# GP-100 Service Notes

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## Specifications/仕様

- **AD Conversion (INPUT/AD変換)**: 22 bit (AF Method) 128 times Oversampling & ΔΣ modulation
- **AD Conversion (RETURN/AD変換)**: 18 bit linear 128 times Oversampling & ΔΣ modulation
- **DA Conversion/DA変換**: 18 bit linear / 18 ビット・リニア
- **Sampling Frequency/サンプリング周波数**: 44.1 kHz
- **Program Memory/プログラム・メモリー**: 400 (200:User + 200:Preset)
- **Nominal Input Level/規定人出レベル**: INPUT -10 dBm, +4 dBm
- **Output Impedance/出力インピーダンス**: OUTPUT 1 MΩ
- **Nominal Output Level/規定出力レベル**: OUTPUT -10 dBm, +4 dBm
- **Input Impedance/入力インピーダンス**: SEND 2 kΩ
- **Dynamic Range/ダイナミック・レンジ**: 108 dB or greater / 108 dB以上
- **Display/ディスプレイ**: 16 characters, 2 line ascii LCD / 16行 x 2行（パックライト付）
- **Power Supply/電源**: AC100 V, AC117 V, AC230 V or AC240 V
- **Power Consumption/消費電力**: 13 W
- **Dimensions/寸法**: 190(W) x 295(D) x 44(H) mm 19(W) x 11-13/16(D) x 1-3/4(H) inches
- **Weight/重量**: 3.6kg / 7 lbs 15 oz
- **Accessories/付属品**: Owner's Manual (Japanese) 70566278
- **Owner's Manual (English)**: 70566456
- **Options/別売品**: MIDI FOOT CONTROLLER FC-200
- **Foot Switch**: DP-2, FS-1, FS-5U/SL (BOSS)
- **Expression Pedal**: EV-5, FV-300L (BOSS)/P-33
- **Controller**: MC-8

## Location of Controls/バランス配置図

![Diagram](image-url)
TEST MODE/テストモード

Entering test mode
While depressing [PREAMP][WRITE] key, turn on power.
Confirm the program version.

The message shows that the PRAM of ESP (DSP chip) is being tested.
When the test is successful, the program proceeds to the test mode. Otherwise, it shows the error message shown below.

"PRAM Verify Err":
Check soldered joints connecting the ESP chip to the CPU.

Select the desired test by turning [PARAMETER] and then press [NUMBER/VALUE].

1. LCD/LED
All segments on the LCD and the 8 LEDs turn on. Press [NUMBER/VALUE] and the 8 LEDs turn on one by one in the order shown below. (PREAMP → GLOBAL → TUNER → UTILITY → EFFECT → METER → CLIP → SIGNAL → PREAMP →...)

Press [PARAMETER] to proceed to the next test.

2. LCD Contrast
Press [NUMBER/VALUE] and verify change in LCD contrast.

2. LCD Contrast
Press [PARAMETER] to proceed to the next test.

3. PREAMP Knobs
Press [NUMBER/VALUE] and the name of PREAMP knob is displayed at the upper line of the LCD.

Position [VOLUME] at the midway of its travel range, turn it fully clockwise and then fully counterclockwise. The display will change to "*".

[PARAMETER]を押すと次の検査に進みます。
In the same way turn the knobs shown below in that order to test them:
[VOLUME]→[BASS]→[MIDDLE]→[TREBLE]→[PRESENCE]→[MASTER]

When the test is successful, the program proceeds to the next test.

4. Switch
Connect two FS-5Us to [CONTROL 1/2] socket through PCS-31.
Press [NUMBER/VALUE] and the screen changes as follows.

```
PREAMP  # --- --- ...
   --- --- ---
```

同様に他のつまみも検査します。
[VOLUME]→[BASS]→[MIDDLE]→[TREBLE]→[PRESENCE]→[MASTER]

正常に動作すると自動的に次に進みます。

4. Switch
[CONTROL 1/2]にジャックにPCS-31を使ってFS-5Uを2個接続します。
[NUMBER/VALUE]を押すと、次のように表示されます。

The following switches are displayed at the upper left of the LCD. Press the switches in the order shown below.
[PREAMP]→[GLOBAL]→[TUNER]→[UTILITY]
[WRITE]→[EXIT]→[METER]→[EFFECT]

Press the FS-5Us by following the instruction on the screen.
[CONTROL 1]→[CONTROL 2]

When the test is successful, the program proceeds to the next test.

*The error message, "Wrong switch!" will appear when wrong switch is pressed.

5. Encoders (PARAMETER and NUMBER/VALUE dials)
Press [NUMBER/VALUE] and the encoder name appears at the upper line of the LCD.

```
PARAMETER
  < >
```

次のように表示されます。

次のように表示されます。

Turn the encoders as shown below and verify the message "OK!":
1. [PARAMETER], counterclockwise→[PARAMETER], clockwise
2. [NUMBER/VALUE], counterclockwise→[NUMBER/VALUE], clockwise

When the test is successful, the program proceeds to the next test.

6. EXP PEDAL
Connect EV-5 (with MIN VOL set to "0") to [EFFECT REMOTE/EXP PEDAL] socket.
Press [NUMBER/VALUE] and the screen changes as follows:

```
EV-5の踏板で試してみることに変化することを確認します。
中央（中間値）→踏板込み（最深値）→反戦（最小値）
正常に動作すると自動的に次に進みます。
```

With the pedal of the EV-5 set at its center of the travel, fully depress the pedal (max.) and then fully swing up (min.).
Verify that display changes to "[ ]".
When the test is successful, the program proceeds to the next test.

7. EXT CTL 1
Connect [EXT CTL 1] socket to a remotely controllable equipment.
Press [NUMBER/VALUE] to start the test.

```
7. EXT CTL 1
ON !
```

Verify that the status of the external equipment is toggled as the display shows "ON!" and "OFF".
Press [PARAMETER] and the program proceeds to the next test.

8. EXT CTL 2
Follow the steps described in test 7. above, but read CTL 1 as CTL 2.

9. Battery
Press [NUMBER/VALUE] and the voltage of the backup battery is displayed.

```
9. Battery
3.12V
```

If the voltage reading is 2.8 volts or higher, the test is successful.
Press [NUMBER/VALUE] and the program proceeds to the next test.

*If an error is encountered, the following message will appear.
"Low!": The voltage reading is 2.7 volts or lower. The battery needs replacement.
"No Battery": No battery connected.

10. MIDI IN/OUT
Run a MIDI cable between [MIDI IN] and [MIDI OUT/THRU] sockets.
Press [NUMBER/VALUE] to start the test. The following message will appear if the test is successful.

```
10. MIDI IN/OUT
Verify OK !
```

The program proceeds to the next test.

*データが2.8V以上であれば正常です。
[NVOL/VALUE]を押して次の検査に進んで下さい。

*エラーがあった場合には次のいずれかのメッセージが表示されます。
"Low!": 電圧が低減しています（2.7V以下）。バッテリーを交換してください。
"No Battery": バッテリーが装着されていません。

10. MIDI IN/OUT
[MIDI IN]コネクターと[MIDI OUT/THRU]コネクターを1本の
MIDIケーブルで接続します。

Press [NUMBER/VALUE] to start the test. The following message will appear if the test is successful.

[NVOL/VALUE]を押して検査を始め、正常であれば次の
ように表示されます。

表示後自動的に次に進みます。
11. OUTPUT A D/A
Press [NUMBER/VALUE] to start the test.

Monitor the level of the sawtooth wave on [OUTPUT A L(MONO)/R] socket. Verify the level change when the display changes from "+4dB" to "-10dB." If you test L(MONO) and R sockets one by one, insert an open plug into R socket when you test L(MONO) socket.

<table>
<thead>
<tr>
<th>Monitoring device</th>
<th>Oscilloscope</th>
<th>INPUT VOLUME</th>
<th>MAX</th>
<th>0.1ms/DIV</th>
<th>2 V/DIV</th>
</tr>
</thead>
</table>

12. OUTPUT B D/A
In the similar way as in test 11, test [OUTPUT B L(MONO)/R] socket output.

13. SEND D/A
In the similar way as in test 11, test [SEND 1/2] socket output.

14. INPUT A/D
-<Noise level>
Measure the noise level on [OUTPUT A L(MONO)/R], [OUTPUT B L(MONO)/R] and [SEND 1/2] sockets under the following conditions.

<table>
<thead>
<tr>
<th>Condition</th>
<th>INPUT VOLUME</th>
<th>MAX</th>
<th>OUTPUT VOLUME</th>
<th>MAX</th>
<th>Input signal</th>
<th>None</th>
</tr>
</thead>
</table>

Acceptable: OUTPUT A, B: L(MONO) = -74dBm or below
R = -77dBm or below

*When testing L(MONO) socket, insert an open plug into the R socket. SEND 1/2: No unusual sound should be heard.

-<INPUT sockets>
Check the output on [OUTPUT A L(MONO)/R] or [OUTPUT B L(MONO)/R] and [SEND 1/2] sockets under the following conditions.

*If you test L(MONO) and R sockets one by one, insert an open plug into R socket when you test L(MONO) socket.

<table>
<thead>
<tr>
<th>Condition</th>
<th>INPUT VOLUME</th>
<th>MAX</th>
<th>OUTPUT VOLUME</th>
<th>MAX</th>
<th>Input signal</th>
<th>24kHz, 80mVp-p, square</th>
</tr>
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</table>

Press [PARAMETER] to proceed to the next test.
15. RETURN A/D
Press [NUMBER/VALUE] to start the test.

16. ESP Check
Press [NUMBER/VALUE] to start the ESP test. When the test completes successfully, the following message is displayed.

The program automatically starts the next test.

17. Factory Settings Load
Press [WRITE] and the following message will appear.

Press [WRITE] and the factory settings will be loaded.

*CAUTION
Loading the factory settings erases all the user data.
IDENTIFYING VERSION NUMBER/バージョンナンバーの確認

1. Turn the power off.
2. Turn the power on while pressing [TUNER] and [METER].
3. Press the buttons in the order shown below.
   [PREAMP]→[GLOBAL]→[UTILITY]

GP-100
Ver. 1.00

FACTORY SETUP/ファクトリー・データの書き込み

CAUTION
Loading the factory settings erases all the user data.

1. Turn the power off.
2. Turn the power on while pressing [PARAMETER] knob.
   A display will appear, allowing you to specify the area of
data you wish to initialize.
3. Use [PARAMETER] knob and [VALUE] knob to specify the
   area to be initialized.

Factory Set
System → #200

4. Press [WRITE] button, and the specified area of data will
   be initialized.

*The factory data can also be loaded by the procedure
explained in "17. Factory Load" during test mode.

DATA SAVE/データの保存

1. Make connections between [MIDI IN] on GP-100
   and [MIDI IN] on the receiving side. If the receiving side is a
   sequencer, set it in the recording state.
   If the receiving side is another GP-100, make sure that the
   MIDI Channel is the same as that of the transmitting side
   and set to the Bulk Load mode (refer to the following section,
   "DATA LOAD").
2. Press [UTILITY] button several times to call at the next
display.

MIDI Channel
Channel = 1

1. GP-100's [MIDI OUT/THRU] connector and [MIDI IN] connector is connected.
2. Press [UTILITY] button several times to call at the next
display.

MIDI OUT/THRU
MIDI OUT

3. Rotate [PARAMETER] knob to call at the next display.

Rotate [VALUE] knob to specify "MIDI OUT".

4. [PARAMETER] knob to call at the next display.

MIDI Bulk Dump
System → Temp

5. Press [WRITE] button to send data through MIDI OUT.

When the transmission has been completed, the previous
display will appear.

MIDI Bulk Dump
Data Dumping...

6. Press [EXIT] button to end the procedure.

MIDI Channel Channel = 1

1. Make connections between [MIDI IN] on GP-100 and
   [MIDI OUT] on the transmitting side.
2. Press [UTILITY] several times to call at the next display.
   Make sure that the MIDI channel is the same as that of the
   transmitting side.

3. Rotate [PARAMETER] knob to call at the next display.

MIDI Bulk Load
Waiting...

4. Transmit data from the transmitting device. When the GP-
   100 receives data, the following display will appear.

MIDI Bulk Load
Receiving...

When data reception is complete, the following display will
appear.

MIDI Bulk Load
Idling...

At this time, data may continue to be received.

4. Transmit data from the transmitting device. When the GP-
   100 receives data, the following display will appear.

MIDI Bulk Load
Waiting...

At this time, data may continue to be received.

4. Transmit data from the transmitting device. When the GP-
   100 receives data, the following display will appear.

MIDI Bulk Load
Receiving...

When data reception is complete, the following display will
appear.

MIDI Bulk Load
Idling...

At this time, data may continue to be received.

4. Transmit data from the transmitting device. When the GP-
   100 receives data, the following display will appear.

MIDI Bulk Load
Waiting...

At this time, data may continue to be received.

4. Transmit data from the transmitting device. When the GP-
   100 receives data, the following display will appear.

MIDI Bulk Load
Receiving...

When data reception is complete, the following display will
appear.

MIDI Bulk Load
Idling...

At this time, data may continue to be received.

4. Transmit data from the transmitting device. When the GP-
   100 receives data, the following display will appear.

MIDI Bulk Load
Waiting...

At this time, data may continue to be received.

4. Transmit data from the transmitting device. When the GP-
   100 receives data, the following display will appear.

MIDI Bulk Load
Receiving...

When data reception is complete, the following display will
appear.

MIDI Bulk Load
Idling...

At this time, data may continue to be received.

4. Transmit data from the transmitting device. When the GP-
   100 receives data, the following display will appear.

MIDI Bulk Load
Waiting...

At this time, data may continue to be received.

4. Transmit data from the transmitting device. When the GP-
   100 receives data, the following display will appear.

MIDI Bulk Load
Receiving...

When data reception is complete, the following display will
appear.

MIDI Bulk Load
Idling...

At this time, data may continue to be received.

4. Transmit data from the transmitting device. When the GP-
   100 receives data, the following display will appear.

MIDI Bulk Load
Waiting...

At this time, data may continue to be received.

4. Transmit data from the transmitting device. When the GP-
   100 receives data, the following display will appear.

MIDI Bulk Load
Receiving...

When data reception is complete, the following display will
appear.

MIDI Bulk Load
Idling...

At this time, data may continue to be received.

4. Transmit data from the transmitting device. When the GP-
   100 receives data, the following display will appear.

MIDI Bulk Load
Waiting...

At this time, data may continue to be received.

4. Transmit data from the transmitting device. When the GP-
   100 receives data, the following display will appear.

MIDI Bulk Load
Receiving...

When data reception is complete, the following display will
appear.
MAIN BOARD ASS'Y
ASSY 70566323
(pcb 00786034)
MAIN BOARD ASS'Y
ASSY 70566323
(pcb 00786034)