The Weather Star 4000

Version 4.11

January 2000

Installation/Operation

The Weather Star 4000

Version 4.11

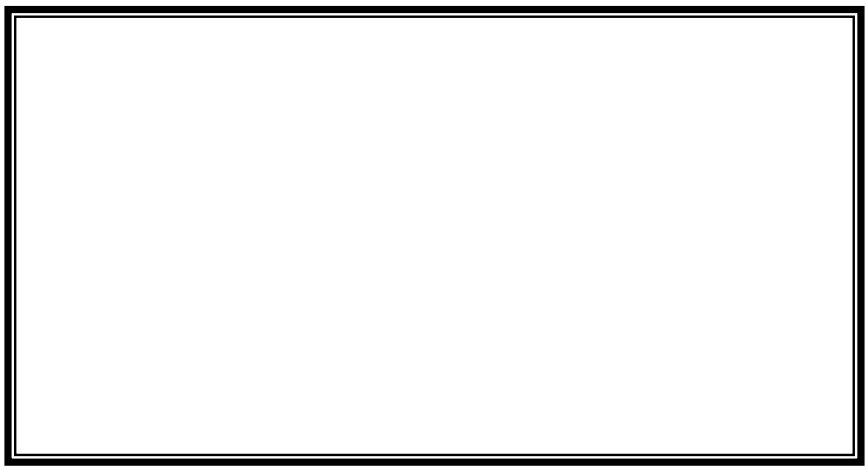
December 1999

Installation/Operation

Please discard any previous versions of this manual

Attention

Weather Star 4000 technology requires the correct county addresses to ensure proper delivery of weather warnings, watches, and advisories. Address information for your primary viewing county has been pre-installed in your new Weather Star 4000 based on the data that your system has previously provided to The Weather Channel®. If for any reason your viewership area has shifted or expanded to another county, please notify Star Operations immediately (**1-800-554-7354**).



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Send your comments to:

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Or by internet email to:

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Introduction

The Weather Channel® transmits its programming from the uplink in Atlanta, Georgia to affiliates throughout the U.S. (see Figure 1). Transmitted with The Weather Channel programming are network control commands and weather data supplied by the National Weather Service for thousands of weather zones.

At the affiliate site, The Weather Star 4000 is installed between a satellite receive system tuned to The Weather Channel programming feed and the channel modulator. The Weather Star 4000 captures the data designated for its specified weather zone and displays it automatically at the appropriate time. Local crawl messages may be entered through the supplied internet modem or with a terminal through the RS-232 port.

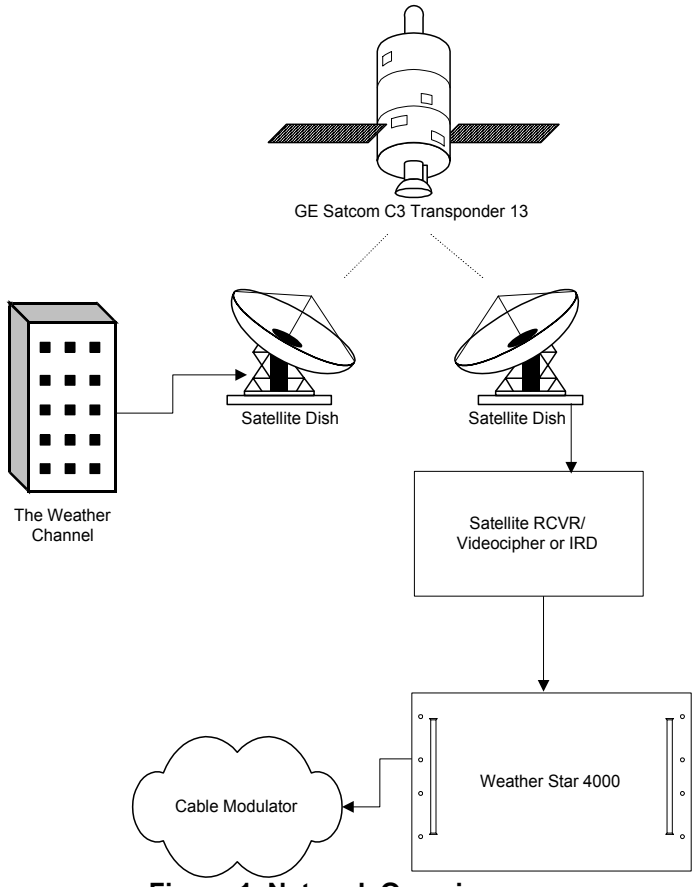

Figure 1. Network Overview

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You can think of a broadcast on The Weather Channel as a one-way client/server architecture, in which raw data and audio/video (A/V) are sent to the Weather Star 4000 and the cable operator location.

The Weather Star 4000 then assembles the data for display or passes through the A/V signal depending on the instructions sent by The Weather Channel.

The Weather Star 4000 is either connected using a separate receiver and videocipher (as shown in Figure 2) or it is connected using an integrated receiver/descrambler (IRD) (as shown in Figure 3).

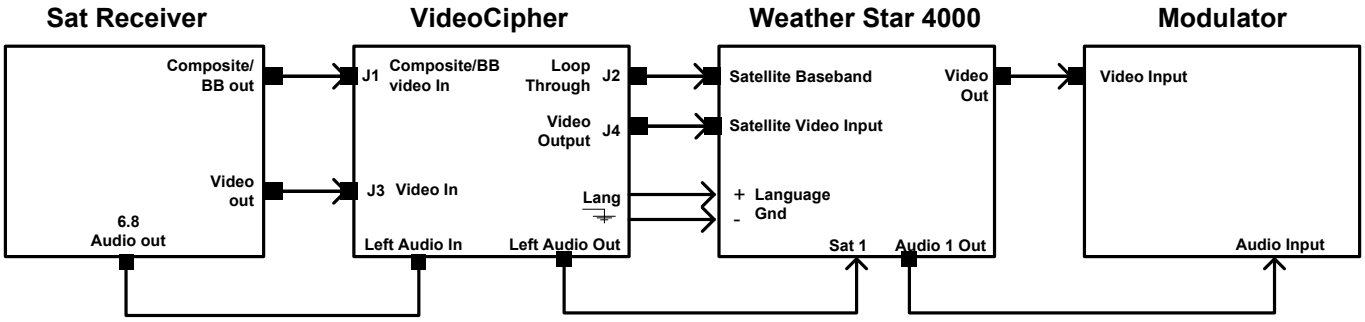

Figure 2. Connections Using a Separate Receiver and Videocipher

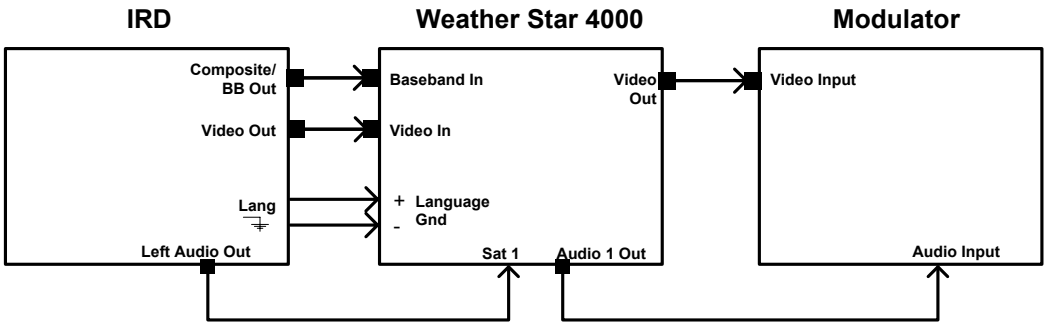

Figure 3. Connections Using an Integrated Receiver/Descrambler (IRD)

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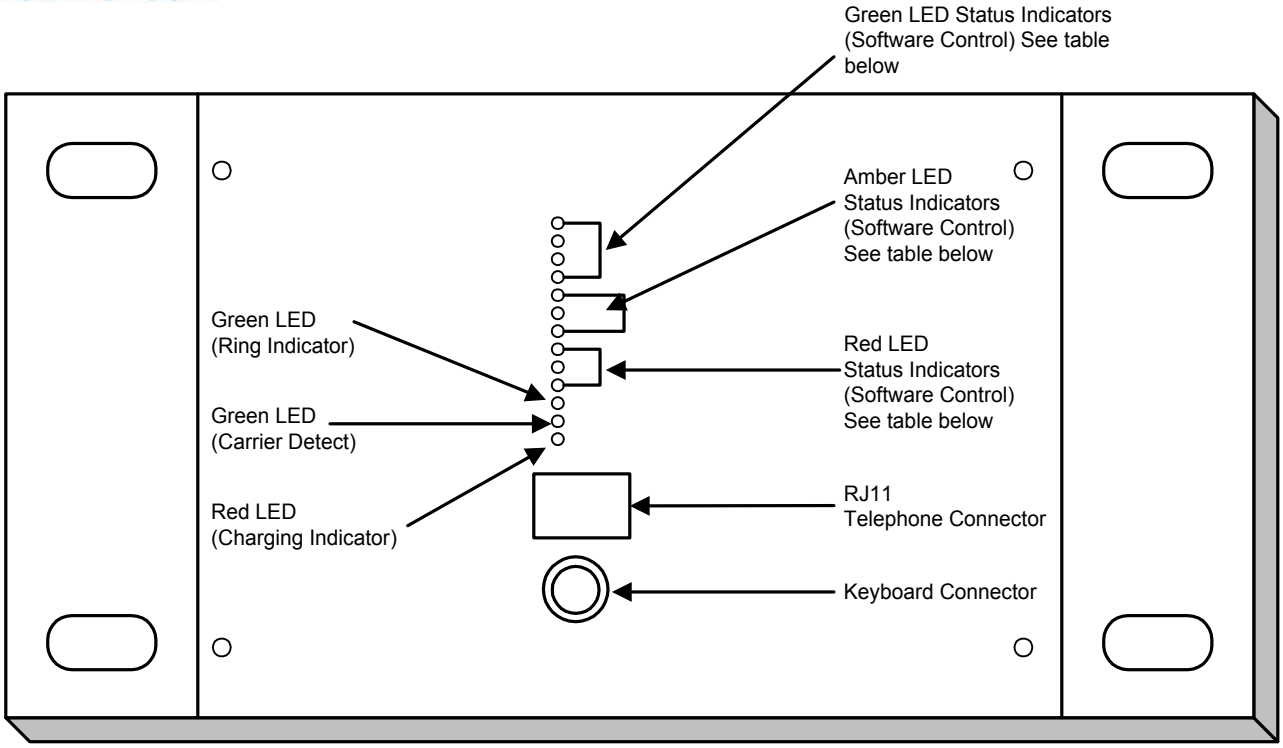

Figure 3. Front Panel

LED	Color	Purpose	State
1 (top)	Green	Satellite Video	ON (After software loads)
2	Green	Satellite Data	ON (After software loads)
3	Green	Local Video	Don't Care
4	Green	Not Assigned	OFF
5	Amber	Commercial Pre-Roll	Don't Care
6	Amber	Commercial On-Air	Don't Care
7	Amber	Modem in-use	OFF
8	Red	Not Assigned	OFF
9	Red	Not Assigned	OFF
10	Red	System Error	OFF
11	Green	Ring Indicator	OFF
12	Green	Carrier Detect	Off
13 (Bottom)	Red	Charging Indicator	ON or OFF

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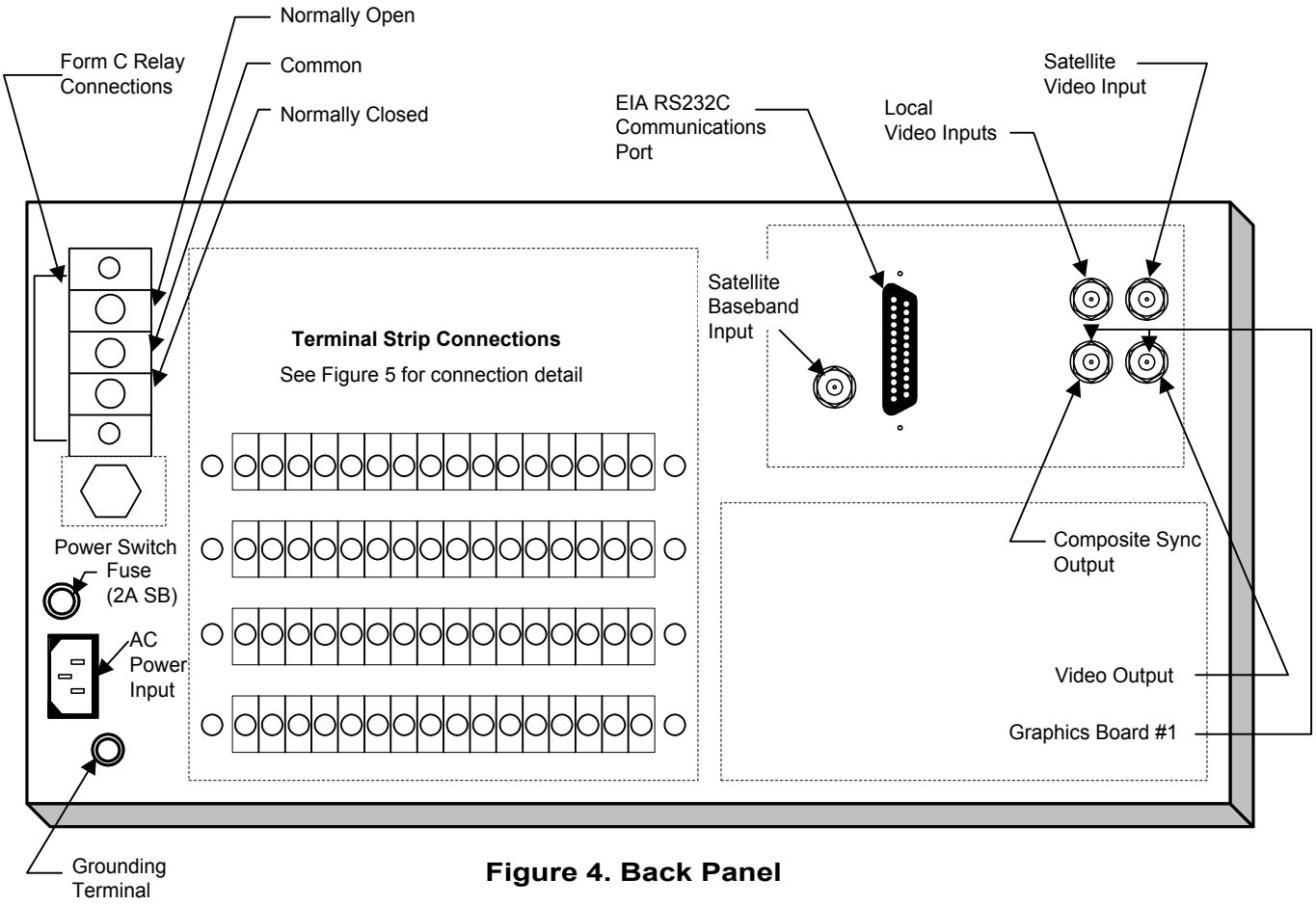

Figure 4. Back Panel

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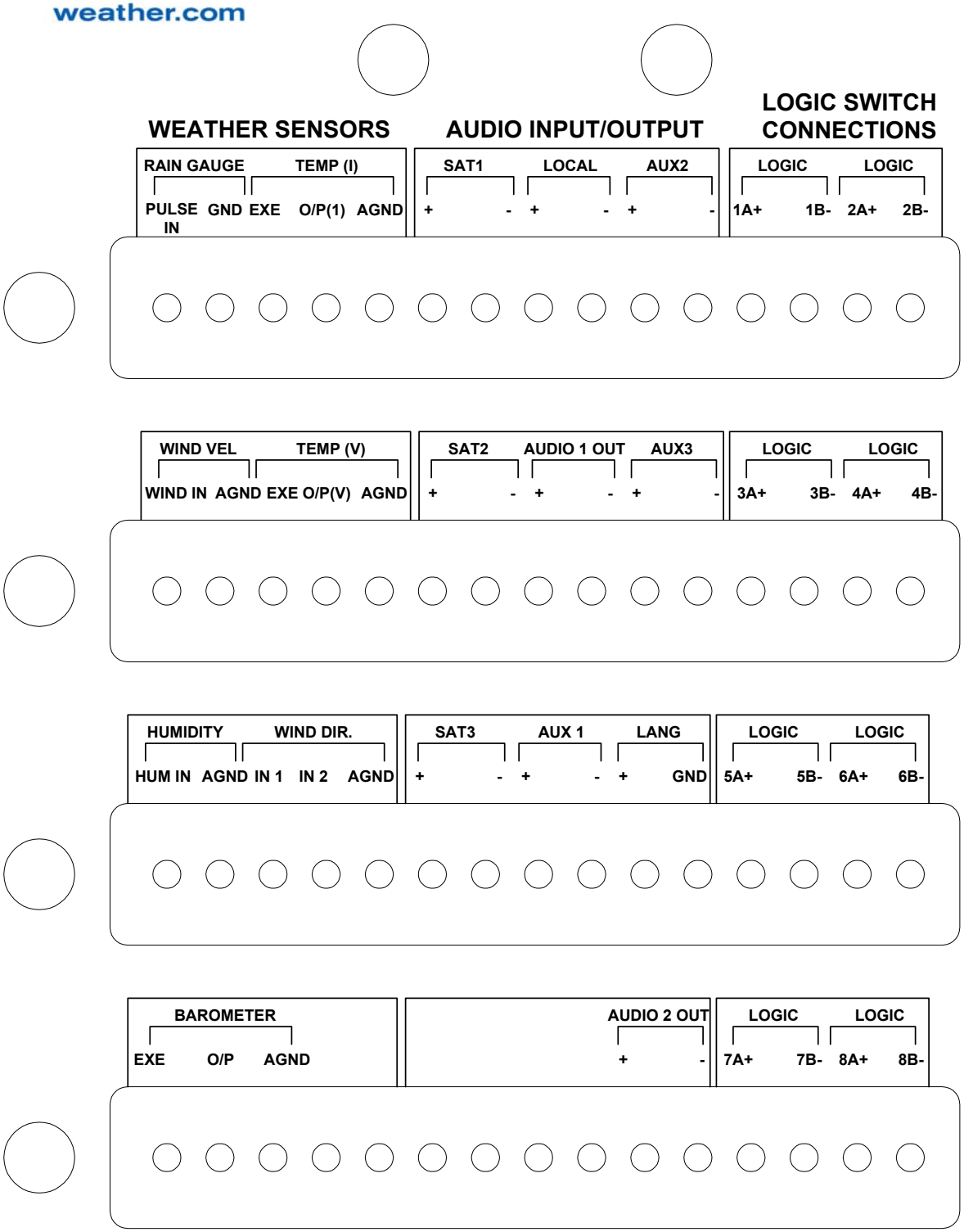

Figure 5. Terminal Strip Connections

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Installing the Weather Star 4000

The Weather Star 4000 is shipped with:

- This user's manual
- a power cable
- a computer keyboard (XT/AT switchable)

Operating requirements

Electrical requirements

Line Voltage	117 volts AC.
Voltage Tolerance	108-126 Volts
Power Source Phasing	Single
Power Source Frequency	60 Hz
Power Consumption	100 Watts

Environmental Requirements (operational)

Temperature Range	32º to 104ºF (0º to 40ºC) (ambient)
Relative Humidity	0% to 95% (noncondensing)

Physical Dimensions

Width	19 inches
Height	7 inches (4 rack units)
Depth	18.7 inches
Weight	30 pounds

Rechargable Battery

The Weather Star 4000 contains two 4-volt, 10-ampere/hour batteries wired in series. Under normal conditions and with a typical configuration, they will back the memory up

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for 2-3 hours. They can take anywhere from several minutes to 24 hours to fully recharge depending on how deeply they have been discharged. Charging is automatic and is indicated by the bottom LED on the front of the unit. When the LED is on, it indicates that the batteries are charging. When the LED is off, it indicates that the batteries are fully recharged.

External Device Connections

Audio Inputs

Specification: 0.8 volt RMS if measured with a meter or 1.1 volts peak to peak per leg, 2.2 volts both legs if measured with a scope. 600 ohm impedance (0 DBm) 2 Wire Screw Terminals, electrically balanced (twisted pair wire).

Line Name	Content
Sat 1	Primary audio, from descrambler
Sat 2	Not used
Sat 3	Not used
Aux 1	Not used
Aux 2	Not used
Aux 3	Not used
Local	Local commercial audio input

Audio Outputs

Unity gain with input. Specifications: 0.8 Volts RMS, 2.2 Volts peak to peak, 600 ohm impedance (0 DBm), 2 Wire Screw Terminals, electrically balanced (twisted pair wire). Chassis ground should be used as the zero reference for balanced systems (Pin-1 on an XLR connector).

Line Name	Content
Audio Out 1	Program Audio for distribution
Audio Out 2	Not used

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Video Inputs and Outputs

The video inputs and outputs are used to process the visual portion of The Weather Channel. The system normally selects one of three video sources for output. Generally, the three video sources are SATELLITE VIDEO which contains the video portion of The Weather Channel, SATELLITE COMPOSITE BASEBAND which is used by the unit to generate displays of local weather information, and LOCAL VIDEO from your own local commercial insertion equipment.

Video Inputs

Specification: BNC Connectors, EIA RS-170 (NTSC) Standard, 1 Volt (p-p) 75 ohm impedance, coaxial video cable.

Line Name	Content
Satellite Video	TWC Video from descrambler
Local Video	Local Video Input (Optional).
Satellite Composite Baseband	Baseband satellite signal input to The Weather Star 4000 from the Baseband output of the satellite receiver after looping through the VCII descrambler. This may also be labeled on the satellite receiver as “COMPOSITE BB OUT”, “CMPSTBB OUT”, “DEMOD VIDEO OUT”, “BB OUT”, “UNFILTERED VIDEO OUT”, or “DEMOD OUT”. If the receiver does not have an output labelled as one of these examples, consult the operation manual or manufacturer of the receiver.

Video Outputs

Specification: BNC Connectors, EIA RS-170 (NTSC) Standard, 1 Volt (p-p), 75 ohm impedance, coaxial video cable, unity gain from video sources.

Line Name	Content
Video Out	Program Video Out for Distribution.
CS Out	Composite Sync Output for optional use by your local commercial VTR or other insertion equipment. (Specification: -4.0 Volt peak, 75-ohm impedance).

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Weather Sensor Inputs

These inputs may be used in conjunction with an optional circuit board in cable systems where a suitable weather observing station is not available for display of local weather conditions. Installation instructions for the optional circuit board are provided with the board. This board does not come with the unit unless specifically ordered.

Logic Switch Outputs

These isolated outputs will switch up to 0.5 Watts (maximum of 20 milliamperes at 25 Volts DC).

The Logic Switch Outputs are labelled as LOGIC 1 through LOGIC 8 plus LANG. Typical functions are as follows:

NOTE: Logic Switches are **polarity sensitive**. You must note the polarity for proper connections. In all cases, the **A** terminal is positive **(+)** and the **B** terminal is negative **(-)**.

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Logic Pair	Name	Description
1A (+)-1B (-)	Local Commercial Pre-roll	This is a switched output that can be used to start a VTR or to cue other local commercial insertion equipment. It occurs 8 seconds before the local commercial on-air is switched.
2A (+)-2B (-)	Local Commercial On-Air	This is a switched output that indicates that a local commercial in on air.
3A (+)-3B (-)	Not Used	Not Used
4A (+)-4B (-)	Weather Warning	This is a switched output that indicates that a weather warning has been issued for the local area.
5A (+)-5B (-)	Not Used	Not Used

Weather Warning Relay Output

Intended for activating external cable operation equipment such as your all channel alert system, this relay output is rated for 120 Volts, 3 Amperes AC or 24 Volts, 3 Amperes DC. The Form-C output is activated when a Weather Warning is issued for the local area.

The Form-C output is composed of three connections:

COMMON	Common connection
NC	Normally Closed connection
NO	Normally Open connection

RS-232C Communications Port

A standard DB-25S connector used to connect The Weather Star 4000 to external equipment such as a terminal or modem.

The RS-232C port is configured as a DTE (Data Terminal Equipment) asynchronous serial communications device. The RS-232C port comes from the factory set to **1200**

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baud, 8 data bits, no parity, and 1 stop bit. Only The Weather Channel can change these communication parameters. The following signals are supported:

Signal	Pin	Direction
GND (Frame Ground	1	
TXD (Transmit Data)	2	OUT
RXD (Receive Data)	3	IN
RTS (Request to Send)	4	OUT
CTS (Clear to Send)	5	IN
DSR (Data Set Ready)	6	IN
SG (Signal Ground)	7	
DTR (Data Terminal Ready)	20	OUT

A video terminal connected to the RS-232C port is preferred to the keyboard for interacting with the Weather Star 4000. This is because unlike the system keyboard, the RS-232C port session is not displayed on the outgoing video signal. This means that the operator does not have to be concerned that what is being typed in is being seen by subscribers as it is being typed. Refer to Using Video Terminal for more information on interfacing a terminal the Weather Star 4000.

Telephone Connector

The telephone connector for an internal direct connect modem is mounted on the front panel of the Weather Star 4000 and is implemented as an RJ-11 standard telephone jack. The modem comes from the factory set to **300 baud, 8 data bits, no parity, and 1 stop bit** and cannot be changed. It may be connected by means of a standard modular telephone line cord to an ordinary single line phone jack. The purpose of the modem and telephone connector is to provide a convenient method of remote access for entry and scheduling of “Crawl” messages and to permit the remote running of the remote access feature (if not being used for crawls). The telephone connector would only be used temporarily under the direction of the Weather Channel and would generally be disconnected.

Keyboard Connector

The keyboard connector is mounted on the front of the Weather Star 4000 and is implemented as a 5-pin DIN type connector. This will accommodate the system keyboard which is a PC/AT compatible model and which is used to interact with the system’s crawl

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message, audio test function, and configuration database facilities. Correct use of the system keyboard is described further in Using the Keyboard.

Mounting the Weather Star 4000

Rack Mounting

The Weather Star 4000 is designed for installation in a 19-inch instrument rack. It requires 4 rack units (7 inches) of panel space. There are four holes in the front of the system unit to permit placement of mounting bolts.

Ensure that the fan vents on the sides of the system unit are not blocked and that the front cover is left on so that the unit will have adequate air circulation for cooling.

Installation and connection

1. Unpack the system as detailed in Unpacking the Weather Star 4000.
2. Remove the front cover from the unit and reseat the CPU card. The CPU card is the first card on the left. It is the only one not anchored to the chassis with a screw, so **it may come loose during shipping**.
3. Mount the Weather Star 4000 as detailed in Mounting the Weather Star 4000.
4. Refer to Figure 1 and Figure 2 which depict the standard system configurations. The mandatory steps to connect the Weather Star 4000 in a standard configuration are:

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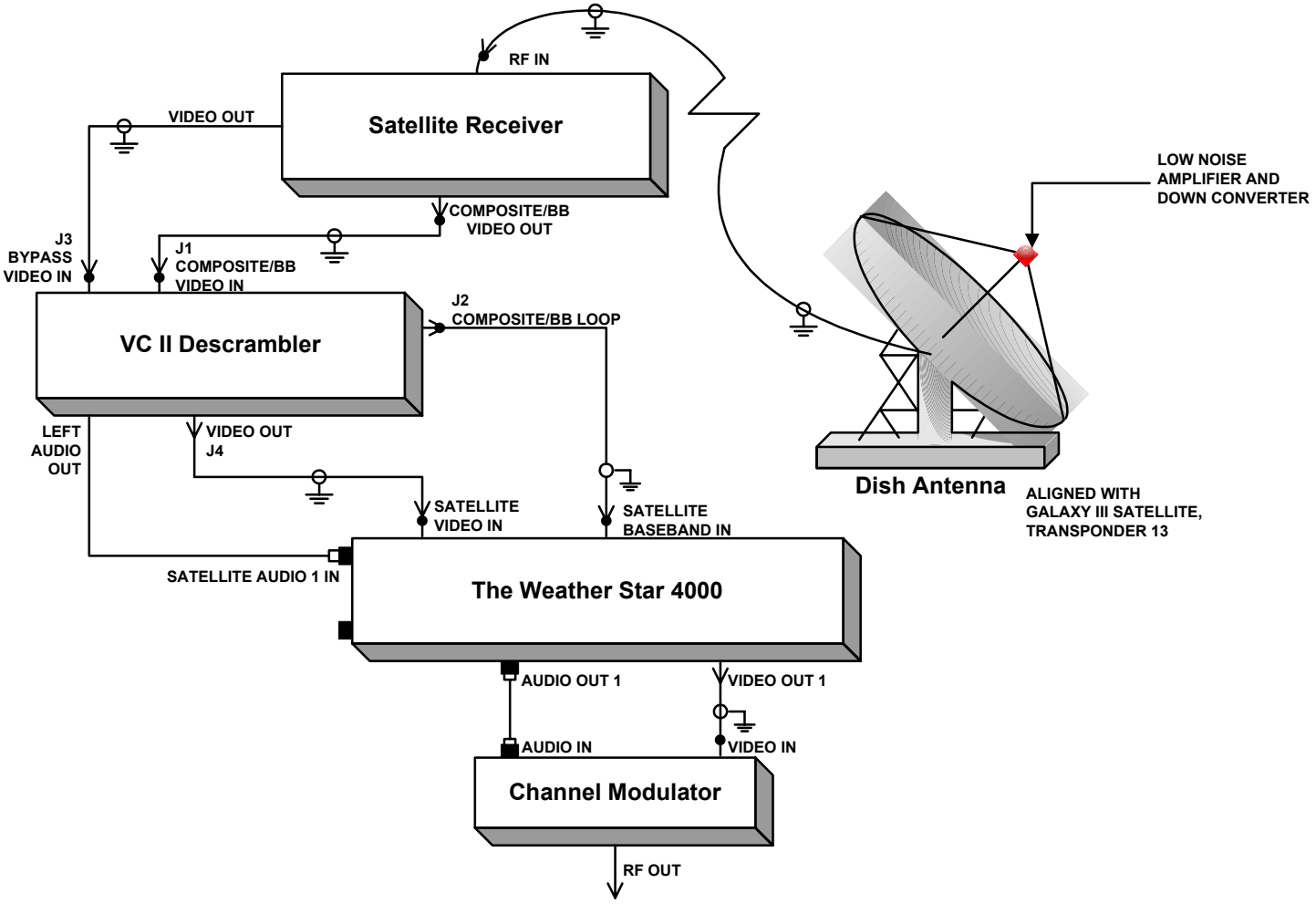

Figure 6. Separate Receiver/Descrambler System Configuration

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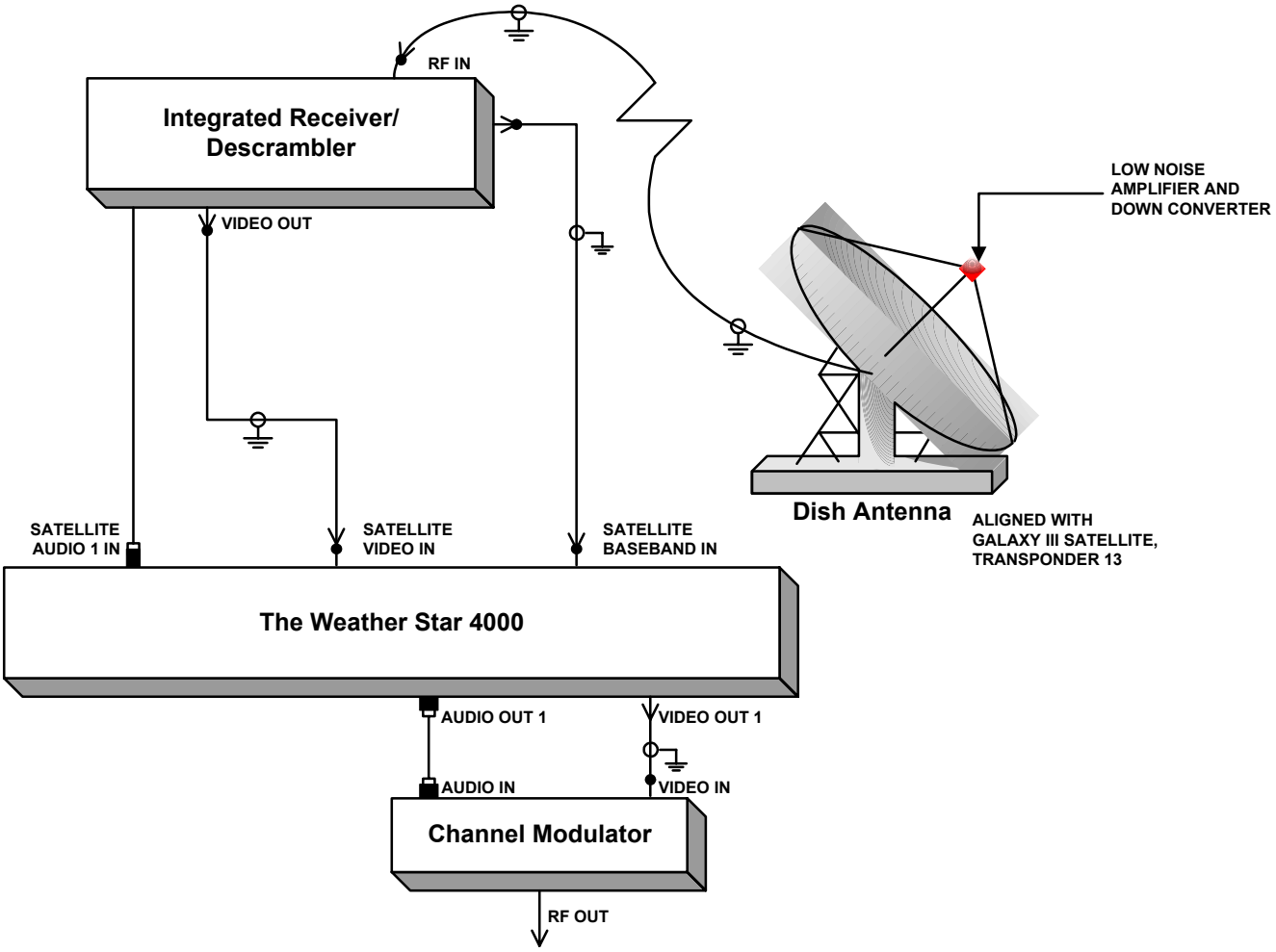

Figure 7. Integrated Receiver/Descrambler System Configuration

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5. Using a coaxial video cable, connect the BASEBAND VIDEO LOOP J2 of the VCII descrambler or BASEBAND VIDEO of the IRD to the SATELLITE BASEBAND INPUT of the Weather Star 4000.

6. Using a coaxial video cable, connect the VIDEO OUTPUT (J4) of the VCII descrambler or VIDEO OUT of the IRD, to the SATELLITE VIDEO INPUT of the Weather Star 4000.

7. Using a twisted pair wire, connect the LEFT AUDIO OUT of the VCII descrambler or IRD to the SAT 1 audio input of the Weather Star 4000. Observe polarity. If polarity is reversed, there may be no national audio.

8. Using coaxial video cable, connect the VIDEO OUTPUT of the Weather Star 4000 to the VIDEO INPUT of the channel modulator.

9. Using a twisted pair wire, connect AUDIO 1 OUT of the Weather Star 4000 to the AUDIO INPUT of the channel modulator.

10. If none of the optional connections of the Weather Star 4000 are to be used, skip to Testing the Weather Star 4000.

11. If the optional connections of the Weather Star 4000 are to be used, continue here. The optional connections include:

    - Local Video Input
    - Telephone Connection
    - RS-232C Serial Port
    - Composite Sync Output
    - Additional Logic Switch Outputs
    - Weather Warning Relay Output

Determine which of these optional connections are to be used and follow the applicable steps that follow:

Local Video Input:

The local commercial video source should be synchronized to the Weather Star 4000 before it is presented to this input. The local video source itself should get composite sync from the composite sync output of the Weather Star 4000.

Telephone Connection:

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Using a standard RJ-11 modular telephone cable, connect the telephone connector on the Weather Star 4000 to the appropriate telephone jack into the local telephone system.

RS-232C Serial Port:

Using an RS-232C cable with DB-25 connectors, attach the RS-232C port of the Weather Star 4000 to the RS-232C serial port on the appropriate device. Be sure that the device is configured as DTE (Date Terminal Equipment) and that a "null modem" cable is used. Refer to Using Video Terminal for diagram to build null-modem cable.

Composite Sync Output (Optional):

Using coaxial video cable, connect the composite sync output of the Weather Star 4000 to the composite sync input of the appropriate device.

Additional Logic Switch Outputs:

Using low voltage or twisted pair wire, connect each of the required logic switch outputs to the appropriate switchable devices.

Weather Warning Relay Output:

Using appropriate electrical wire, connect the FORM C RELAY connections to the device to be switched through the COMMON input to either the Normally Open (closes when a weather warning is issued) or the Normally Closed (opens when a weather warning is issued) output.

NOTE: If you are applying more than 24 volts across this relay, local electrical codes may require that this procedure be performed by a licensed electrician.

Be sure that the power switch on the rear of the Weather Star 4000 is in the "OFF" position. Using the power cable provided, connect the 117-volt AC power input of the Weather Star 4000 to an electrical outlet or uninterruptable power supply (UPS) (if used). This must be a three-prong grounded power source.

The connections are now complete and the Weather Star 4000 is ready to be tested, however, **do not turn the unit on yet**. See instructions below.

Test the Weather Star 4000 system as outlined in the following subsection.

Testing the Weather Star 4000 System

1 Turn the battery on using the switch on the front inside of the unit.

Important: Turn battery power on before applying power to the unit to insure proper operation of the charging circuitry.

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2 Apply power to the Weather Star 4000 by turning the power switch at the rear of the system to the ON position.

Because the system downloads its software from the satellite, **a wait of up to two hours IS required before local forecast pages will be displayed. A wait of up to four hours is required for the extended and 36-hour forecasts to load**.

3 When the software has been received, observe the LED status indicators for the following states:

LED	Color	Purpose	State
1 (top)	Green	Satellite Video	ON (**after software loads**)
2	Green	Satellite Data	ON (**after software loads**)
3	Green	Local Video	Don't Care
4	Green	Not Assigned	OFF
5	Amber	Commercial Pre-Roll	Don't Care
6	Amber	Commercial On-Air	Don't Care
7	Amber	Modem in-use	OFF
8	Red	Not Assigned	OFF
9	Red	Not Assigned	OFF
10	Red	System Error	OFF
11	Green	Ring Indicator	OFF
12	Green	Carrier Detect	Off
13 (Bottom)	Red	Charging Indicator	ON or OFF

NOTE: The top two green LEDs will illuminate **only after** the software loads from the satellite. The battery charging indicator (bottom LED) will illuminate on startup and after any power failure for a limited period of time (generally for a period of only a few hours). To charge the battery from its lowest state takes approximately one day.

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Adjusting the Weather Star 4000 System

There are no user adjustments on the Weather Star 4000 itself. The system is adjusted to meet broadcast industry specifications.

Using the Weather Star 4000

The Weather Star 4000 permits the local user to prepare and schedule “crawl” messages. Communication may be accomplished by using:

- The keyboard connected to the mating DIN-type connector on the front panel. Allows on-screen editing and activation of one crawl only.
- A terminal connected to the RS-232C port on the rear panel. Allows off-screen editing, activation, and scheduling of multiple crawl messages.
- Remotely with a terminal and modem utilizing a phone line which can be plugged in to the phone connector on the front panel of the Weather Star 4000. Allows off-screen editing, activation, and scheduling of multiple crawl messages.

A video terminal connected to the RS-232C port or a remote computer used to access the built-in modem is preferred to the keyboard for interacting with the Weather Star 4000. This is because the system keyboard session displays on the outgoing video signal, while the RS-232C port or the modem session does not. The operator (RS-232C port or modem session) does not have to be concerned that what is being typed in is being seen by subscribers as it is being typed.

Before examining in detail how the various steps are carried out, it will be necessary to understand the meaning and use of:

- Password
- Configuration Data Base
- Crawl Message

Password

Access to the Weather Star 4000 through a terminal is password controlled. Users must enter a password as part of the login procedure. The initial password, configured at the factory, is “YOUPICKONE”. Entering this when requested allows the terminal to be used. The initial password should be changed as soon as possible after the system has been installed. This is particularly important if your system is connected to a phone line so as to prevent unauthorized persons from altering crawl messages or other data. The password should also be changed periodically to ensure continued system security.

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Changing the password is accomplished by changing the local password parameter in the configuration database. Modifying configuration database parameters is covered in the following subsection.

The Configuration Database

The configuration database is used to retain information that is unique to each of the Weather Star 4000 systems in the field. Users can change two pieces of data as defined below. The word in capital letters in the keyword you must enter to change the parameter (the use of these keywords is explained later). If you select configuration database, you will be prompted to enter a "keyword."

Local Affiliate Password **LPASS**

The keyword to change the password is **LPASS**. A maximum of 11 characters can be stored.

Accumulated Rainfall **RAINFALL**

The keyword to change the total rainfall which has occurred this month is **RAINFALL**. If you have the optional Weather Sensor Board and sensors attached to your unit, then you will need to enter this information when the unit is first placed in service.

What is a Crawl Message?

"Crawl Messages" are sentences of text that move right to left across the bottom of the television picture during the local forecast. These may be used to convey commercial or other messages of your choice to the viewers of The Weather Channel. The crawl messages will be displayed on the local cable system during local forecasts. Crawl messages can have up to 280 characters of text including spaces and punctuation marks. As many as ten different messages can be stored in the Weather Star 4000 and scheduled to be used on a rotating basis. Each message can be used for a selectable period of 15 minutes to 24 hours before the next message on the rotation schedule is used.

The process of creating and scheduling crawl messages is detailed in the following subsections. The general approach is as follows:

One of the ten available crawl message entry slots must be selected. You must then name the crawl and type the text of the crawl message.

The text may also be edited. The manner in which text is edited will depend on the method chosen to communicate with the Weather Star 4000: the system keyboard or a video terminal.

If crawls are to be rotated, the slot of each of the crawl messages to be displayed must be put into the Crawl Schedule, in the order in which they are to be used. This feature

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permits the selection of individual messages to be controlled by you, even though The Weather Channel host computer turns the crawl on and off at air time. In case of difficulty in scheduling local crawls, please contact The Weather Channel.

The time interval at which message selection is to rotate to the next entry in the schedule must be selected.

Finally, the crawl schedule must be activated.

IMPORTANT: If you are using the supplied system keyboard, certain of the crawl scheduling features are unavailable. This is detailed in the subsection dealing with the keyboard interface.

Using the System Keyboard (front of the Star 4000)

If the keyboard has a selector switch (located on the underside), it must be set in the "A" position **prior** to plugging it into the keyboard connector on the front panel of the Weather Star 4000. **All menus, prompts, etc. from the Weather Star 4000 are displayed in the local crawl area at the bottom of the on-air video output of the Weather Star 4000.**

NOTE: Because of the necessity to use a limited portion of the video screen for an interactive session using the keyboard, the menus are different from those utilized for a terminal session and some functions are not available. As far as possible, abbreviated commands are used; however, if a suitable video terminal or personal computer (with terminal emulation software) is available, it should be used instead of the keyboard.

Activate the main menu by pressing any key. There is no password protection feature for the keyboard session so the main menu will be displayed instantly.

Menu Selections and Use

```
     1) Crawl     2) Cnfg          3) ATF       4) Exit

                                                main menu
```


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This selection . . .	does this . . .
Crawl	Allows users to enter, revise, or edit a crawl message.
Cnfg	Allows users to edit configuration information.
ATF	(Audio Test Function) Allows users to temporarily select any arbitrary audio input for level adjustment purposes when the unit is first installed.
Exit	Stops the interactive session and removes the display from the video screen.

Crawl

From the keyboard, unlike a terminal or personal computer, only one crawl message may be selected to appear on air. You cannot create a schedule for rotating messages.

Selecting option 1 causes the following to be displayed:

```
Crawl Entry  (0, Deact, 1-10, 11 Exit)?

                                                              crawl
```

Should an entry number be selected for a pre-existing crawl, you are immediately allowed to edit the crawl text. Should, however, the crawl entry number be “empty”, i.e., no crawl text defined, the user is prompted for a crawl name. Selecting “0” from the above menu deactivates the crawl which may have been previously selected and activated. The rules for valid crawl names can be found in Revising a Crawl. The crawl names are only used for the terminal sessions and will not be seen again when using the system keyboard.

```
Crawl Name   ?

                                                              crawl
```

When the name is accepted, editing can begin. Text is entered at the extreme left-hand side “<” cursor:

```
<

                                                              crawl
```


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To save a crawl, hold down the [CTRL] key and press [C] simultaneously. When this key combination is pressed, a message displays telling you the crawl has been saved and is activated. This means that that particular crawl (and only that crawl) will be displayed on television screens during local forecasts. Hitting any key from this point will return you to the crawl entry display. Press [ENTER] to return to the main menu.

```
Crawl Saved & Active. Hit any key

                                                              crawl
```

The following commands can be used on the keyboard:

This command . . .	**does this . . .**
[CTRL] + [C]	Exit and save crawl
[CTRL] + [X]	Exit and quit without saving
[CTRL] + [I]	Enter insert mode. Characters will be inserted before the current cursor position.
[CTRL] + [O]	Enter overwrite mode. Characters will overwrite characters in the current cursor position.
[CTRL] + [H]	Delete the character preceding the cursor ([DELETE] acts the same).
[CTRL] + [U]	Move current cursor position left one window in the crawl.
[CTRL] + [D]	Move current cursor position right one window in the crawl.
[CTRL] + [L]	Move current cursor position one character left in the crawl.
[CTRL] + [R]	Move current cursor position one character right in the crawl.
[CTRL] + [E]	Removes (erases) the current crawl from the crawl directory.

Cnfg

Selecting option 2 from the main menu causes the following display:

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```
Cnfg keyword?

                                                              Cnfg
```

A valid configuration database keyword may be entered. The Configuration Database section describes the only two keywords that the user can enter. For example, if you want to change the local password, type the following in response to this prompt:

LPASS [ENTER]

If you type an invalid keyword, it will be ignored and the prompt will be redisplayed. You are now asked for the new setting:

```
Cnfg setting?  >

                                                              Cnfg
```

Enter the new password and press [ENTER]. When you are finished, press [ENTER] in response to the "Cnfg keyword?" prompt, and the Weather Star 4000 will go back to the main menu. Notice that even though no password is needed to use the keyboard, the one needed for terminal sessions can be changed from the keyboard.

NOTE: If you are using the keyboard, and the internal modem on the Weather Star 4000 gets an incoming call, the keyboard session will be aborted.

Using a Video Terminal

A video terminal (or personal computer with terminal emulation software) may be directly connected to the RS-232C port to interact with the Weather Star 4000 rather than using the system keyboard. Such a terminal (or personal computer) may also be remotely connected using your own modem at the terminal location and the built-in 300-Baud modem of the Weather Star. This is preferred because unlike the system keyboard, the terminal session is not displayed on the outgoing video signal. This means that the operator does not have to wait until late at night to work with the system. Another advantage is that screen editing is provided for several popular terminal types. Terminals supported are VT-100, TANDY 102 (using the built-in TELCOM program), ADM-3A or any other terminal or computer that emulates one of these. Most popular communications programs for personal computers provide VT-100 emulation.

IMPORTANT: The built-in modem in the Weather Star 4000 will answer the telephone with an "originate" tone. It is necessary that users configure the modem on their personal computers to call out in the "Answer"

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mode (for most communication software, placing the letter “r” after the telephone number to be called will accomplish this).

When using a cable connected as a “null-modem” editing for terminal types VT-100, TANDY RS-102 (emulating a VT-52), and ADM-3A is provided. The editing functions supported are moving the cursor up, down, left, or right on the screen, overwriting a character, and inserting or deleting a character. The screen region used by the editor is restricted to 7 lines with 40 characters per line.

NOTE: To make you own “null-modem” cable, use the following connections:

Signal	WS4000 Pin	Direction	Data Term Pin
GND (Frame Ground)	1		1
TXD (Transmit Data)	2	OUT	3
RXD (Receive Data)	3	IN	2
RTS (Request to Send)	4	OUT	5
CTS (Clear to Send)	5	IN	4
DSR (Data Set Ready)	6	IN	20
SG (Signal Ground)	7		7
DTR (Data Term Rdy)	20	OUT	6

Login/Logout Procedure

To commence the terminal session, it is first necessary to gain authorized access. To login to the system, press the [ENTER] key twice and wait for the system to respond. A screen display will show the software version, the serial number of the particular unit and a request for a password. When this is seen, the system password should be typed in followed by the [ENTER] key. The initial (default) password is:

```
YOUPICKONE
```

The question “Interactive or Data Receive Mode (I/D)?” will be displayed.

NOTE: In all cases, “I” should be selected.

Selecting “I” will result in the request:

```
1)  VT100,  2)  RS102,  3)  ADM3A, which?
```


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These refer to the various terminal types recognized by the system. Select the correct choice for your equipment. The log-in process is now complete and the main menu will be displayed:

```
MAIN MENU

1)    revise crawl
2)    schedule crawl
3)    edit configuration
4)    diagnostic testing
5)    data interrogation

Enter option (0 to exit) >
```

menu 1.0

From the main menu, the options shown may be selected, with the exception of options 4 and 5. Diagnostic testing is an option provided solely for The Weather Channel use. Should these options be selected, the system will display a warning message:

```
RESTRICTED ACCESS

Attempt to modify
      protected field!

Press any key to continue . . .
```

warning

To finish the terminal session, select 0 from the main menu. The screen will clear and a new login screen will be displayed. The operation of each of the menu choices that can be selected will now be explained.

IMPORTANT: You must log out by selecting 0 from the main menu. If you log out any other way, the next time you attempt to log in, you will be denied access to the system.

Menu Selections and Use

Revise Crawl

This option permits you to create, edit, or delete crawls as well as view the crawl directory (a listing of defined crawls). If you select option 1 (Revise Crawl) from the main menu, the following menu will display:

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```
REVISE CRAWL

1)    edit crawl
2)    delete crawl
3)    crawl directory

Enter option (0 to exit)  >
```

menu 1.1

Choosing option 1 from this menu displays the crawl directory:

```
EDIT CRAWL

      1     Empty       6     Empty
      2     Empty       7     Empty
      3     Empty       8     Empty
      4     Empty       9     Empty
      5     Empty       A     Empty

Enter crawl to edit (0 to exit)  >
```

menu 1.1.1

At this point, you can choose the crawl entry to edit. If the directory is empty, picking any entry number allows you to create a crawl. Selecting option 1 from the above menu will cause the following screen to display:

```
      EDIT  Empty

Enter name of new crawl entry:

>
```

menu 1.1.1.2

You can now enter a name for the new crawl. While you can type long names on the screen, the name stored by the Weather Star 4000 will be the first eight characters only. You can use numbers, but names containing blanks or other characters such as ?, @, #, etc. will be rejected. Upper or lowercase characters are accepted, as are combinations. Thus, “SAMPLE1” and “Sample1” are correct but “SAMPLE 1” is not. When you finish typing the name, press [ENTER].

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When the system accepts a new crawl name, the screen display changes and allows you to edit (or in this case, enter) or save the text of the new crawl:

```
EDIT  SAMPLE1     CRAWL

      1)    edit text
      2)    save text
      3)    discard all editing

Enter option  >
```

menu 1.1.1.1

Choosing option 1 (Edit Text) causes the screen display to change to the following:

```
EDIT  TEXT SAMPLE1 CRAWL Ctrl-A = Help

<
```

menu 1.1.1.1.1

As you type characters into the terminal, the < symbol, which marks the end of the message text, moves to the right and wraps to the next line after forty characters have been typed in. An online help screen is available by typing [CTRL] + [A]. When you finish typing text, type [CTRL] + [X] to exit to the previous menu (menu 1.1.1.1). At this point, choosing option 2 saves the newly entered crawl message. When you choose this option, the screen reports that the crawl has been saved:

```
SAVE CRAWL

Crawl SAMPLE1 has been saved.

Press any key to continue . . .
```

menu 1.1.1.1.2

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Pressing any key to continue as instructed returns you to menu 1.1.1.1. Successively entering 0 at the prompt returns you to the next higher menu.

You can easily delete crawls from the system by choosing option 2 from menu 1.1. When a crawl has been deleted, the revised crawl directory will be displayed.

To view the contents of the crawl directory, choose option 3 from menu 1.1. The screen display shows the crawl titles against the entry number originally assigned by the user.

NOTE: To activate a single crawl for display, refer to Selecting a Single Crawl. To create a multiple crawl schedule, continue with the next section (Schedule Crawl).

```
CRAWL DIRECTORY

      1     SAMPLE1     6      Empty
      2     Empty       7      SAMPLE2
      3     Empty       8      Empty
      4     Empty       9      Empty
      5     Empty       A      Empty

Press any key to continue . . .
```

menu 1.1.3

Schedule Crawl

If you choose option 2 (Schedule Crawl) from the main menu, the screen clears and displays the following menu:

```
SCHEDULE CRAWL

      1)    show schedule
      2)    revise schedule
      3)    activate schedule
      4)    deactivate schedule
      5)    select crawl for display

Enter option (0 to exit)  >
```

menu 1.2

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Selecting option 1 displays the current crawl schedule. The crawl schedule is different from the crawl directory: the directory lists the crawls, the schedule shows their on-air order. It is possible to have the same crawl listed several times in the schedule in order to cause it to be used more often than others are.

Revising the Schedule

It is useful to examine the detail involved in revising the crawl schedule. First, review the crawl schedule by selecting option 1.

```
CRAWL SCHEDULE [active] [interval = __ )]

      1     Empty      6     Empty
      2     Empty      7     Empty
      3     Empty      8     Empty
      4     Empty      9     Empty
      5     Empty      A     Empty

Current crawl [_]

Press any key to continue . . .
```

menu 1.2.1

Return to menu 1.2 by pressing any key. Now select option 2 to revise the schedule. The display changes to show the revision options available:

```
REVISE SCHEDULE

      1)    add entry
      2)    delete entry
      3)    insert entry

Enter option (0 to exit)  >
```

menu 1.2.2

You can place entries in the schedule by selecting either option 1 or 3. The difference between the two options lies in the way that crawls are placed in the schedule slots. Option 1 (add entry) allows you to place crawls after the last entry currently in the schedule. Option 3 (insert entry) allows you to insert a crawl ahead of any particular entry currently in the schedule.

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Selecting option 1 displays the crawl directory so that you can pick the entry number of the crawl message that you want to add

```
CRAWL DIRECTORY

      1     SAMPLE1    6     Empty
      2     Empty      7     SAMPLE2
      3     Empty      8     Empty
      4     Empty      9     Empty
      5     Empty      A     Empty

Select crawl to add (0 to exit)

>
```

menu 1.2.2.1

When a crawl entry number has been selected, the same menu will be displayed again so that an additional crawl message may be chosen. In this way, up to ten entries may be placed in the schedule. Duplicate entries are permitted and will cause the duplicated entry to air more often than nonduplicated entries.

```
CRAWL SCHEDULE [active] [interval = _]

      1     SAMPLE1    6     Empty
      2     SAMPLE2    7     Empty
      3     Empty      8     Empty
      4     Empty      9     Empty
      5     Empty      A     Empty

Current crawl [_]

Press any key to continue . . .
```

menu 1.2.1

The Crawl Schedule menu also indicates whether or not a crawl schedule is active, the interval that has been selected, and the currently active crawl, i.e., the crawl that is actually running on air. Pressing [0] at the > prompt returns you to menu 1.2.2.

Select crawl number 1 (SAMPLE1) and crawl number 7 (SAMPLE2). The crawl schedule shows the two crawls occupying the first two unoccupied slots in the schedule.

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At this time, the effect of inserting crawl entries (instead of adding crawl entries) will be examined. Selecting option 3 from menu 1.2.2 produces the following screen display (remember that SAMPLE1 and SAMPLE2 have already been placed in the first two schedule slots).

```
INSERT SCHEDULE

      1     SAMPLE1    6     Empty
      2     SAMPLE2    7     Empty
      3     Empty      8     Empty
      4     Empty      9     Empty
      5     Empty      A     Empty

Insert before (0 to exit)  >
```

menu 1.2.2.3

If you want to insert the SAMPLE1 crawl in slot 2 of the crawl schedule, select 2 from this menu. The system then asks you to identify which crawl entry you want to insert by displaying the crawl directory again.

```
CRAWL DIRECTORY

      1     SAMPLE1    6     Empty
      2     Empty      7     SAMPLE2
      3     Empty      8     Empty
      4     Empty      9     Empty
      5     Empty      A     Empty

Select crawl to insert (0 to exit)  >
```

menu 1.2.2.3.1

Select crawl number 1. The revised schedule will now display with the SAMPLE1 crawl inserted in schedule slot 2. The crawl originally in schedule slot 2 has been moved down one slot to slot 3. Similarly, a crawl in slot 3 would now occupy slot 4 and so on. A crawl previously located in slot 1 would be pushed off the schedule.

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```
INSERT SCHEDULE

      1     SAMPLE1    6     Empty
      2     SAMPLE1    7     Empty
      3     SAMPLE2    8     Empty
      4     Empty      9     Empty
      5     Empty      A     Empty

Insert before (0 to exit)  >
```

menu 1.2.2.3

The process of inserting crawls can be repeated until pressing 0. This keystroke returns you to menu 1.2.2.

Crawls can be deleted from the schedule by selecting option 2 from menu 1.2.2. The following menu is displayed:

```
DELETE SCHEDULE

      1     SAMPLE1    6     Empty
      2     SAMPLE1    7     Empty
      3     SAMPLE2    8     Empty
      4     Empty      9     Empty
      5     Empty      A     Empty

Select crawl to delete (0 to exit)  >
```

menu 1.2.2.2

Select option 2 and observe the new screen display. Slot 2 has been filled with what had been in slot 3. Slot 3 contains what had been in slot 4, and so on. Deleting a schedule entry is therefore the inverse of inserting a schedule entry.

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```
DELETE SCHEDULE

      1     SAMPLE1    6     Empty
      2     SAMPLE2    7     Empty
      3     Empty      8     Empty
      4     Empty      9     Empty
      5     Empty      A     Empty

Select crawl to delete (0 to exit)  >
```

menu 1.2.2.2

You can repeat this process until you press [0] to take you back to menu 1.2.2.

Activating/Deactivating a Schedule

Now that crawls have been created and placed in a crawl schedule, there is a need to activate the schedule so that when The Weather Channel host computer sends a command to display a crawl, the crawls in the schedule are displayed on viewers' television screens. The process of activating the schedule means to define a time window during which one of the crawls listed in the crawl schedule will be displayed. The particular crawl to be displayed with be that which would have been displayed had the schedule been activated at midnight. At the end of the defined period, the next crawl in the schedule will become active for the same period.

The following examples assume the schedule is full, i.e., 10 slots are occupied.

Example 1:

Suppose a one-hour interval has been selected at 5:50 a.m. At 6:00 a.m., a crawl will be displayed. This will be crawl #6.

Example 2:

Suppose a 15-minute interval has been selected at 6:10 a.m. At 6:15 a.m., the crawl to be displayed will be crawl #6 (26 15-minute periods since midnight).

To see how the process of activating a schedule works, refer to menu 1.2.

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```
SCHEDULE CRAWL

      1)    show schedule
      2)    revise schedule
      3)    activate schedule
      4)    deactivate schedule
      5)    select crawl for display

Enter option (0 to exit)  >
```

menu 1.2

Select option 3. The screen display changes to show the following menu:

```
ACTIVATE SCHEDULE

      1)    15 min     6)    4 hours
      2)    30 min     7)    6 hours
      3)    1 hour     8)    8 hours
      4)    2 hours    9)    12 hours
      5)    3 hours    A)    24 hours

Enter option (0 to exit)  >
```

menu 1.2.3

Select the interval at which you want the system to advance to the next entry in the schedule. If it is desired to have the crawl change every hour, select option 3. The schedule is now activated. The screen display returns to menu 1.2. The message rotation period can be changed by simply repeating the Activate Schedule function.

To deactivate the schedule, select option 4 from menu 1.2. The screen display reports a status message:

```
DEACTIVATE SCHEDULE

Schedule has been deactivated

Press any key to continue . . .
```

menu 1.2.4

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This leaves the currently active crawl message selected. There will be no further message rotation. Press any key to return to menu 1.2.

Selecting a Single Crawl

You can select a single crawl for display. This selection overrides an activated schedule until the next time window boundary. Thus, if you select a single crawl at 3:05 p.m. and the schedule has been activated with a 1-hour time window, the single crawl would be the current crawl (displayable upon command) until 4:00 p.m. At that time, the schedule would resume.

Select option 5 from menu 1.2. The screen displays the crawl directory

```
SELECT CRAWL FOR DISPLAY (0 FOR EMPTY)

      1     SAMPLE1    6     Empty
      2     Empty      7     SAMPLE2
      3     Empty      8     Empty
      4     Empty      9     Empty
      5     Empty      A     Empty

      CR to exit

Select crawl for display  >
```

menu 1.2.2.3.1

Select 1 for SAMPLE1. The screen returns to menu 1.2. This single crawl (crawl number 1) has now been selected. To deselect the single crawl, press [0] from the menu.

Edit Configuration

If you choose option 3 (Edit Configuration) from the main menu, the following menu displays:

```
EDIT CONFIGURATION SETTINGS

Enter Configuration keyword

Press <return> for main menu
```

menu 1.3

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At this point, you can enter a configuration database keyword (see The Configuration Database above for a list of valid keywords). For example, if you want to change the local password, type LPASS in response to the **>** prompt (remember to use capital letters) and press <Enter>. The screen display prompts you for the revised keyword value:

```
EDIT CONFIGURATION SETTINGS

press <return> for no change

Enter new configuration settings

PASSWORD: YOUPICKONE

>
```

menu 1.3.1

If you enter an invalid keyword or value, it will be ignored and you will be prompted to enter the keyword or the value again. If you just [ENTER] when prompted for a value, the previous value will not be changed. When you are finished editing parameters, just press the [ENTER] key in response to the “Enter configuration keyword” and the Weather Star 4000 will go back to the main menu.

Using a Computer for Remote Access

The Weather Star 4000 contains a 300-baud modem that can be connected to the local phone line. This permits remote access from a video terminal and modem combination. To commence a terminal session via the phone line, connect a phone line to the RJ-11 connector on the front panel of the Weather Star 4000. From the remove location, the number corresponding to that phone line is dialed. When connected, the remote video terminal operates identically to a terminal directly connected to the RS-232C port and described in the preceding paragraphs.

The build-in modem in the Weather Star 4000 will answer the telephone with an “originate” tone. It is necessary for users to configure their personal computers to call out in the “answer” mode (for most communication software packages, placing the letter “r” after the telephone number to be called will accomplish this).

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Troubleshooting

Common Problems and Solutions

Identifying and repairing minor defects experienced with the Weather Star 4000 may be accomplished by following the instructions associated with each symptom.

NOTE: In case of unit failure, turning off the AC power will cause the Weather Star 4000 primary video and audio inputs to be by-passed directly to the output connectors

Trouble: Distorted Video Output

Possible Cause	Suggested Action
Noisy or low video output signal from satellite receiver	Verify receiver or descrambler operation by substituting a known good unit.
Defective satellite receiver or descrambler unit.	Same as above.
Defective modulator	Verify by substituting a known good modulator.
Defective video cables	Change video cables
Improper satellite receiver operation	Check all satellite receiving equipment including conditions of antenna, its polarization and alignment.
Weather Star 4000 is defective	Call The Weather Channel.

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Trouble: No Local or Graphics Video Output

Possible Cause	Suggested Action
The Weather Star 4000 is not receiving 115 volts AC	Check that power cord is connected to both the rear panel and power outlet. Ensure 115V is available at power outlet.
The rear panel switch is in “Off” position	Turn switch to “On” position and observe for normal power-up indications.
The rear panel 2-amp fuse is open	Replace with identical type fuse (2 amp SB). If fuse blows again, call The Weather Channel.
Software has not loaded	Check LEDs. Has enough time passed for software to load?
Weather Star 4000 is defective	Call The Weather Channel.

Trouble: Improper Audio

Possible Cause	Suggested Action
Improper audio on The Weather Channel: hearing audio for a different place or program	Check that Language pin is properly connected to VC II or IRD and confirm that audio input is connected to LEFT OUTPUT of the VC II IRD.

Trouble: No Video Output or Constant Local Forecast

Possible Cause	Suggested Action
VC II not authorized	Call TWC for trip
Poor or defective satellite feed or defective receiver or descrambler	Verify by substituting known good units.
Weather Star 4000 is defective	Call The Weather Channel.

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Trouble: Audio Signal Distorted

Possible Cause	Suggested Action
Excessive audio signal level at the Weather Star 4000 input terminals	Adjust the audio attenuators on the audio descrambler or the receiver to provide 0.8 volts RMS, 2.2 Volts peak to peak into 600-ohm load, 0 DBm.
Poor carrier to noise on TWC feed.	Realign dish. Check polarity and LNA and/or LNB and receiver.
Defective descrambler or satellite receiver	Replace with a known good descrambler or receiver.
Defective modulator	Replace with a known good modulator
Weather Star 4000 is defective	Call The Weather Channel

Trouble: No Phone Input or Output

Possible Cause	Suggested Action
Cable to modular telephone jack is defective	Check the cable for opens or shorts using a multimeter. Replace with known good cable if necessary.
Telephone line defective	Check telephone line using standard phone. Report unserviceability to your local phone company.
Weather Star 4000 is defective	Call The Weather Channel.

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Trouble: No Satellite Audio

Possible Cause	Suggested Action
Audio cables improperly connected	Check cable connections.
No audio from satellite receiver	Verify receiver operation by substituting a known good receiver.
No audio from descrambler	Check to see if descrambler is connected properly, authorized and operating correctly.
No audio at the Weather Star 4000 input terminals	Check for audio twisted pair for shorts or opens and polarity. Replace or adjust if necessary.
No audio at the modulator input	Check the audio cable from the Weather Star 4000 to the modulator for shorts or opens and for polarity. Replace if necessary.
Weather Star 4000 is defective	Call The Weather Channel.

Trouble: No Keyboard Response

Possible Cause	Suggested Action
Keyboard switch on “X” instead of “A”	Check keyboard switch on bottom of keyboard.
Defective cable	Visually inspect cable for obvious damage to wires on connector. Replace keyboard if required.
Terminal is active	Log off terminal.
Defective keyboard	Call The Weather Channel
Software has not been loaded	Check LEDs. Has enough time passed for software to load?
Weather Star 4000 is defective	Call The Weather Channel.

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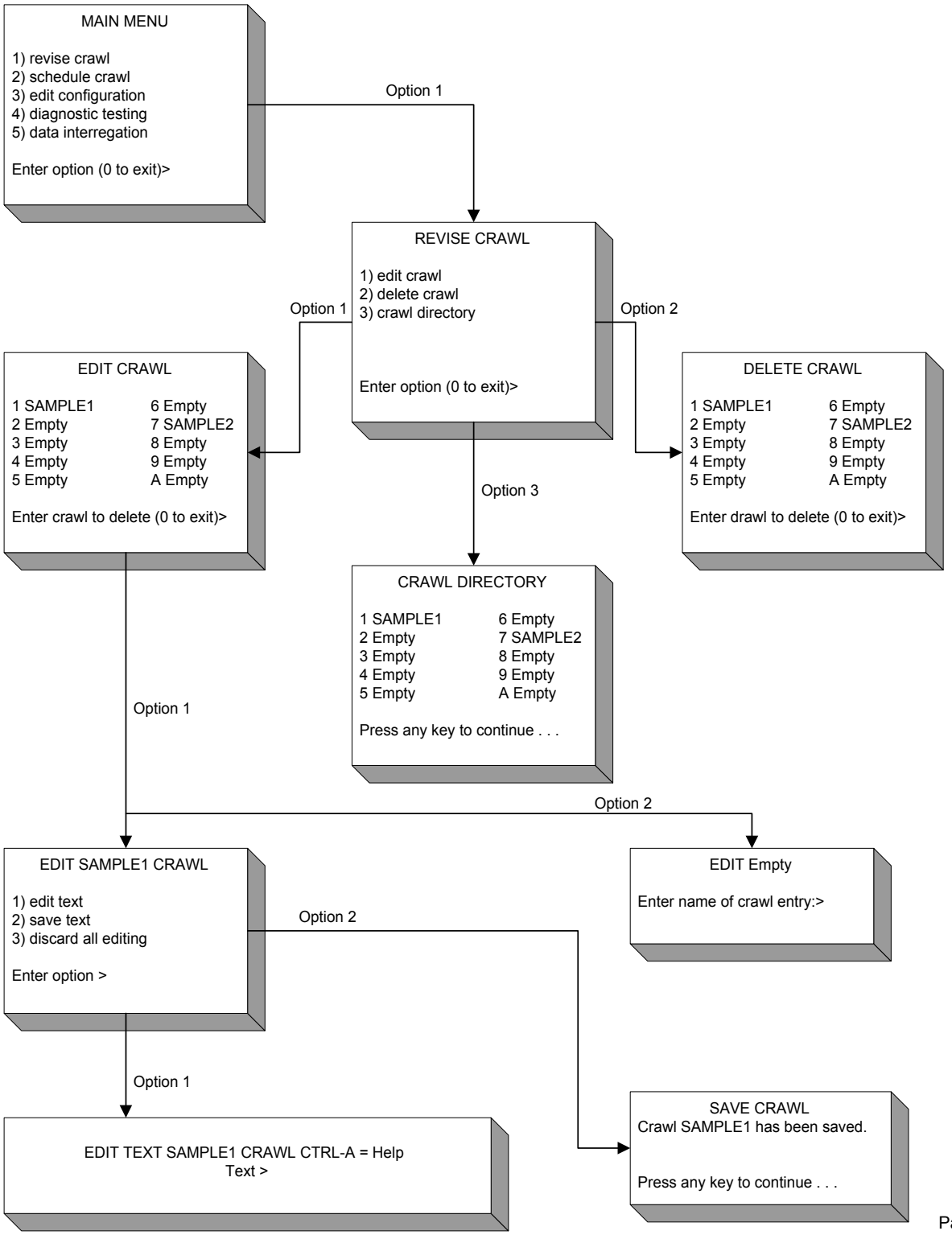

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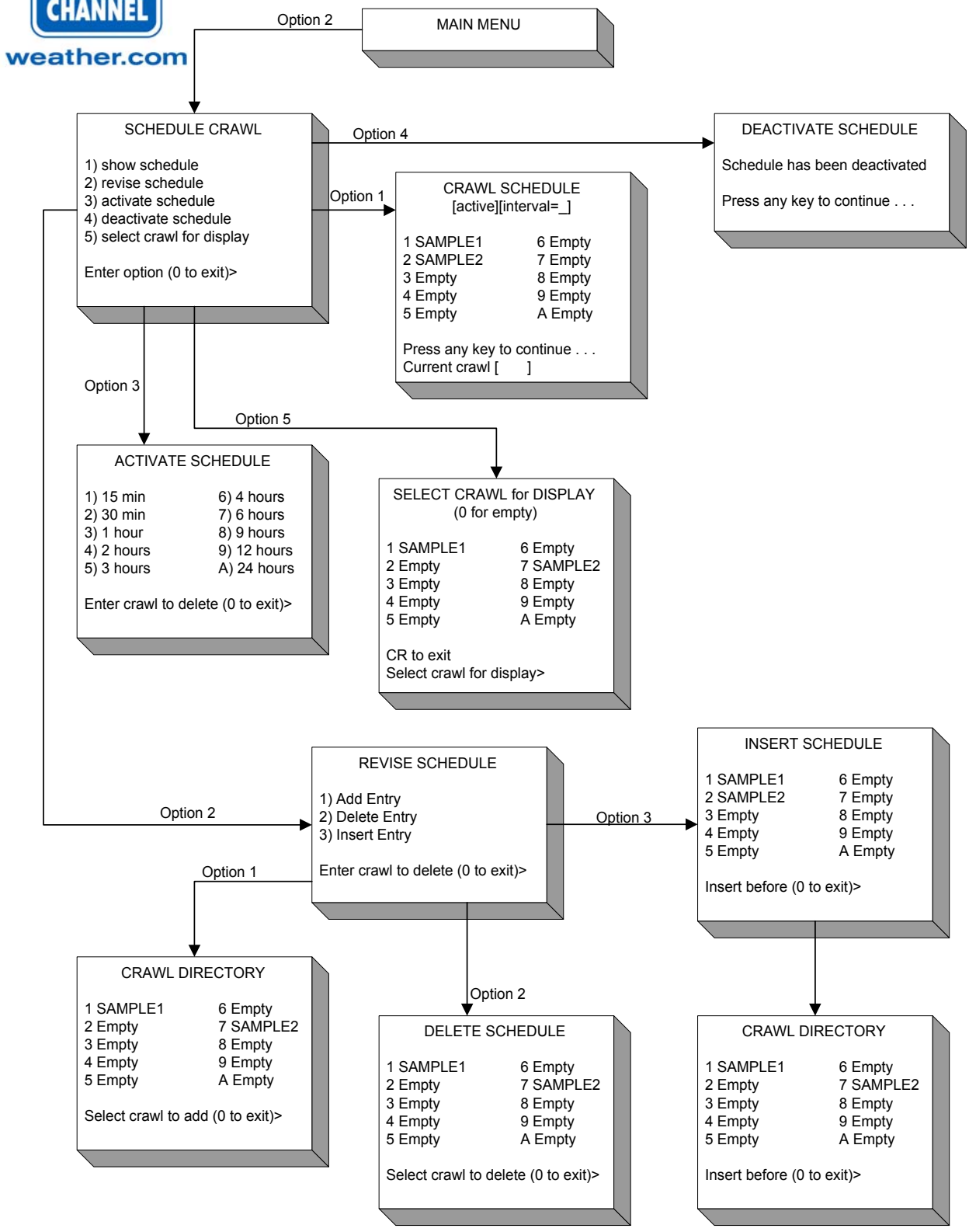

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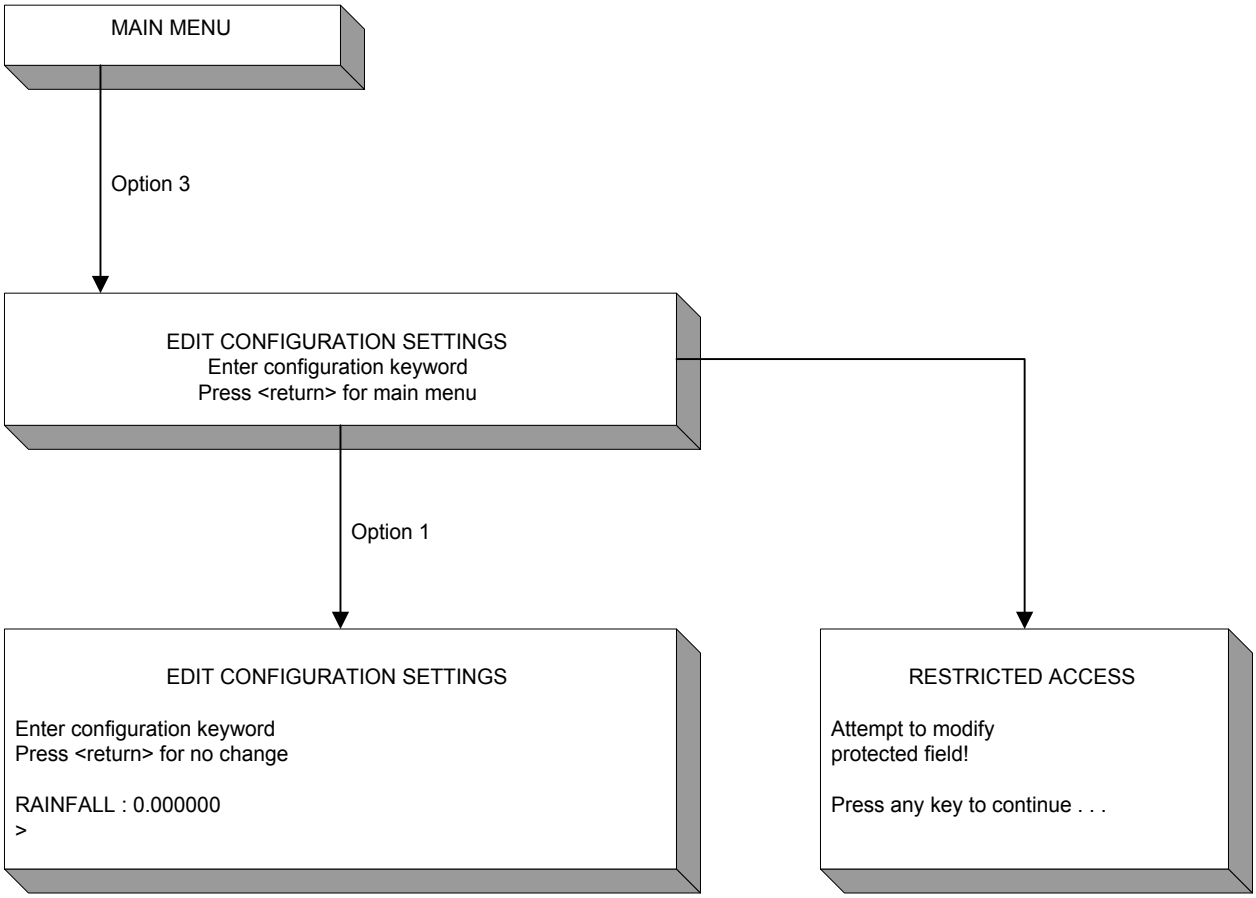

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