

STATE of ALASKA

Exhibit # 1

April 23, 1996

540-7002/560-7004/570-7008

GOES Transmitter Technical Specifications

Frequency

Crystal Controlled

401.701 - 402.0985 MHz
(NESDIS CH 1-266)

Frequency Stability

Temperature

$\pm 5 \times 10^{-7}$ (-40°C to 50°C)

Long Term

$\pm 1 \times 10^{-6}$ /Year

Phase Noise

3° RMS (100 Hz BW)

Supply Sensitivity

1×10^{-8} (11-14 volts)

Modulation

Medium Term

B1 Phase $\pm 60^\circ$ $\pm 6^\circ$
3° RMS (100 Hz BW)

RF Power Output

Spurious Output

+40 dBm (10 watts ± 1 dB)

Harmonic Output

-60 dBc

-60 dBc

Timing Sequence

Transmission Interval

1 min to 18 hrs 50 min 1 sec interval

Synoptic Delay Interval

1 min to 18 hrs 50 min 1 sec interval

Timing Accuracy

± 30 sec/year

Data Storage

Scan Readings

Up to 650 Samples

Data Format

Unmodulated Carrier

5 seconds (self timed)

Bit Synch (101010...)

2.5 seconds (self timed)

MLS Code

15 Bits

BCH Code

31 Bits

(User Programmable)

Data ASCII Character Set

8 Bits/Character Odd Parity

EOT

1 EOT (00100000)

DC Power Input

Voltage

11-14 VDC (Internal Software Inhibits
Transmission 10.75 volts)

Current

Quiescent

8 mA @ 12.5 volts

Peak 540A-1

3.5 A @ 12.5 volts

Environmental

Operating

-20°C to +50°C (Type Certified
to 40°C)

Storage

-65°C to +70°C

Humidity

100%

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Exhibit # 2

April 23, 1996

Item 10

In order to better forecast periods of potential high fire activity, the State of Alaska, Division of Forestry purchased three Handar 504 A-1 Multiple Access Data Acquisition Systems. These systems, also known as Remote Automatic Weather Stations (RAWS), will be placed at sites in Alaska where weather observations are unavailable due to their remote location. These sites were identified with help from the National Weather Service as high priority for obtaining weather observations.

Weather observations will be taken hourly and transmitted to the GOES satellite. These observations will be sent to the NESDIS receive site and then to the Central Data Distribution Facility (CDDF) in Camp Spring, Maryland. The Division of Forestry and the National Weather Service will access the observations through the Administrative and Forest Fire Information Retrieval and Management System (AFFIRMS). The observations will be used in developing weather forecasts and determining potential high fire activity, providing information vital to the Division of Forestry's fire suppression efforts of wildland fires.

Alaska's fire season is considered to be from May thru September. The RAWS stations will be operational several weeks prior to the start of fire season, generally in early April. They will remain in operation throughout the summer until late August or September, depending on the fire season. The stations will then be removed and placed in storage during the winter.

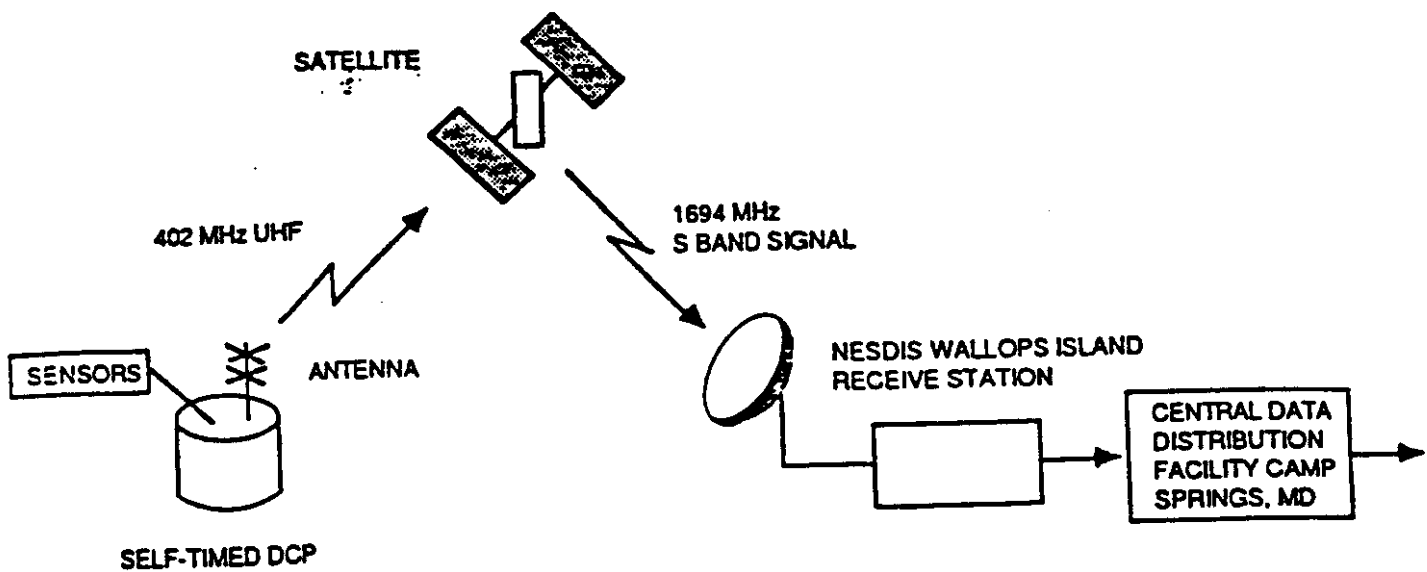


Figure 1.2.1.1 SMS/GOES SELF-TIMED DATA COLLECTION SYSTEM

At Wallops Island, the signal is demodulated, data recovered, and sent to the Central Data Distribution Facility (CCDF) in Camp Springs, Maryland. There, the data is stored for dissemination to the individual users.

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Exhibit # 2

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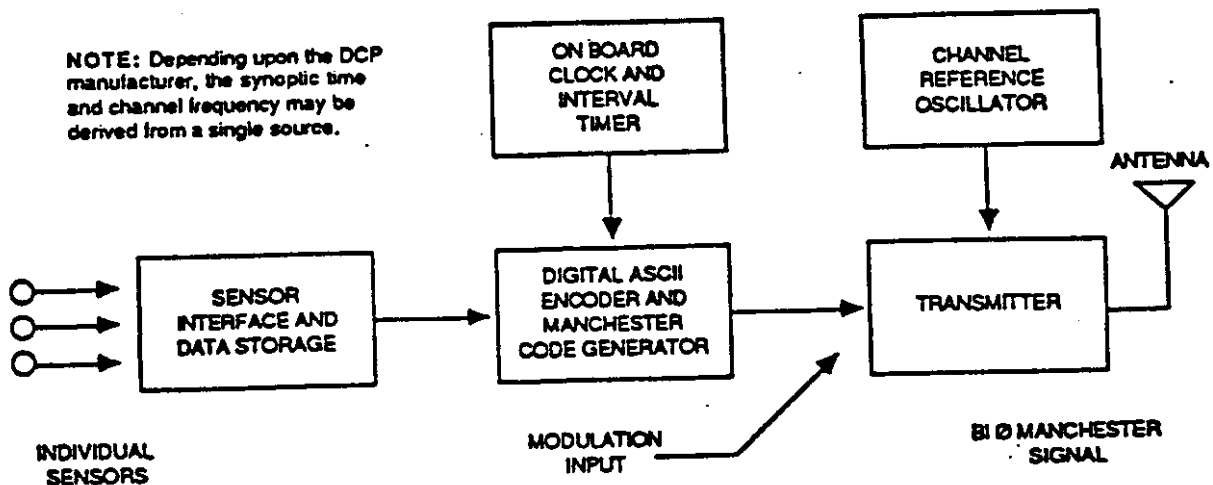


Figure 1.2.1.2 SELF-TIMED DATA COLLECTION PLATFORM

The NESDIS Wallops Island Data Collection Facility

The SMS/GOES down link receive station is operated by the National Environmental Satellite, Data, and Information Service (NESDIS) and is located at Wallops Island, Virginia. A block diagram of the station is shown in Figure 1.2.1.3.

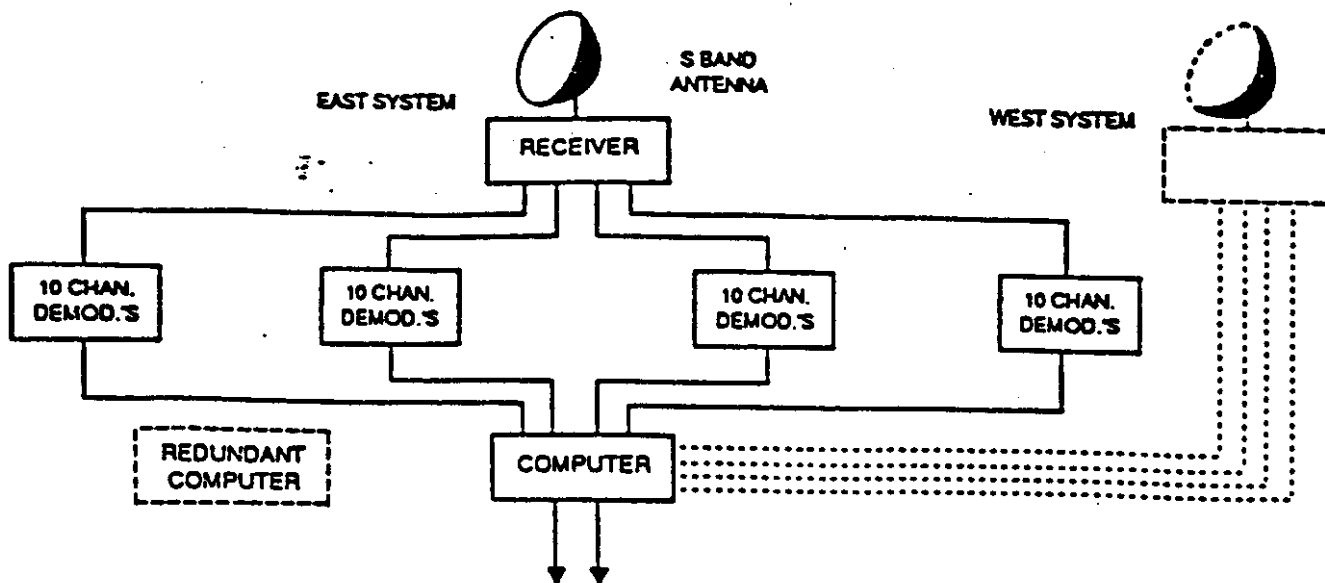


Figure 1.2.1.3 WALLOPS ISLAND RECEIVE FACILITY

Platform data signals are received and routed to the respective channel demodulators, and the recovered data sent to the computer. The computer keeps track of the channel and time diversity of the system. By keeping track of the platform ID codes and current time slots, the computers are always aware of whose data is being received at any time and can place it in the correct user data file. The data is buffered in the Wallops computer and sent, in real time, to another NESDIS computer in Camp Springs, Maryland, as shown in Figure 1.2.1.4. Here, the data is stored for at least 24 hours and distributed to users over telephone lines. Alternatively, the user can access his individual file by dialing into the system, recovering the DCP sensor data stored since the last file access.

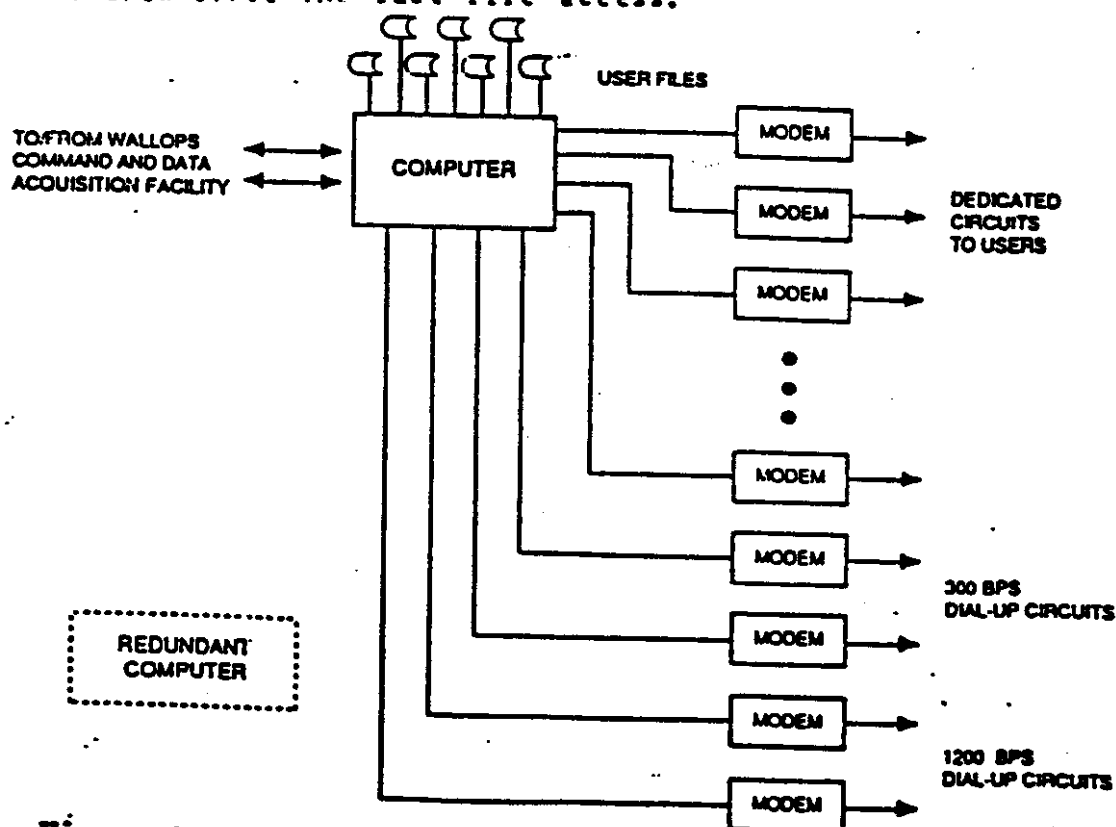


Figure 1.2.1.4 NESDIS Central Data Distribution Facility, Camp Springs, Maryland