

EMI Analyzer (EA-2100)



User's Operating Manual

Please read this manual before usage
Please keep this manual with the equipment

WARNING AND CAUTION

WARNING.



TO AVOID ELECTRIC SHOCK,
THE PROTECTIVE GROUNDING CONDUCTOR
MUST BE CONNECTED TO GROUND.

DO NOT REMOVE COVERS.

REFER SERVICING TO QUALIFIED
EMCIS CO.,LTD SERVICE CENTER FOR
MAINTENANCE OF THE UNIT.

CAUTION.



FOR CONTINUED PROTECTION AGAINST
FIRE HAZARD, REPLACE THE LINE FUSE
ONE WITH THE **SAME TYPE AND CURRENT RATING OF FUSE**



GROUND.

GROUND TERMINAL TO CHASSIS (EARTH).



Certificate of Compliance

Dear Sir;

We hereby certify that the products are manufactured, inspected, and tested according to the rule and regulation of EMCIS quality control program based on ISO9001,version 2000.

With best regards,

EMCIS Co., Ltd.



Contents

EA-2100

- 1.0 Introduction of EMI Analyzer
 - 1-1 Brief of EMI Analyzer
 - 1-2 Application of EMI Analyzer
- 2.0 System Configuration
 - 2.1 Consist of EA-2100
- 3.0 Specification
 - 3-1 Specification
 - 3-2 Block diagram
- 4.0 Description of Panel
 - 4-1 Front Panel
 - 4-2 Rear Panel
- 5.0 Cable Connection
 - 5-1 Cable Connection
 - 5-2 Cable Connection on test table
- 6.0 Function
 - 6-1 Display
 - 6-2 Control Button
 - 6-3 In/Output connector

1.0 Introduction of EMI Analyzer

1-1 Brief of EMI Analyser

EMI Analyzer (model: EA-2100) is an innovative instruments in Conducted Emission Noise application. EMI Analyzer separates the noise from 9KHz to 300MHz as Common-mode noise and Differential-mode noise which can provide theoretical and practical analysis of noise and its solution.

In measurement, EMI Analyzer is set up with Spectrum Analyzer and LISN.

EMCIS EA-2100 is required 2port LISN.

1-2 Application of EMI Analyzer

- Separation and measurement of individual noises.

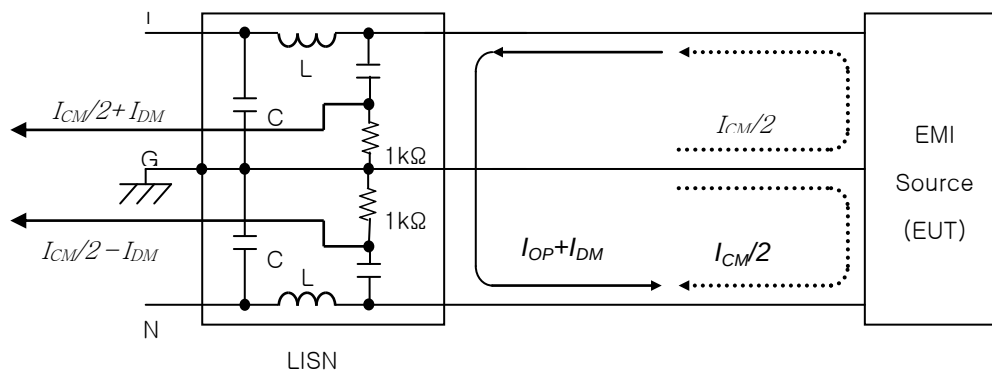
- Common-Mode Noise
- Differential-Mode Noise

- Design of EMI Filter

Measuring exact value of noises in Common-Mode & Differential-Mode shall provide proper components selection in EMI Filter design and manufacturing.

- Analysis of Noise Source

Providing analysis of noise source and the path of noises with noise pick probe



I_{OP} : main operating current

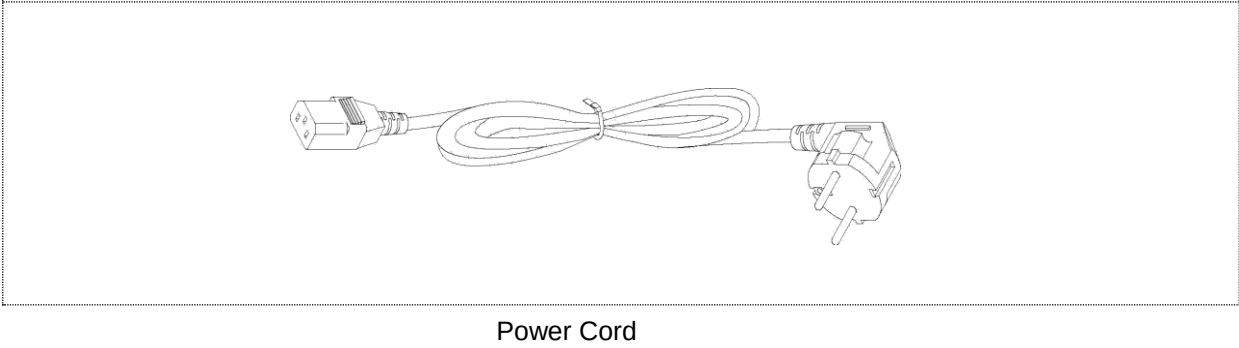
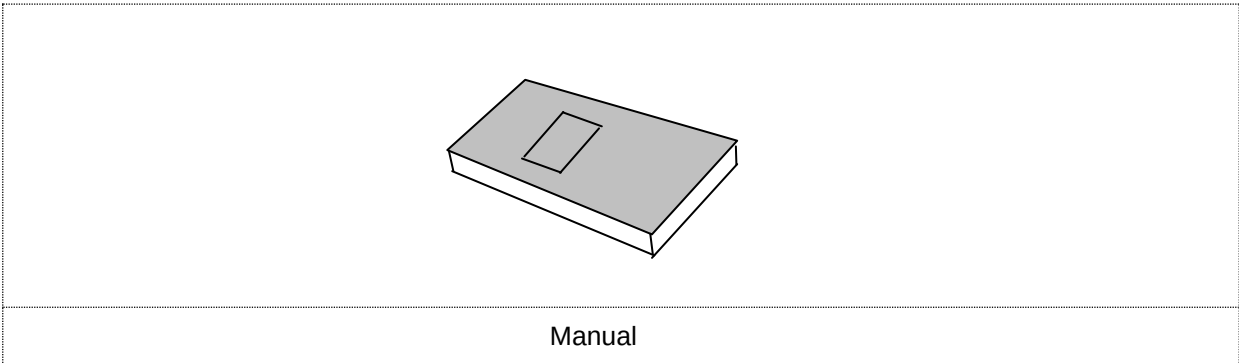
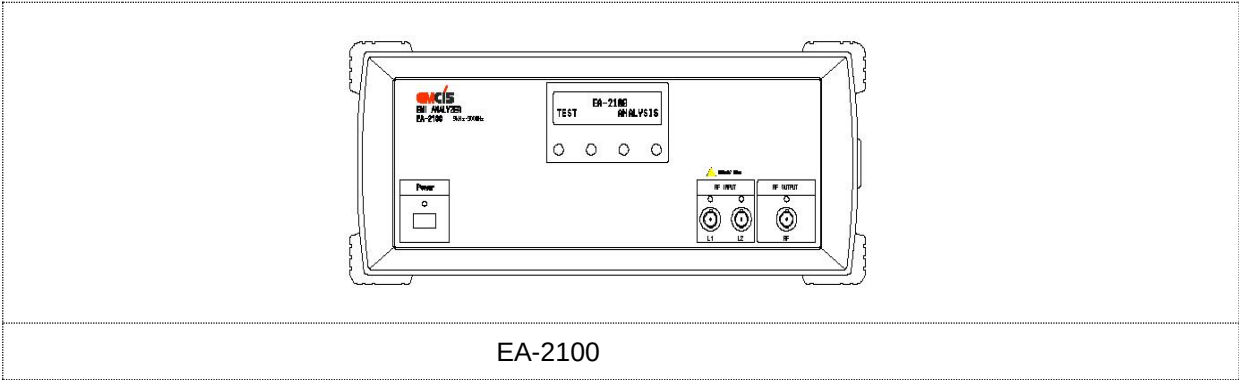
—— : differential-mode (DM) noise current

..... : common-mode (CM) noise current (I_{CM})

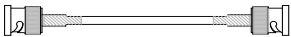
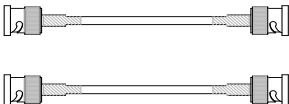
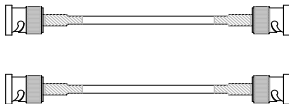
2.0

System Configuration

2-1 Consist of EA-2100



Optional Accessories

		
Cable (BNC-MM-140)	Cable (BNC-MM-160)	Cable (BNC-MM-280)

3.0 Specification

3-1 Specification

1) Frequency Range

1-1	Test Mode		9kHz ~ 30MHz
1-2	Analysis Mode	Low Range	9kHz ~ 30MHz
1-3		High Range	30MHz ~ 300MHz

2) RF INPUT

2-1	Connector	BNC Female	50 ohm
2-2	Max input level	110 dBuV	
2-3	Input Sensitivity	10 dBuV	

3) RF OUTPUT

3-1	Connector	BNC Female	50 ohm
-----	-----------	------------	--------

4) CM/DM Separation

4-1	9KHz~30MHz	40 dB min	Low Range
4-2	30MHz ~ 300MHz	30dB min	High Range

5) Insertion Loss

5-1	9KHz~30MHz	2 dB Max	
5-1	30MHz ~ 300MHz	3 dB Max	

6) Modes

6-1	Test	Line 1, Line 2	
6-2	Analysis	Common mode, Differential mode selection	

7) Input Power

7-1	Input Voltage	AC 90V~230V	Free Voltage
7-2	Input Current	50 / 60Hz	0.1A

8) Dimension W[365] x D[330] x H[150] (mm)

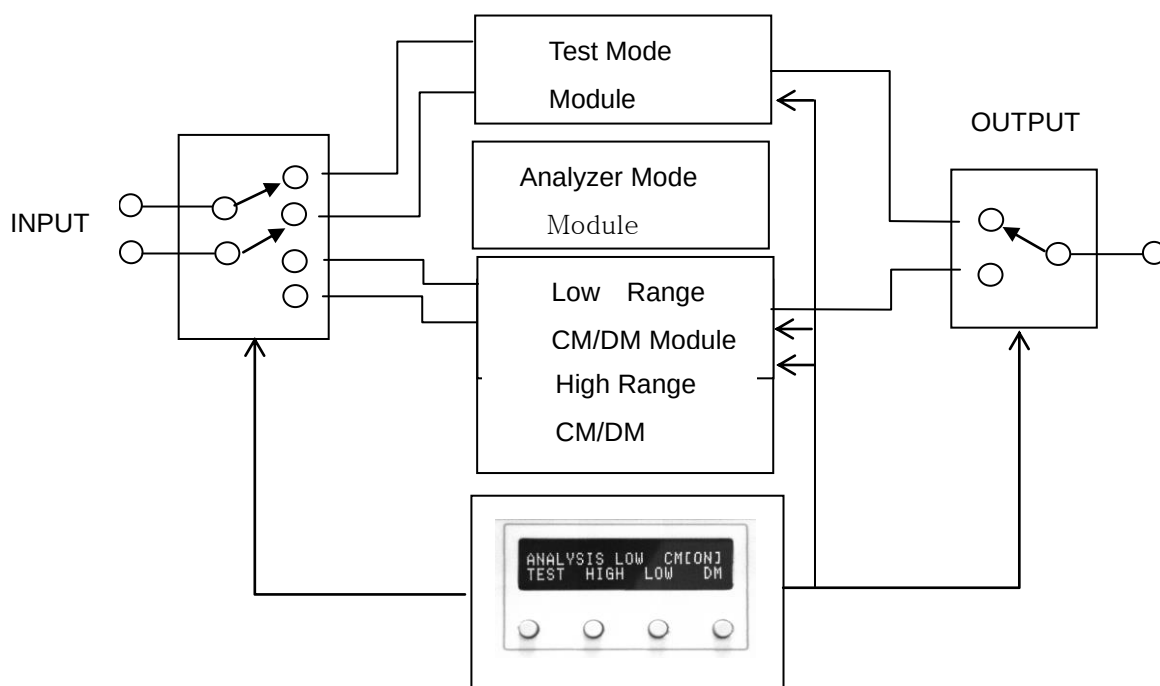
9) Indicators Power on LED

10) Weight : 9.2kg

11)Optional Accessories

Item	mode	specification	application
11-1	BNC-MM-140	BNC to BNC 140 mm	Main body – LISN
11-2	BNC-MM-160	BNC to BNC 160 mm	Main body-Spectrum Analyzer
11-3	BNC-MM-280	BNC to BNC 280 mm	Main body - LISN

3-2 Block Diagram

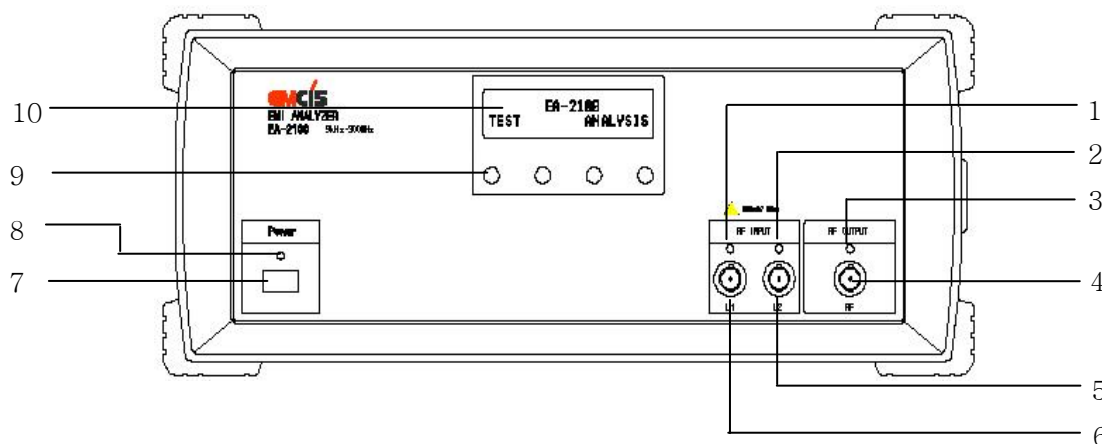


EA-2100 Block Diagram

- 1) From/through 2 RF Input ports, Signal is passed and selected as Test Mode Module or Analyzer Mode Module.
- 2) Analyzer Mode is divided as Common mode and Differential mode
- 3) Common mode & Differential mode is separated as Low Range and High Range

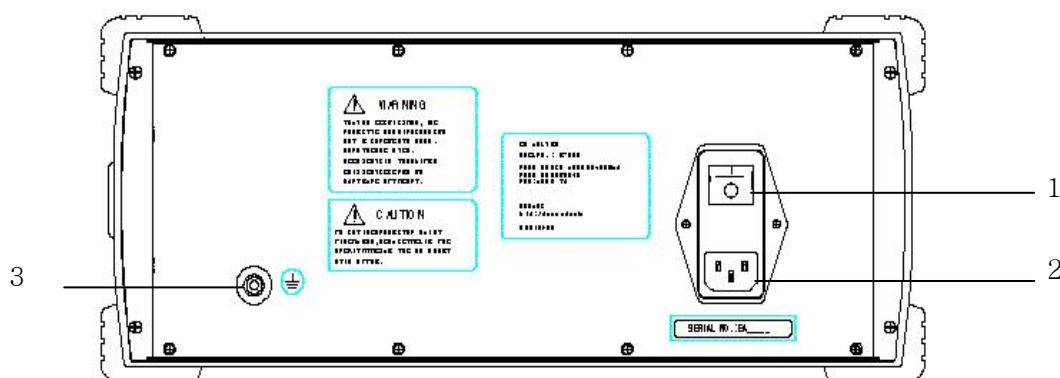
4.0 Description of Panel

4-1 Front Panel



No	Name	Description
1,2	RF Input Indicator	Indicate the selected RF Input
3	RF Output Indicator	Indicate RF Output Port
4	RF Output Connector	Port to Input of Spectrum Analyzer or Receiver
5,6	RF Input Connector	Port to RF Output of LISN.
7	Power switch	on/off switch (stand by)
8	Power Indicator	Indicate power on/off
9	Control Button	Mode Selection push button
10	Display	Show the selected mode

4-2 Rear Panel

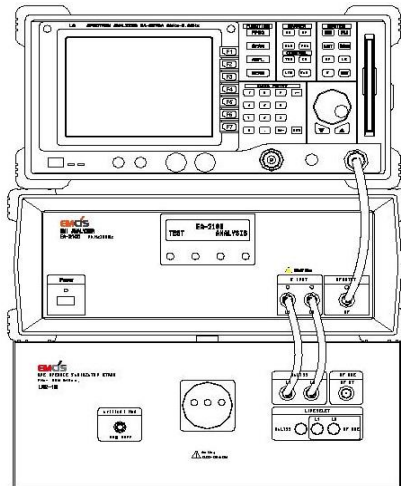


Rear Panel

no	Name	Description
1	Main Power Switch	Main Power on/off Switch
2	Power Socket	Power cord Socket
3	Ground Terminal	Ground Terminal

5.0 Cable Connection

5-1 Cable Connection

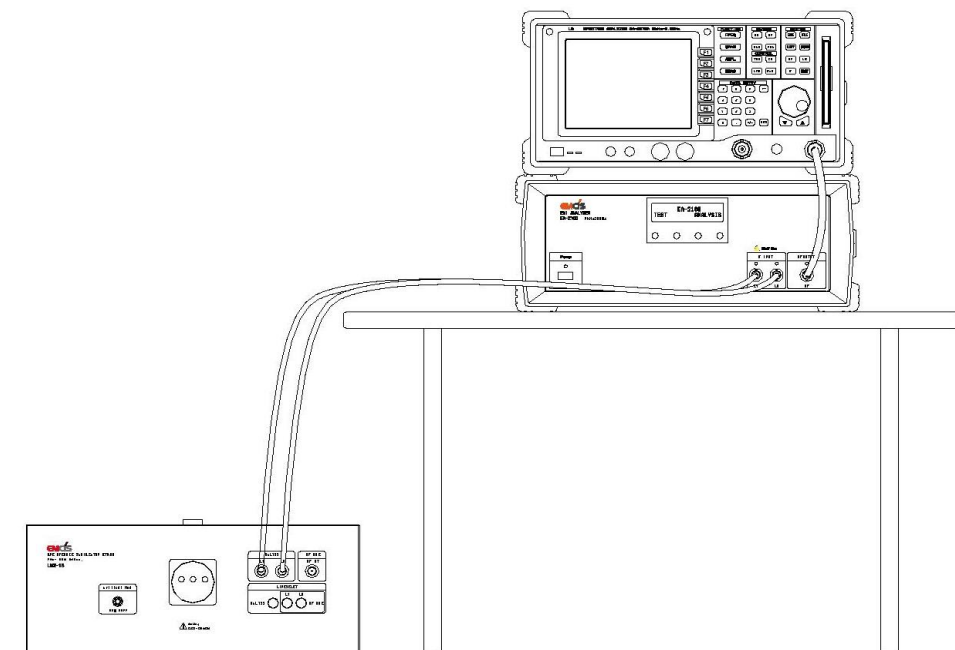


Connection of Cable

Spectrum Analyzer, EA-2100, and LISN is connected with BNC type cable.

N-BNC type adaptor shall be used for connection on Input of Spectrum Analyzer

5-2 Cable connection on test table

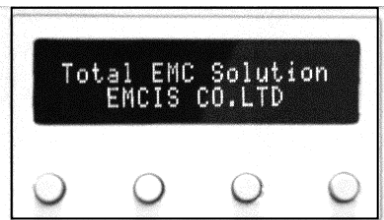


Connection on Test Table

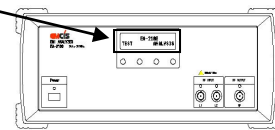
Connection cable between LISN and EA-2100 should be selected low loss cable at equal length.

6.0 Function

6-1 Display



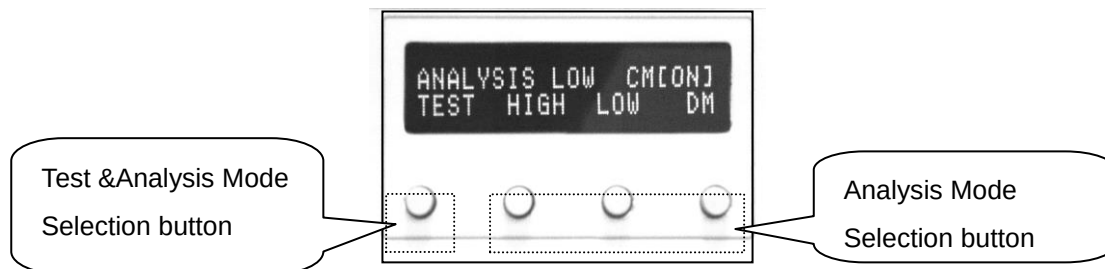
Display window



Display window(VFD) shows selected mode and modes

Selected mode is on upper line and modes are lower line

6-2 Control Button



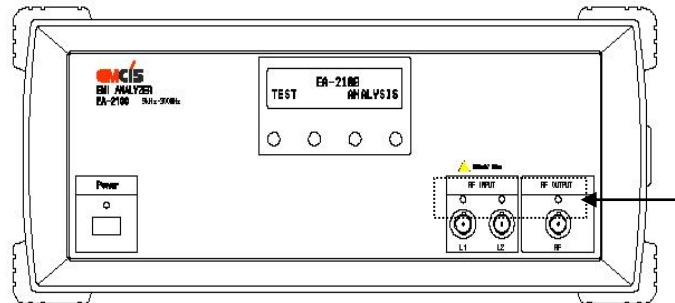
Control Button

1 of left button is for mode selection ; Test & Analysis

3 of right buttons are applying to Analysis mode application

- Left and Middle button selects the frequency range, low(up to 30MHz) and high(up to 300MHz)
- Right button selects noise mode, Common and Differential

6-3 In/Output Connector



In/Output Connector

RF Input : connect to Output of LISN

RF Output : connect to Input of Spectrum Analyzer