Peripherals</b>	
DDC7707A	Packet III Personal Technical Computer	
DDC7708A	Packet IIIs Personal Technical Computer	



# Guide to Antenna Selection

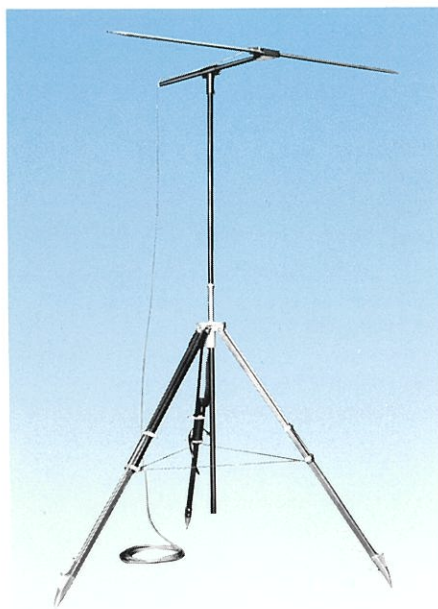
## Antenna Types and Features

### •Dipole antenna

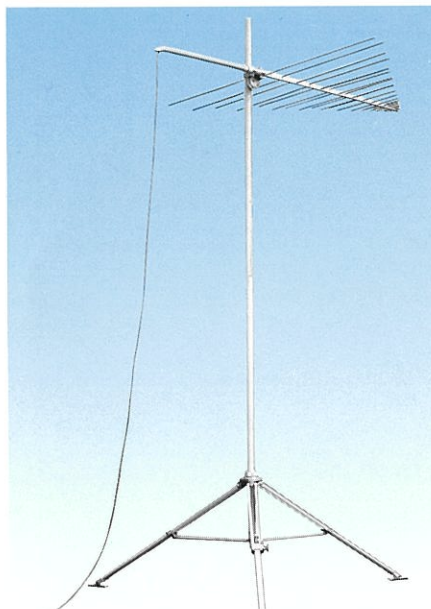
This antenna is a commonly used, easy-to-handle antenna that covers frequencies from 25 to 1000 (1700)MHz.

### •Log-periodic antenna

This antenna provides almost completely uniform impedance and gain characteristics across the frequency band from 80 to 1000MHz. (Gain: Approx. 5 dB)



MP534B Dipole Antenna  
MB9A Tripod



MP635A Log-periodic Antenna  
MB19A Tripod



MP663A Dipole Antenna

## Antenna, Tripod and Receiver Combination Example

Measuring Type of Antenna Component	ML521/4 (25 to 300 MHz)		ML522/4 (300 to 1000 MHz)		
	Dipole	Log-periodic	Dipole	Dipole	Log-periodic
Antenna	MP534B (25 to 520 MHz)	MP635A (80 to 1000 MHz)	MP651B (520 to 1700 MHz)	MP663A (300 to 1000 MHz)	MP635A (80 to 1000 MHz)
Pole	Supplied as a part of MP534B	Supplied as a part of MB19A	MB18A	Supplied as a part of MP663A	Supplied as a part of MP19A
Tripod	MB9A	MB19A	MB9A	Supplied as a part of MP663A	MB19A



# ANRITSU CORPORATION

## ANRITSU CORPORATION

Established: 1931

Employees: 2850

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## Overseas Subsidiaries

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### ANRITSU ELEKTRONIK GmbH

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Specifications are subject to change without notice