



## High-speed programmable Attenuator / Step Attenuator MAT800 / MAT810 / MAT850



[ MAT800/810 ]

### Catalog Download

[MAT800 \( 232kB\)](#)

[MAT810 \( 100kB\)](#)

[MAT850 \( 196kB\)](#)

### Technical material

- [Air simulation for wireless communication. \(MAT800/MAT810\)](#)
- [Technical data of VSWR and Attenuation. \(MAT800\)](#)
- [Technical data of VSWR and Attenuation. \(MAT810\)](#)
- [Technical data of VSWR and Attenuation. \(MAT850\)](#)
- [The Level correction of MAT800/MAT810 corresponding to several input frequency](#)

### MAT series Lineup

#### MAT800

**Model A**

**Model B**

**Model C**

**Model D**

**Model E** **NEW**

**MAT810** **NEW**

**MAT850** **NEW**



[ MAT850 ]

## 1. Outline

These attenuators can switch the attenuation of the microwave signal.

Optimum for simulation of wireless communication equipments, such as handover test, dynamic motion test and receiving sensitivity test.

Moreover, optimum for the simulation of the receiving trouble by the rainfall attenuation in BS/CS digital broadcasting.

MAT800/MAT810 is a multi-functional and authentic programmable attenuator that is capable of controlling the attenuation at ultra-high speed.

MAT850 is a small and lightweight step attenuator that can adjust the attenuation in 0.1dB by hand watching LED display.

All models of the MAT series are electronic attenuators.

Therefore, the various tests and simulations can be done in an ideal environment in which there are no chattering and spike at the switching moment.

## 2. Features

[MAT800]

- ① Five models are prepared corresponding to each frequency band.
- ② The minimum step size of attenuation is 0.05dB, and the maximum attenuation is 80dB.
- ③ There is no spike at switching moment, and it is, therefore, possible to test without causing communication fault.
- ④ GP-IB and RS-232C interface are equipped as standard accessories
- ⑤ It is possible to make the arbitrary attenuation program.
  - Manual mode or program mode is selectable.
  - The software for making attenuation program is a standard accessory
  - 128k words program memory is built-in.
  - 2μs maximum switching (readout) speed at program mode. And three readout modes of FREE· BURST· GATE .
  - Equips with External readout clock input, Trigger input and SYNC output in consideration of connecting with other systems.

[MAT810]

- ① The frequency range is so wide as 300MHz to 6.6GHz.
- ② The minimum step size of attenuation is 0.05dB, and the maximum attenuation is 60dB.
- ③ Other features are the same as MAT800.

[MAT850]

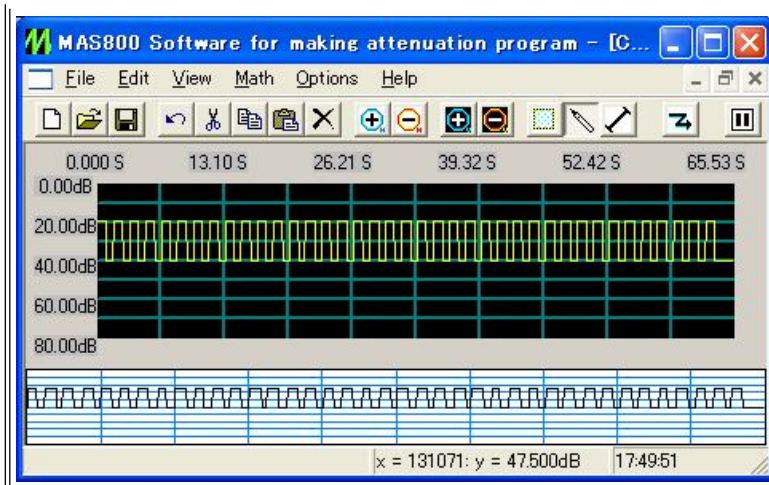
- ① The frequency range is so wide as 300MHz to 6.1GHz.
- ② The minimum step size of attenuation is 0.1dB, and the maximum attenuation is 60dB.
- ③ Equips with spike noise removal circuit at switching moment.
- ④ LED display easy to see.

3. MAT series selection table

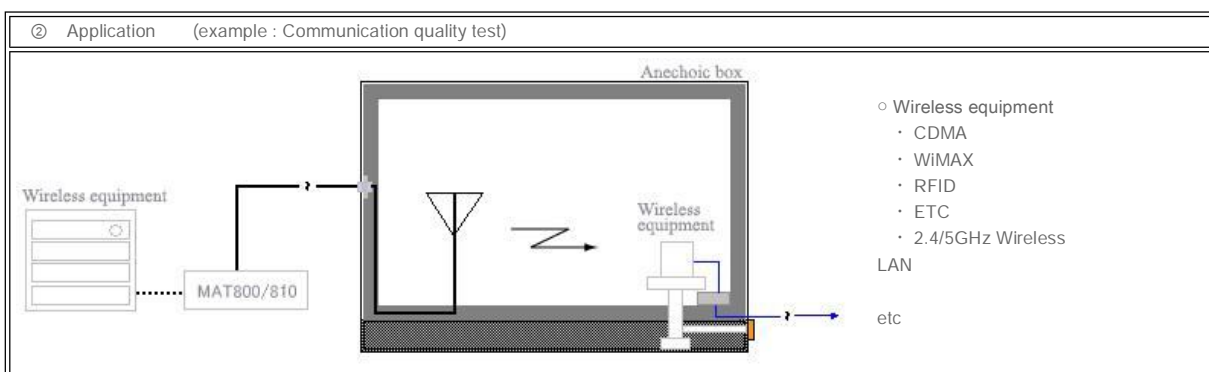
Model	Frequency	Attenuation		Input Power ( 1dB compression )	Type
		Maximum	Resolution		
MAT800 / A	1.5 to 4.5GHz	80dB	0.05dB	100mW	High-Speed Programmable Attenuator
/ B	3.0 to 9.0GHz				
/ C	4.5 to 13.5GHz				
/ D	1.95 to 5.85GHz				
/ E	750MHz to 2.25GHz				
MAT810	300MHz to 6.6GHz	60dB	0.1dB	25mW	Step Attenuator
MAT850	300MHz to 6.1GHz				

4. Software for making attenuation program / Application

① Software for making attenuation program MAS800 (Standard accessory)
<ul style="list-style-type: none"> <li>○ <b>Waveform creation</b> The nine types of standard waveforms are prepared like sine wave and triangle wave. A waveform is created by straight line input, arithmetic calculation input(addition, subtraction, clipping, offset and etc), one-point input and freehand line input by a mouse.</li> </ul>



- Waveform editing and file management
- Waveform editing and file management may be performed using CUT, COPY, PASTE and UNDO.



5. MAT Equipment Model

		MAT800					MAT810	MAT850
		Model A	Model B	Model C	Model D	Model E		
■Cellular phone 1 ( JPN/USA )	W-CDMA	○				○	○	
	HSDAPA	○				○	○	
	HSPA+	○				○	○	
	LTE	○				○	○	
■Cellular phone 2 ( JPN/USA )	cdma					○	○	
	cdma2000	○				○	○	
■Cellular phone 3 ( EUR/ASIA )	GSM	○				○	○	
	GPRS	○				○	○	
	EDGE	○				○	○	
	1xEV-D0	○				○	○	
■PHS ( JPN/ASIA )		○				○	○	
■Wireless LAN	( 2.4GHz ) 11/11b/11g/11n	○			○	○	○	
	( 5GHz ) 11a/11n		○	○	○	○	○	
■UWB	3.4 to 4.8GHz @ JPN		○			○	○	
	7.25 to 10.25G @ JPN			○				
	3.1 to 10.6GHz @ USA		○					
■Bluetooth		○				○	○	
■ZigBee		○				○	○	
■ WiMAX Mobil WiMAX	( 2.5GHz )	○			○	○	○	
	( 3.5GHz )	○	○		○	○	○	
	( 5.8GHz )		○	○	○	○	○	
■GPS ( 1.57542GHz )		○			○	○	○	
■RF-ID	( 900MHz )					○	○	
	( 2.5GHz )	○				○	○	
■ETC/DSRC			○	○		○		
	Antenna Reception Frequency							

■BS/CS Digital broadcasting	13GHz : 11.72748 ~				○			
	Converter Intermediate Frequency : 1.04 to 2.03GHz ( Output VSWR : less than 2.0 )					○	○	○

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↑ PAGE TOP