

General Information on the Motorola GM350, GM600, and GM950

These radios should all be similar to each other. For gateway use the 128 Ch version is better as it has the full compliment of i/o signals available to the user, which the 4Ch version does not.

The MCX600 is the Asia version of the GM600 which is the MPT version of the GM350/950. The GM350 has its own RSS and are a PL/Singletone only version of the GM950. They come in two flavours, 4 channels without LCD and 128ch with LCD. Out of band is similar to the GP320/340 series.

The GM950 also has its own RSS. They have similar features to GM350 but also have SELECT-5. It comes in 4 flavours, 4 channels w/o LCD, 128 ch with LCD, 128ch with handheld control mic (HHCM), and 128ch with full keypad (eg. 0-9 + * and #). Same Out of Band as for the GM350.

If you are looking for the the pinout of the GTF377A "Front to Back" cable, the pinout is:

RJ45 8pin		16pin Accessory	Function(Acc)
7	Orange	6	BUS+
4	Green	7	Ground
1	Brown	13	SW B+
3	Yellow	14	Hook

The above cable lets you program from the accessory connector instead of the mic connector. It is an RJ45 female that is wired to a 16pin accessory connector using the above schematic. You plug this cable on the end of the standard programming cable (RJ45) and then into the accessory plug on the radio for rear programming (in the event you don't have a head on the radio to program through the mic jack).

Accessory Connector Details

The 16-pin accessory connector pin functions for the GM950 N3/N4 are as follows:

Pin	Name	Type
1	SPKR-	Analog O/P
2	Ext. Mic Audio	Analog I/P
3	GP1	Digital I/P
4	GP2	Digital O/P
5	Flat TX Audio	Analog I/P
6	BUS+	Digital I/O
7	GND	Ground
8	GP3	Digital O/P
9	GP4	Digital I/P
10	Ignition Sense	Digital I/P
11	RX Audio	Analog O/P
12	GP5	Digital I/O
13*	SW B+ Sense	Analog O/P

14	Hook	Digital I/P
15	RSSI	Analog O/P
16	SPKR+	Analog O/P

*Factory default SWB+

PIN 1

Speaker- Audio. Speaker- and Speaker+ (PIN 16) are used to connect an external speaker. The audio PA is a bridge amplifier with a minimum load resistance of 3.2 ohms. The internal speaker can be easily disabled by removing the control head. Disconnect the internal speaker and assemble the control head back to the radio.

PIN 2

Microphone audio. This microphone signal input is common with the microphone signal input on the microphone connector and is connected to the microphone path input of the ASFIC. The nominal input level is 80mV for 60% deviation. The DC impedance is 1100 ohms and the AC impedance is 1000 ohms. **Note: Only one microphone should be connected at any one time.**

PIN 3

General Purpose 1 (GP1). This is a digital input only and is also available on the internal option connector (J0102:7). The RSS details which functions may be assigned to this pin by the codeplug. The primary use for this pin will be external PTT. (See Note 1).

PIN 4

General Purpose 2 (GP2). This is a digital output only. The RSS details which functions may be assigned to this pin by the codeplug. The primary use for this pin is as external alarm output. (See Note 3).

PIN 5

Flat TX Audio. This input is for injecting signals into the transmit path that should not be filtered, e.g. the output of a modem. The nominal input level is 150 mVRMS for 60% deviation. The impedance is greater than 25 kohms.

PIN 6

BUS+. This connects to the radio's SCI serial bus which is used for programming and tuning the radio. This line is also available at the microphone connector Pin 7.

PIN 7

Ground. Used as a ground for both analog and digital signals.

PIN 8

General Purpose 3 (GP3). This is a digital output and is also available on the internal option connector (J0103:7). The RSS details which functions may be assigned to this pin by the codeplug. (See Note 2). This output is shared with the serial bus data line. It can be used as a normal output, but will be overridden by serial data when the programming lead is plugged in. To restore general purpose output operation, the programming lead must be removed and the radio turned off, then on again.

PIN 9

General Purpose 4 (GP4). This is a digital input only. The RSS details which functions may be assigned to this pin by the codeplug. (See Note 1). This is a special input that will force the radio to turn on when it is grounded. This can be used for any input function, but is usually used for emergency.

PIN 10

Ignition Sense. Connecting this line to the ignition line of the vehicle will automatically turn the radio on when the ignition of the vehicle is turned on. When the

ignition is connected, the radio cannot be turned off as long as the ignition is active. When this line is at 0V or is not connected, power on/off is under manual control. Resistor R0423, 4.7 kohm, which is not fitted as standard will cause the radio to be permanently on whenever 12 V is connected to the main power connector.

PIN 11

RX Audio Discriminator. The signal routed to this pin is controlled by ASFIC and gives continuous discriminator audio. For discriminator audio, the normal output level is 330 mVRMS for 60% deviation. The impedance is 600 ohms.

PIN 12

General Purpose 5 (GP5). This is a digital input/output and is also available on the internal option connector (J1003:3). The RSS details which functions may be assigned to this pin by the codeplug. (See Note 1 and Note 2).

PIN 13

Switched B+ Sense. The output of this pin may be configured by a solder link within the radio. Switched B+ is the default. The current limiting resistor R0455 default is 0 ohms, therefore, extreme care must be taken to avoid short circuiting this output to ground, which will damage the radio. The maximum continuous current allowed is 300 mA. A suitable external fuse must be installed into the lead to Pin 13 to avoid damage to the radio.

PIN 14

Hook. This port reads "0" when the microphone is on-hook, and "1" when the microphone is off-hook. It is assumed that the hook is a mechanical switch, so the software will always debounce this input. Also available on the microphone connector pin 3.

PIN 15

RSSI. Received Signal Strength Indication, buffered analog voltage.

PIN 16

Speaker+ Audio. Positive output of radio's PA (see PIN 1).

Note 1: Digital Input

- 4.7 kohm Internal Pull Up Resistor to +5 V,
- Maximum Input Voltage accepted as Low = 0.6 V
- Minimum Input Voltage accepted as High = 3.0 V

Note 2: Digital Output

- 4.7 kohm Internal Pull Up Resistor to +5 V,
- Maximum Current when Output Low = 10 mA
- Maximum Voltage when Output Low = 0.5 V @ 10 mA

Note 3: High Current Digital Output

- 4.7 kohm Internal Pull UP Resistor to B+,
- Maximum Current when Output Low = 200 mA
- Minimum Voltage when Output Low = 1.7 V @ 200 mA

Microphone Connector Details

PIN	Name	Type
1	N/C	
2	N/C	
3	Mic Hook	Digital I/P
4	Ground	Ground
5	Mic Audio	Analog I/P
6	Mic PTT	Digital I/O
7	BUS+	Digital I/O
8	Handset	Analog O/P