

INSTRUCTION MANUAL

For

KDS EQ-2000 MICROPHONE EQUALIZER

Thank you for purchasing our product **EQ-2000 MICROPHONE EQUALIZER**.

EQ-2000 MICROPHONE EQUALIZER is a high performance microphone equalizer having a specially designed low-noise microphone amplifier for HF bands for an amateur radio station.

Please read this instruction manual carefully before using this unit for maximum performance and save this instruction manual for future reference.

FEATURES

1. **VERSATILE IN MICROPHONE INPUT:** it can be used in 8 pin microphone circular plug (N-16-8P) or 8 pin modular plug (RJ-45); either of the above two types of microphone plugs can be used by changing an internal wiring of EQ 2000 for any kind of transceiver.
2. **2-WAY POWER:** (1) Most transceivers providing DC 5-9 volts for the microphone can power the EQ-2000 by proper wiring of microphone cord, (2) 4 pin old type transceiver or tube type transceiver can be externally powered by DC 8-18 volts through the DC terminal of EQ-2000 with a battery or well regulated power supply.
3. **LOW TONE and HIGH TONE CONTROL:** Because it is designed for voice communications operating in 400 - 3,000Hz, it is possible to have quality communication even under the heavy noise in HF bands.

CONTROLS and How to use

1. **MIC INPUT A:** 8 pin microphone circular plug (N-16-8P)
Connects a general 8 pin circular plug. MIC INPUT B cannot be used with MIC INPUT A at the same time.
2. **MIC INPUT B:** 8 pin Modular plug (RJ-45)
Connects modular plug. MIC INPUT A cannot be used with MIC INPUT B at the same time.
3. **Power Switch ON:** EQ-2000 in service; **OFF:** shut down the EQ-2000
4. **Power LED:** lights up when POWER Switch is on
5. **MIC GAIN VOLUME:** Variable for audio signal
6. **LOW TONE Control (BASS Mark):** variable low tone
7. **HIGH TONE Control (Treble Mark):** Variable high tone

8. EQ OUTPUT (8 pin circular plug; pin configuration: please refer to Table 9)

Connects a proper microphone cord (Optional) for the transceivers

9. Ground

While using this unit, in case of high VSWR with antenna, leakage of coaxial cable, external power supply noise, external noise, etc., connect a wire between the transceiver and ground terminal of this unit. Please try this when such noise is involved and enjoy communication without any noise.

10. POWER INPUT TERMINAL

Most recent transceivers providing DC 5 - 9 volts for the microphone can power the EQ-2000 by proper wiring of microphone cord. However, 4 pin old type transceiver or tube type transceiver does not provide power from the microphone connector. In such case, you can externally power DC 8 - 18V through the DC terminal of EQ-2000 with a battery or low ripple well regulated power supply or AC adaptor.

Wiring method for various transceivers

Please refer to the following Table 1 to Table 8, and Figure 1.

Method to change the wiring is as follows: 1. Loosen 4Ea of M3*8 nut from top cover; 2. Connect a CON1, CON3, J1, J2, J3, and PCB ground terminal to your microphone after referring to the following Tables.

Table 1. DTM-501/502 desktop microphone

Table 2. ICOM 8pin circular plug (I-8P): IC-707, 721,726,729,736,746,756,760,761,765,775,781,821,

Table 3. ICOM 8pin modular plug (I-8M): IC-706 Series

Table 4. KENWOOD and ALINCO 8pin circular plug (K-8P): TS-50, 140, 440,450,570,690,790,850,
870, 940,950,2000, DX-70, DX-77

Table 5. KENWOOD 8pin modular plug (K-8M): TS-V7, D-700,

Table 6. YAESU 8pin circular plug (Y-8P): FT-847, 920,990,1000MP,

Table 7. YAESU 8pin circular plug (P-88Y): FT-840, 1000,1011,1021,

Table 8. JRC 8pin circular plug: JRC-135, 145, 245

Table 9. Others

Please contact us regarding other transceivers or microphones not mentioned above

Cautions

1. For microphone input: in case of dynamic microphone, place the internal jumper (JP1) to the OFF position. Factory setting is at the ON position.
2. Microphone cord (optional) is marked for Microphone side and Equalizer side on plugs. Please be sure to properly connect plugs; otherwise, it causes a malfunction or does not operate properly.
3. Please avoid placing it in a place with direct sunshine, high temperature or high humidity. This will cause a malfunction or improper operation.
4. We are not responsible for any malfunction caused by your modification of the unit.

5. Circuit, specification, ratings, and design are subject to change without notice due to advancements in technology.
6. After service: Our products are manufactured under extensive quality control and testing. If the unit becomes inoperable, or malfunctions during the transportation or normal use, please ask for service at a sale's representative or KDS Communications Company.

SPECIFICATION

1. Model ----- EQ-2000
2. Input impedance ----- 100 k Ω
3. Microphone gain (Variable type)
 - 3.1 Low cut or boost ----- ± 12 dB@490Hz
 - 3.2 High cut or boost ----- ± 12 dB@2,800Hz
4. Microphone input
 - 4.1 8pin circular plug (N-16-8R)
 - 4.2 8pin modular plug (RJ-45)
5. Microphone output: 8pin circular plug (N-16-8R)
6. Maximum input level ----- 500 mV r.m.s
7. Frequency response characteristic ----- 200 Hz ~ 10 kHz
8. Distortion ----- Less than 1.5%
9. Power consumption ----- Less than 9 mA @DC13.8V
10. Dimensions ----- 125 * 40 * 153mm (W * H * D)
4.9 * 1.6 * 6 inch(W * H * D)
11. Weight----- 450 grams (About 1 lb)
12. A/S Contact: KDS Communications Co., Ltd.

MA-2512 Kuro jonghap yutong dangi, #1258 Kurobon-dong, Kuro-gu, Seoul, Korea

Phone: +82-2-6679-7411/2 URL: <http://www.kds-mic.co.kr>

Fax: +82-2-6679-7413 E-mail: kds-mic@kds-mic.co.kr

Wiring for various Microphone

Table 1. KDS's DTM-501/502 desktop microphone

Connector pin	Color	Function	Connection terminal	Remarks
CON3-3	Orange	PTT	J3-3	
CON3-4	Yellow	PTT GND	J3-4	
CON3-5	Green	UP	J3-5	
CON3-6	Blue	DOWN	J3-6	
CON3-7	Purple	U/D com.	J3-7	
CON3-8	White	+B Power	J3-8	
J1-1	Red	Circuit +B	J2-8	

		supply		
J1-4	Black	MIC input	J3-2	
PCB ground	Black	GND	J3-1	
CON1-1	Brown	MIC GND	J2-1	
CON1-2	Red	MIC IN	J2-2	
CON1-3	Orange	PTT	J2-3	
CON1-4	Yellow	PTT GND	J2-4	
CON1-5	Green	UP	J2-5	
CON1-6	Blue	DOWN	J2-6	
CON1-7	Purple	U/D Com.	J2-7	
CON1-8	White	+ B Power	J2-8	

* CON 2(Modular input) does not connect to microphone

Æ2. ICOM 8pin circular plug (I-8P): IC-707, 721,726,729,736,746,756,760,761,765,775,781,821

Connector pin	Color	Function	Connection terminal	Remarks
CON3-3	Orange	PTT	J3-3	
CON3-4	Yellow	PTT GND	J3-4	
CON3-5	Green	UP	J3-5	
CON3-6	Blue	DOWN	J3-6	
CON3-7	Purple	U/D Com.	J3-7	
CON3-8	White	+ B Power	J3-8	
J1-1	Red	Circuit + B supply	J2-8	
J1-4	Black	MIC input	J3-1	
PCB Ground	Black	GND	J3-2	
CON1-1	Brown	MIC IN	J2-1	
CON1-2	Red	+ B Power	J2-8	
CON1-3	Orange	UP	J2-5	
CON1-4	Yellow	SQUELCH	N/A	
CON1-5	Green	PTT	J2-3	
CON1-6	Blue	PTT GND	J2-4	
CON1-7	Purple	MIC GND	J2-2	
CON1-8	White	AF OUT	N/A	

CON 2(modular input) does not connect to microphone

Table3. iCOM 8pin modular plug (I-8M): IC-706 Series

Connector pin	Color	Function	Connection terminal	Remarks
CON3-3	Orange	PTT	J3-4	
CON3-4	Yellow	PTT GND	J3-7	
CON3-5	Green	UP	J3-3	
CON3-6	Blue	DOWN	N/A	
CON3-7	Purple	U/D Com.	J3-6	

CON3-8	White	+B Power	J3-2	
J1-1	Red	Circuit + B supply	J2-2	
J1-4	Black	MIC input	J2-5	
PCB gnd	Black	GND	J2-8	

CON 1(8pin circular plug) does not connect to microphone

Table 4. KENWOOD and ALINCO 8pin circular plug (K-8P):

: TS-50, 140,440,450,570,690,790,850,870,940,950,2000, DX-70, DX-77

Connector pin	Color	Function	Connection terminal	Remarks
CON3-3	Orange	PTT	J3-3	
CON3-4	Yellow	PTT GND	J3-4	
CON3-5	Green	UP	J3-5	
CON3-6	Blue	DOWN	J3-6	
CON3-7	Purple	U/D Com.	J3-7	
CON3-8	White	+B Power	J3-8	
J1-1	Red	Circuit + B supply	J2-8	
J1-4	Black	MIC input	J3-1	
PCB ground	Black	GND	J3-2	
CON1-1	Brown	MIC	J2-1	
CON1-2	Red	PTT	J2-3	
CON1-3	Orange	DOWN	J2-6	
CON1-4	Yellow	UP	J2-5	
CON1-5	Green	+B Power	J2-8	
CON1-6	Blue	SQUELCH	N/A	
CON1-7	Purple	MIC GND	J2-2	
CON1-8	White	PTT GND	J2-7	

CON 2(Modular input) does not connect to microphone

Table 5. KENWOOD 8pin modular plug (K-8M): TM-V7A, D-700

Connector pin	Color	Function	Connection terminal	Remarks
CON3-3	Orange	PTT	J3-8	
CON3-4	Yellow	PTT GND	J3-5	
CON3-5	Green	UP	J3-6	
CON3-6	Blue	DOWN	J3-2	
CON3-7	Purple	U/D Com.	J3-3	
CON3-8	White	+B power	J3-7	
J1-1	Red	Circuit + B supply	J2-7	
J1-4	Black	MIC input	J3-1	
PCB ground	Black	GND	J3-4	

CON 1(8pin circular plug) does not connect to microphone

Table 6. YAESU 8pin circular plug (Y-8P): FT-847, 920,990,1000MP,

Connector pin	Color	Function	Connection terminal	Remarks
CON3-3	Orange	PTT	J3-3	
CON3-4	Yellow	PTT GND	J3-4	
CON3-5	Green	UP	J3-5	
CON3-6	Blue	DOWN	J3-6	
CON3-7	Purple	U/D Com.	J3-7	
CON3-8	White	+ B Power	J3-8	
J1-1	Red	Circuit + B supply	J2-8	
J1-4	Black	MIC input	J3-1	
PCB ground	Black	GND	J3-2	
CON1-1	Brown	UP	J2-5	
CON1-2	Red	+ B Power	J2-8	
CON1-3	Orange	DOWN	J2-6	
CON1-4	Yellow	FAST	N/A	
CON1-5	Green	PTT GND	J2-4	
CON1-6	Blue	PTT	J2-3	
CON1-7	Purple	MIC GND	J2-2	
CON1-8	White	MIC	J2-1	

CON 2(Modular plug) does not connect to microphone

Table 7. YAESU 8pin circular plug (P-88Y): FT-840, 1000,1011,1021

Connector pin	Color	Function	Connection terminal	Remarks
CON3-3	Orange	PTT	J3-3	
CON3-4	Yellow	PTT GND	J3-4	
CON3-5	Green	UP	J3-5	
CON3-6	Blue	DOWN	J3-6	
CON3-7	Purple	U/D Com.	J3-7	
CON3-8	White	+ B Power	J3-8	
J1-1	Red	Circuit + B supply	J2-8	
J1-4	Black	MIC input	J3-1	
PCB ground	Black	GND	J3-2	
CON1-1	Brown	UP	J2-5	
CON1-2	Red	U/D Com.	J2-7	
CON1-3	Orange	DOWN	J2-6	
CON1-4	Yellow	FAST	N/A	
CON1-5	Green	-	N/A	
CON1-6	Blue	PTT	J2-3	
CON1-7	Purple	MIC GND	J2-2	
CON1-8	White	MIC	J2-1	

CON 2(Modular plug) does not connect to microphone

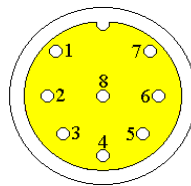
Table 8. JRC 8pin circular plug: JRC-135, 145, 245

Connector pin	Color	Function	Connection terminal	Remarks
CON3-3	Orange	PTT	J3-3	
CON3-4	Yellow	PTT GND	J3-4	
CON3-5	Green	UP	J3-5	
CON3-6	Blue	DOWN	J3-6	
CON3-7	Purple	U/D Com.	J3-7	
CON3-8	White	+ B Power	J3-8	
J1-1	Red	Circuit + B supply	J2-8	
J1-4	Black	MIC input	J3-1	
PCB ground	Black	GND	J3-2	
CON1-1	Brown	UP	J2-5	
CON1-2	Red	-	N/A	
CON1-3	Orange	DOWN	J2-6	
CON1-4	Yellow	+ B Power	J2-8	
CON1-5	Green	PTT GND	J2-4	
CON1-6	Blue	PTT	J2-3	
CON1-7	Purple	MIC GND	J2-2	
CON1-8	White	MIC	J2-1	

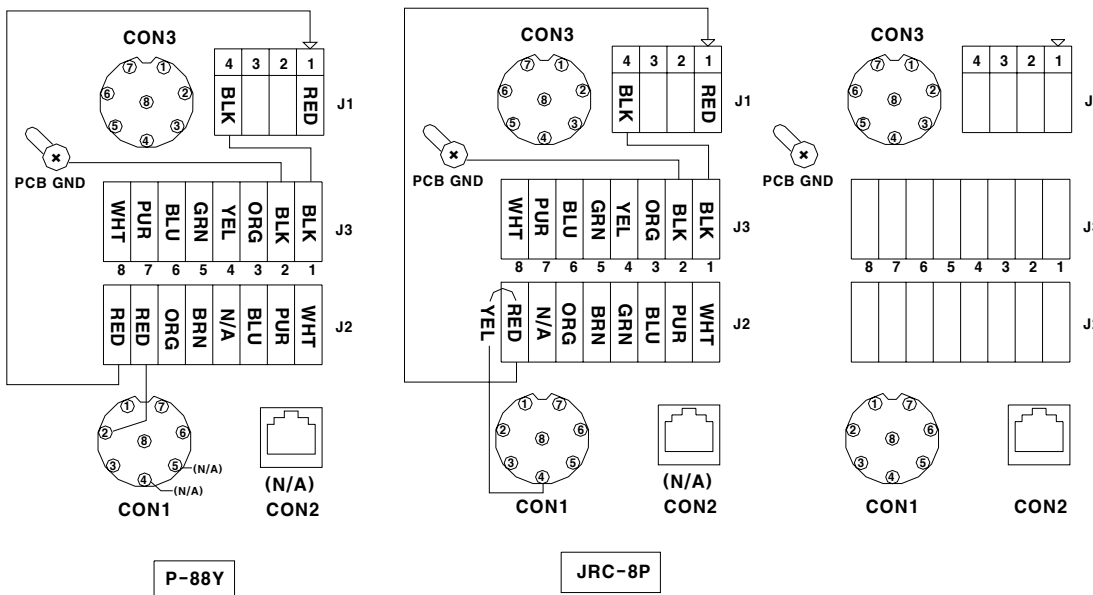
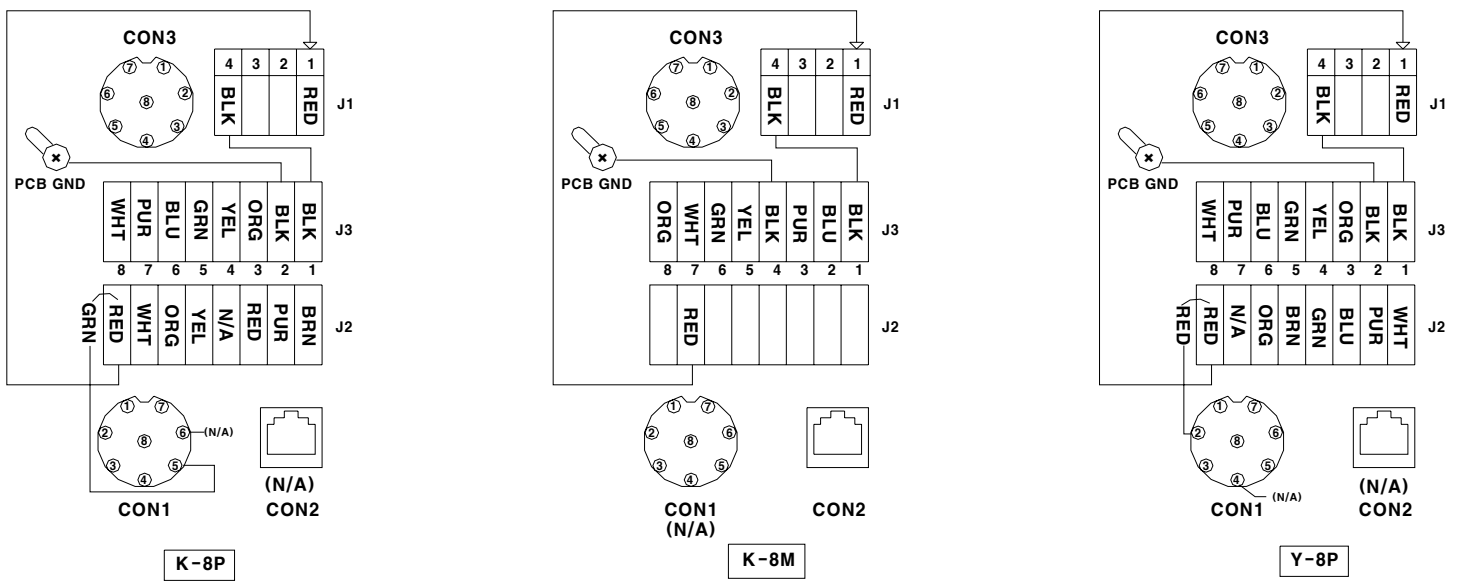
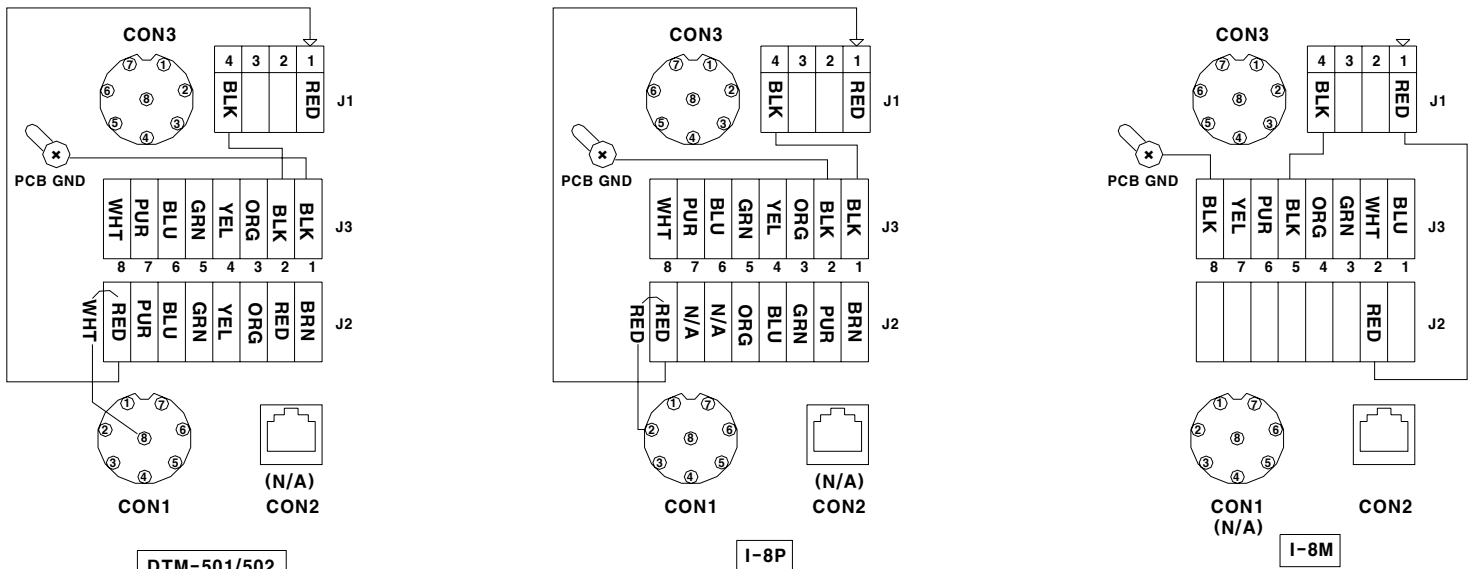
* CON 2(Modular plug) does not connect to microphone

Table 9. Others: Please contact KDS for details

EQ-2000 Output connector pin configuration



1. MIC GND
2. MIC IN
3. PTT
4. PTT GND
5. UP
6. DOWN
7. UP/DOWN common
8. + B Power (+ DC 5~9V)



LEGEND	
RED	: RED
ORG	: ORANGE
YEL	: YELLOW
GRN	: GREEN
BLU	: BLUE
PUR	: PURPLE
BRN	: BROWN
WHT	: WHITE
BLK	: BLACK
N/A	: NOT AVAILABLE

FIG #1 : WIRING for VARIOUS MICROPHONES