SG-2000
S.A.M.E. Signal Generator

INSTRUCTION MANUAL

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SG-2000 Signal Generator

The SG-2000 is a handheld RF signal generator. The output frequency is user programmable to any one of the seven standard frequencies between 162.400 and 162.550 MHz. The four front panel Alarm switches can be programmed for up to three county FIPS codes and any one of the fifty-three EVENT codes. The SG-2000 is compatible with any future weather or homeland security event codes.

Battery Installation or Replacement

Remove the two screws from the bottom of the case. Remove the top cover. Insert the battery into the holder and push it forward until it snaps into position. Install the top cover and the two screws.

Federal Information Processing Codes

The National Weather Service divides the United States into states and counties. Each county is assigned a six digit county code. For example, the code for Broward county Florida is 012011. The first digit in the code [0] identifies the county subdivision, the next two digits [12] identify the state FLORIDA and the last three digits [011] identify the county BROWARD.

Weather Data Packet

Figure 1 describes a typical weather data packet as it is received from the National Weather Service. For a list of FIP codes go to the NOAA web site at: http://www.nws.noaa.gov/nwr/indexnw.htm#sametable

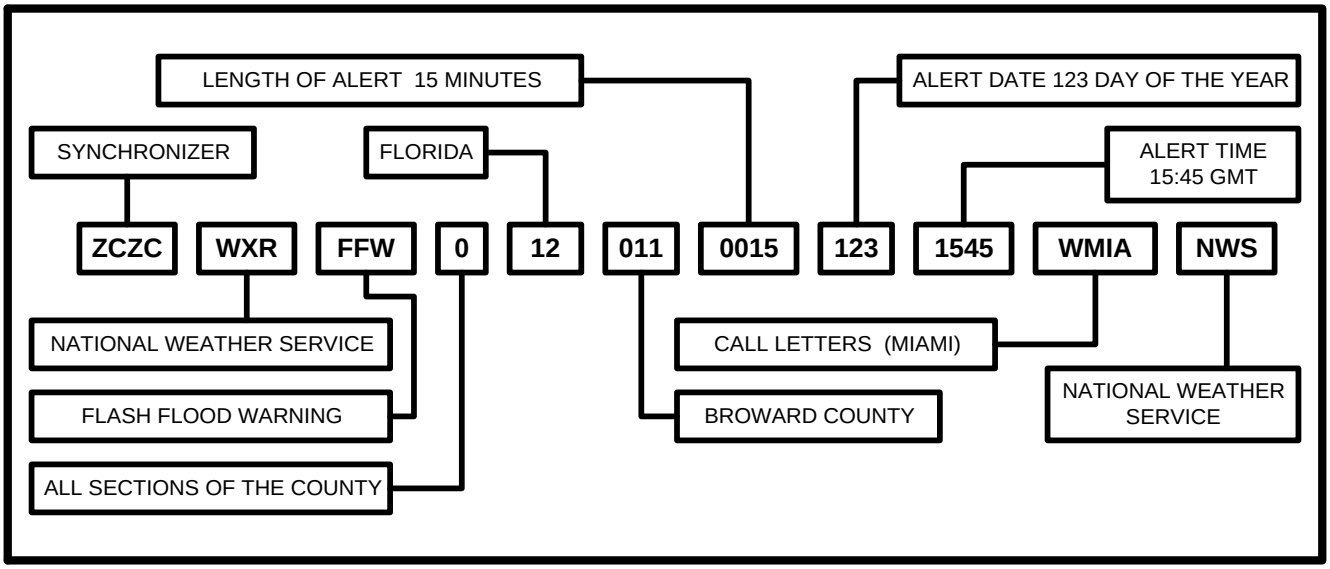


Figure 1

SG-2000 Operation

Press one of the front panel Alarm switches. The green POWER LED will light. In approximately one second, the red SEND LED will light and the SG-2000 will send three digital weather packets followed by a 30 second 1050 Hz test tone. The test tone is followed by: three-end of message packets.

Signal Generator Specifications:

RF Frequency:	*162.400 MHz through 162.550 MHz*
RF Output:	*2000uV +/- 6dB into 50 ohms*
Modulation:	*Narrow Band FM, 3KHz Deviation*
RF Connector:	*50 Ohm, Type BNC Connector*
RS232 Connector:	*RS-232 Computer: 9 Pin D (Female)*
Power: (Alarm Mode)	*+9VDC @ 65 ma: Internal Alkaline Battery*
Power: (Rest Mode)	*+9VDC @ 900uA: Internal Alkaline Battery*
Battery Life:	*12 Month Minimum*
Dimensions:	*5" H x 5" W x 2" D*
Net Weight:	*1.0 lbs.*

SG-2000 Default Settings

ALARM 1
Event = RWT Weekly test
FIP1 = 012011, FIP2 = 012086, FIP3 = 012099

ALARM 2
Event = FFW Flash Flood Warning
FIP1 = 012011, FIP2 = 012086, FIP3 = 012099

ALARM 3
Event = TOR Tornado Warning
FIP1 = 012011, FIP2 = 012086, FIP3 = 012099

ALARM 4
Event = SVR Severe Thunderstorm Warning
FIP1 = 012011, FIP2 = 012086, FIP3 = 012099

NOTES:
The event length is set at 15 minutes.
The Date is set for the 123rd day of the year.
The Time is set for 1545 UTC
The Station ID is set for WXYZ/NWS

Program SG-2000 Signal Generator

Connect a "direct" RS-232 cable between the SG-2000 and your computer and open the Hyper Terminal program. Select the active COMM port and set it for 9600 Baud 8N1.

To activate the RS-232 port on the SG-2000 press any one of the front panel alarm switches. When the green power LED lights but before the red send LED lights press ENTER on the computer to display the SG-2000 programming menu.

NOTE: If a communications problem is experienced while using a USB to RS-232 adapter cable, please review CAT Note 19 at: www.catauto.com

SG-2000 Programming Commands

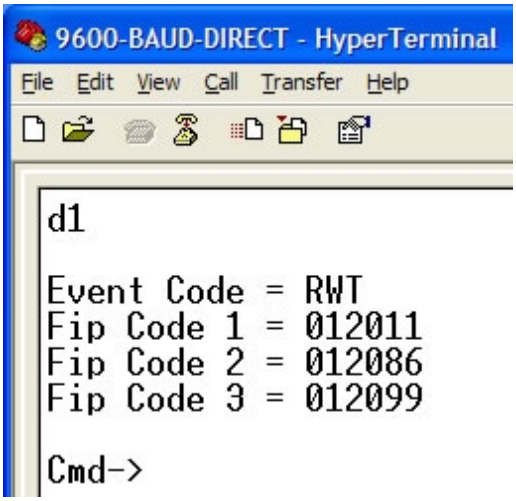
Command	Description
menu	Display this menu
freq	Display RF frequency
d1	Display switch #1 settings
d2	Display switch #2 settings
d3	Display switch #3 settings
d4	Display switch #4 settings
e1	Set switch #1 Event code
e2	Set switch #2 Event code
e3	Set switch #3 Event code
e4	Set switch #4 Event code
f1	Set switch #1 FIP codes
f2	Set switch #2 FIP codes
f3	Set switch #3 FIP codes
f4	Set switch #4 FIP codes
t1	Send switch #1 alert
t2	Send switch #2 alert
t3	Send switch #3 alert
t4	Send switch #4 alert
load	Load settings
exit	Load settings and exit

Display and Program the Output Frequency

*Enter the **[freq]** command to display the current RF output frequency. To change the frequency, enter the number **[1, 2, 3, 4, 5, 6 or 7]** that represents the desired operating frequency. Enter **[0]** to keep the existing frequency.*

Display Switch Parameters

*To display the switch parameters, enter the **[d1, d2, d3 or d4]** command.*



Program Event Codes

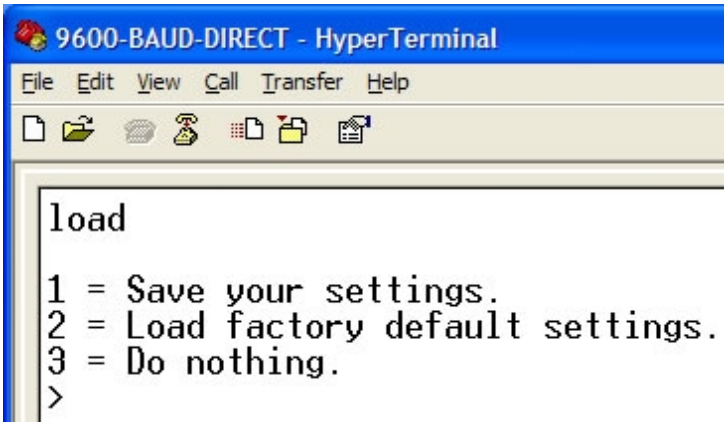
*To change an Event code, enter the Set Event Code **[e1, e2, e3 or e4]** command. Enter the three-letter Event Code from the table on pages 5 and 6.*

Program County FIP Codes

*To change a county FIP code, enter the **[f1, f2, f3, or f4]** command. Each Alarm switch will send a data packet with up to three county FIP codes. Select FIP position 1, 2, or 3 and press enter. Enter the desired six digit county FIP code. A complete list of county FIP codes is available on the NOAA website at: nws.noaa.gov/nwr/indexnw.htm#sametable*

Load Settings

*After a Frequency change, Event code or FIP code entry, use the **[load]** settings command to make the changes to the SG-2000 memory.*



Transmit Data Packet

*To transmit a data packet while in the programming mode, enter the **[t1, t2, t3 or t4]** command. The SG-2000 will send the switch alert data packet. NOTE: You must use the **[load]** command to save your settings before transmitting the data packet.*

Exit the Programming mode

*To exit the programming mode, enter the **[exit]** command. The SG-2000 generator will do an automatic load to memory before the exit.*

EAS Event (NWR-SAME) Codes

WEATHER RELATED EVENTS	*CODE*
BLIZZARD WARNING	*BZW*
COASTAL FLOOD WATCH	*CFA*
COASTAL FLOOD WARNING	*CFW*
DUST STORM WARNING	*DSW*
FLASH FLOOD WATCH	*FFA*
FLASH FLOOD WARNING	*FFW*
FLASH FLOOF STATEMENT	*FFS*
FLOOF WATCH	*FLA*
FLOOD WARNING	*FLW*
FLOOD STATEMENT	*FLS*
HIGH WIND WATCH	*HWA*
HIGH WIND WARNING	*HWW*
HURRICANE WATCH	*HUA*
HURRICANE WARNING	*HUW*
HURRICAN STATEMENT	*HLS*
SEVERE THUNDERSTORM WATCH	*SVA*
SEVERE THUNDERSTORM WARNING	*SVR*
SEVERE WEATHER STATEMENT	*SVS*
SPECIAL MARINE WARNING	*SMW*
SPECIAL WEATHER STATEMENT	*SPS*
TORNADO WATCH	*TOA*
TORNADO WARNING	*TOR*
TROPICAL STORM WATCH	*TRA*
TROPICAL STORM WARNING	*TRW*
TSUNAMI WATCH	*TSA*
TSUNAMI WARNING	*TSW*
WINTER STORM WATCH	*WSA*
WINTER STORM WARNING	*WSW*

EAS Event (NWR-SAME) Codes

NON-WEATHER RELATED EVENTS	***CODE***
EMERGENCY ACTION NOTIFICATION	*EAN*
EMERGENCY ACTION TERMINATION	*EAT*
NATIONAL INFORMATION CENTER	*NIC*
STATE AND LOCAL CODES OPTIONAL	
AVALANCHE WATCH	*AVA*
AVALANCHE WARNING	*AVW*
CHILD ABDUCTION EMERGENCY	*CAE*
CIVIL DANGER WARNING	*CDW*
CIVIL EMERGENCY MESSAGE	*CEM*
EARTHQUAKE WARNING	*EWQ*
EVACUATION IMMEDIATE	*EVI*
FIRE WARNING	*FRW*
HAZARDOUS MATERIAL WARNING	*HMW*
LAW ENFORCEMENT WARNING	*LEW*
LOCAL AREA EMERGENCY	*LAE*
911 TELEPHONE OUTAGE EMERGENCY	*TOE*
NUCLEAR POWER PLANT WARNING	*NUW*
RADIOLOGICAL HAZARD WARNING	*RHW*
SHELTER IN PLACE WARNING	*SPW*
VOLCANO WARNING	*VOW*
ADMINISTRATION EVENTS	
ADMINISTRATIVE MESSAGE	*ADR*
NATIONAL PERIODIC TEST	*NPT*
NETWORK MESSAGE NOTIFICATION	*NMN*
PRACTICE DEMO WARNING	*DMO*
REQUIRED MONTHLY TEST	*RMT*
REQUIRED WEEKLY TEST	*RWT*

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