

1 Introduction

This information is derived from observing the serial port whilst pressing buttons and recording the activity on the SBUS. Some of the messages have then been replayed to determine their effect.

There is no authoritative documentation on the meaning of the data packets. My analysis might be completely wrong - there is no guarantee whatsoever. You have been warned!

This document describes messages specific to the Motorola GM-1200 radio. A separate document exists describing SB9600 / SBEP protocols including CRC generation.

2 SB9600 messages

The radio starts off in SB9600 mode. In this mode messages are 5 bytes long and take the following format :

Module address	Parameter 1	Parameter 2	Function	CRC
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The following messages have been observed / found / etc :

Address	Param1	Param2	Function	Meaning
05	Sub-device	Level	58	Control backlighting / illumination. Sub-device 02 = Display, 03 = Buttons. Level is 0 for OFF to D4 for ON. The display takes intermediate values for different levels of back-lighting. Didn't try setting higher for fear of over-driving something.
05	Control-ID	Value	57	Button press / Knob turned. See below for Control-ID mappings. For buttons, value is 1 for button down and 0 for button up.
00	Baud-rate	Module	06	Enter extended command mode (SBEP) with module. The baud-rate is 0x12 for 9600 bits/second. Other values not yet tried.
01	02	00	40	Enter CSQ mode
03	Channel-HI	Channel-LO	3F	Set the receiver channel. Where: $channel = \frac{freqInMHz}{6250} - 60000$ (for UHF model)
02	Channel-HI	Channel-LO	3F	Set the transmitter channel. Where: $channel = \frac{freqInMHz}{6250} - 60000$ (for UHF model)

3 Control mappings

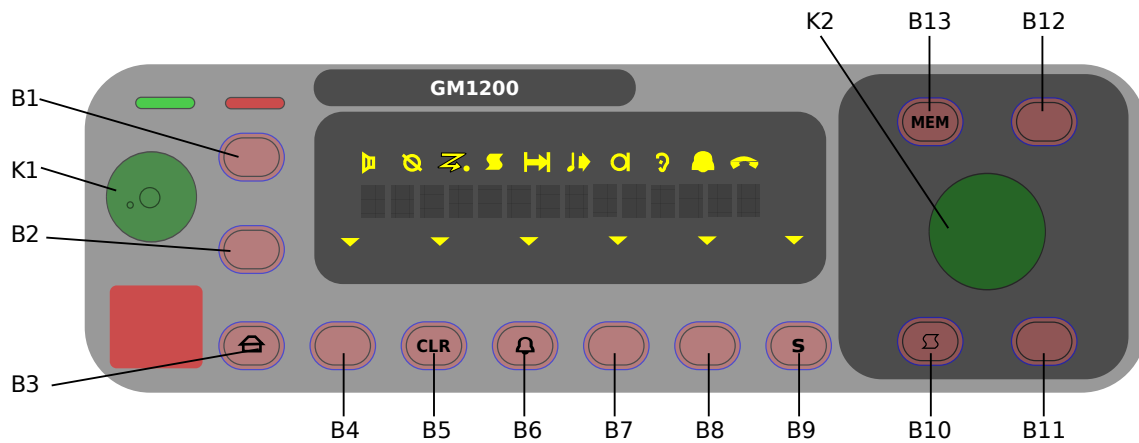


Figure 1: GM-1200 K5 Front Panel Controls

Control	ID (Base 16)	Info
K1	02	Volume. Value is between 00 and FF
K2	04	Selector. Value represents number of clicks. It is signed. +ve for clockwise, -ve for anti-clockwise.
B1	60	Button: Personality selector
B2	61	Button
B3	62	Button: Dedicated call
B4	63	Button
B5	64	Button: Clear (Monitor in conventional mode)
B6	65	Button: External alarm
B7	66	Button
B8	67	Button
B9	68	Button: Status message
B10	6B	Button: Absence selector
B11	6C	Button
B12	6A	Button
B13	69	Button: Short-form dial selector

4 SBEP: Display and Lamps

The display is at address 0x05. Communication with it is through SBEP mode.

Op-Code	Meaning	Format
01	Update text	8000LL0000TTTTTT...CCCCC... where LL is the length of the update. TT is the text data, LL characters long and CC is the character attributes. 0 = normal, 1 = flashing...)
21	Set lamp	01LLFF where LL is the lamp (see lamp mappings) and FF is the desired function. 00 = OFF, 01 = ON, 02 = FLASH (there is a slow flash at 06 too.)

4.1 Lamp mappings

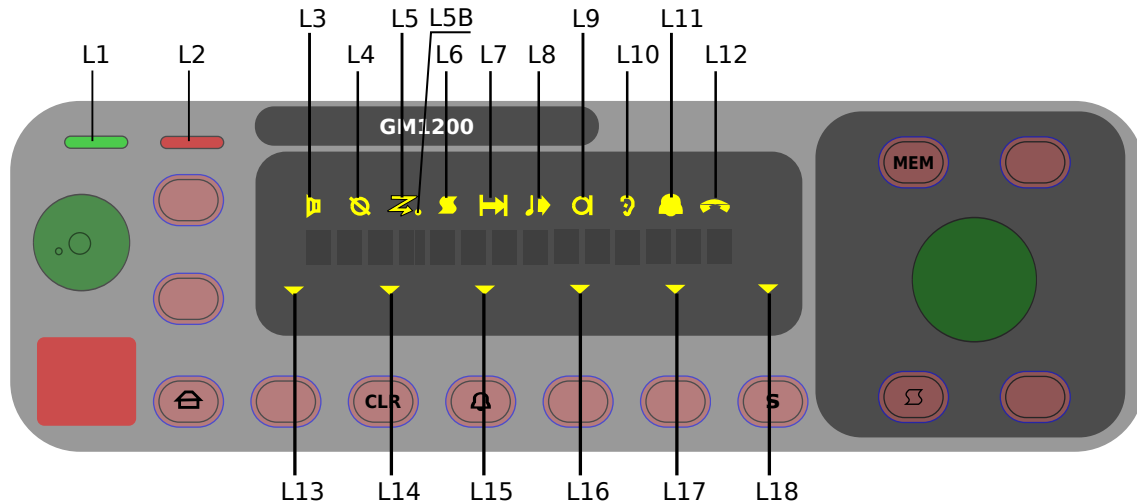


Figure 2: GM-1200 K5 Front Panel Lamps

Control	ID (Base 16)	Info
L1	0D	Orange LED
L2RED	0B	Tricolor LED.
L2GREEN	0C	Tricolor LED. Orange = BOTH red and green
L3	01	Speaker
L4	02	Control channel acquired
L5	04	Control channel scanning
L5B	05	Control channel scanning dot
L6	10	Away
L7	07	Arrow bar
L8	11	Note
L9	12	Circle bar
L10	13	Ear
L11	0E	Bell
L12	0F	Phone
L13 to L18	14 to 19	Button arrows