DATA COLLECTION WITH THE ACTS PROPAGATION TERMINAL

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ACTS MINI-WORKSHOP
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VIRGINIA TECH
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data2.drw
05/17/93

DACS SYSTEM OVERVIEW

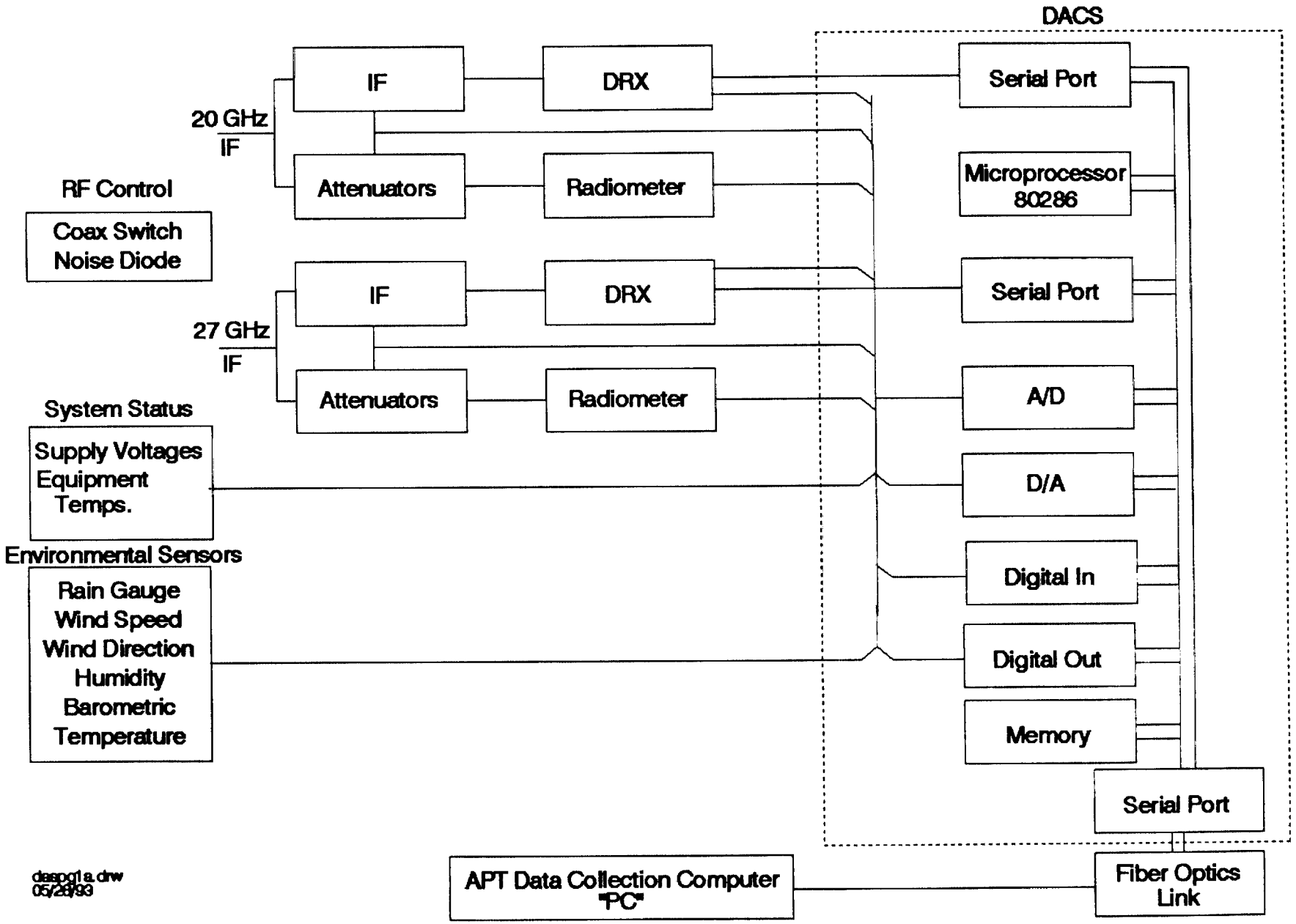
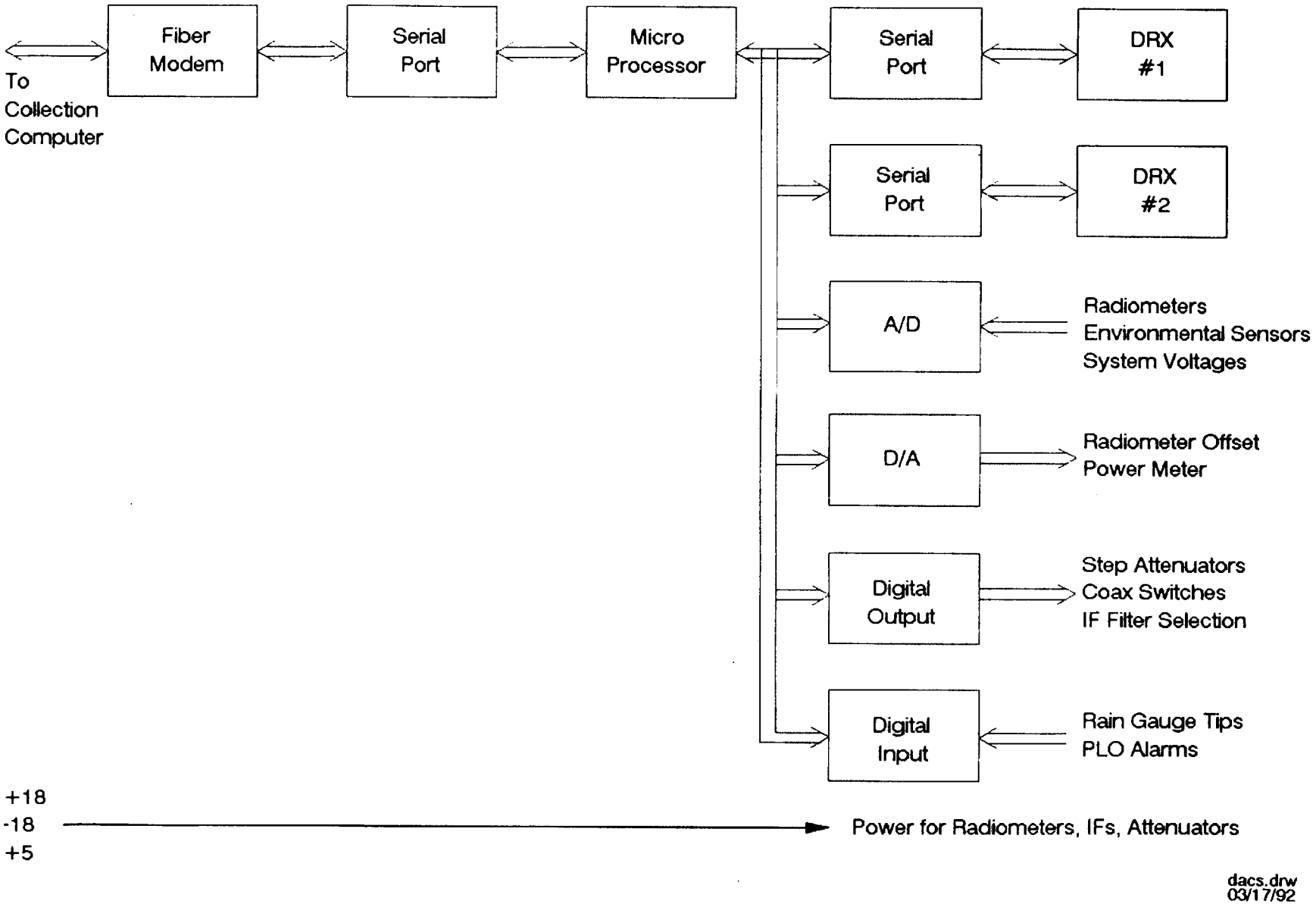


Figure 13.2-1. Block diagram of DACS hardware.

DACS BOARD



dacs.drw
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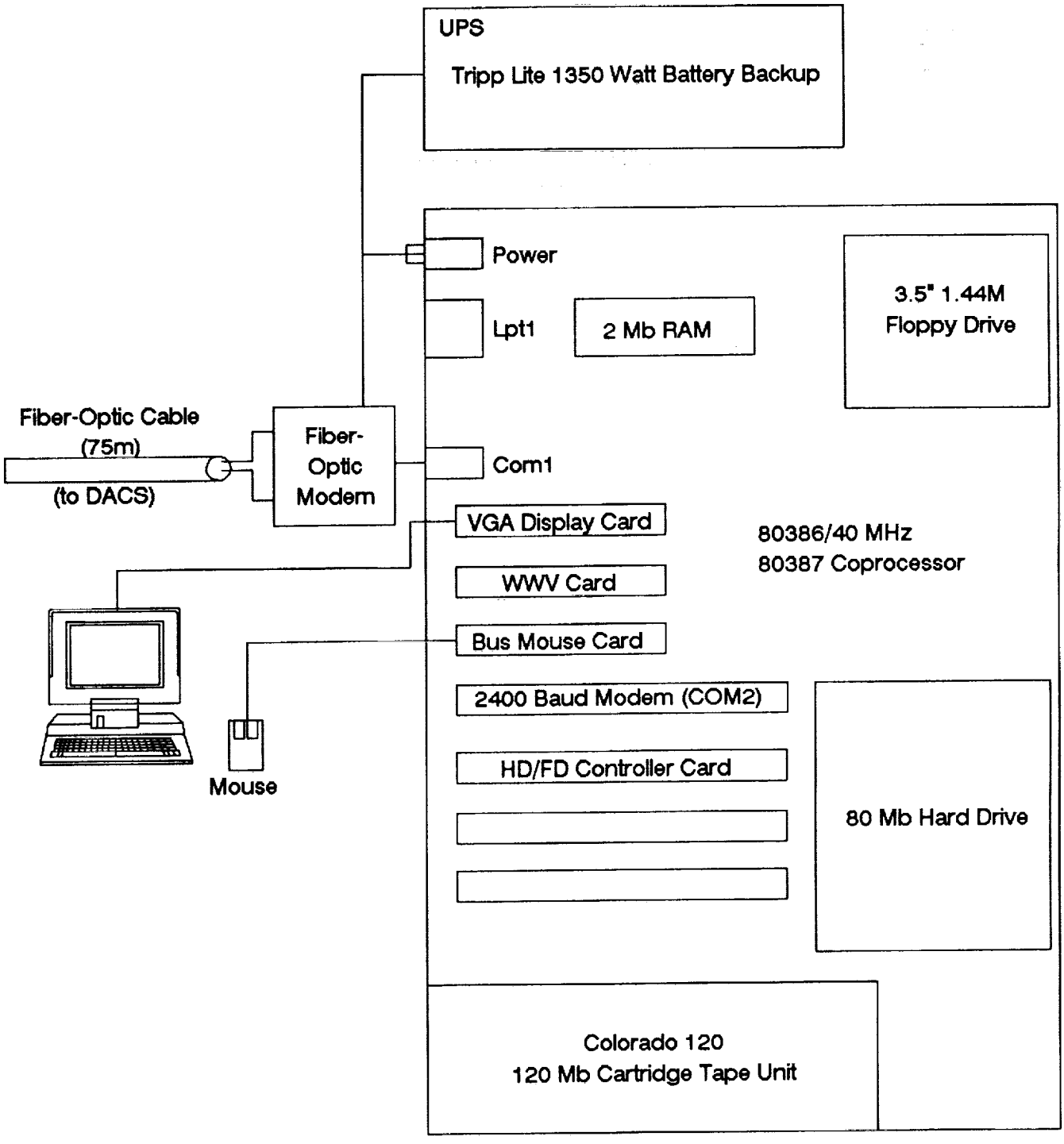
APT Data Collection Computer



collect.drw
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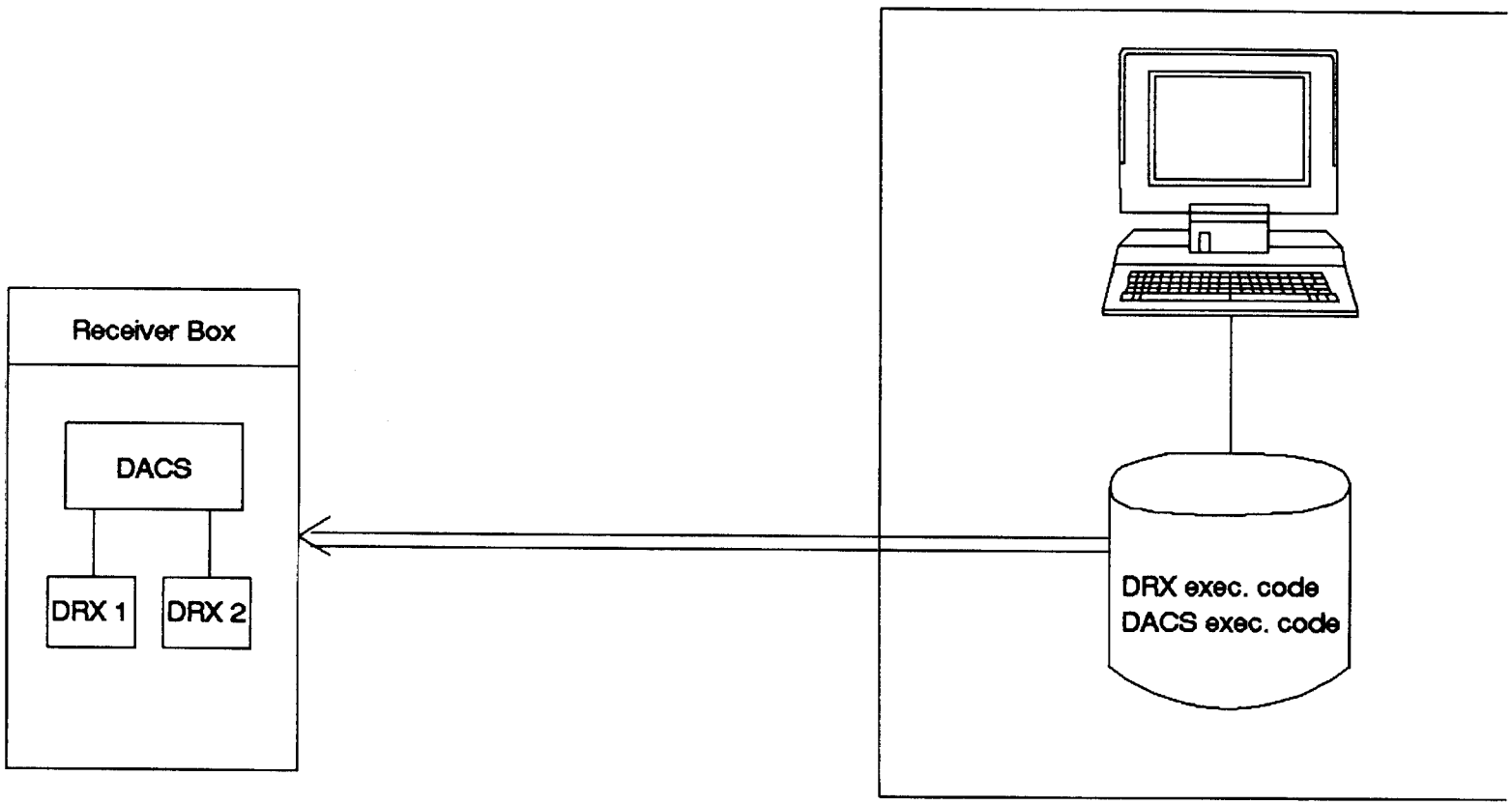
Figure 13.2-2. Configuration of the data collection computer hardware.

APT Software Downloading



Digital Receiver and DACS executable code can be (re)loaded from the collection computer hard disk either under operator command or automatically at power up/reset.

apts.drw
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Figure 13.4-1. Block diagram of the downloading process.

Table 7.2-1

Configuration of Terminal Strip for The Receiver Enclosure

Tipping bucket rain gauge sensor	1	□	Green terminal case ground
Outside air temperature sensor	2	14	Tipping bucket rain gauge GND
Wind direction sensor	3	15	Outside air temperature GND
Wind speed sensor	4	16	Wind direction GND
Barometric pressure sensor	5	17	Wind speed GND
Relative humidity sensor	6	18	Barometric Pressure GND
Capacitive rain gauge sensor	7	19	Relative humidity GND
Optical rain gauge sensor	8	20	Capacitive rain gauge GND
Test align output	9	21	Optical rain gauge GND
Wind direction, +15 V	10	22	GND
Barometric pressure, +15 V	11	23	GND
Relative humidity, +15 V	12	24	GND
Capacitive rain gauge, +15 V Optical rain gauge, +15 V	13	25	GND

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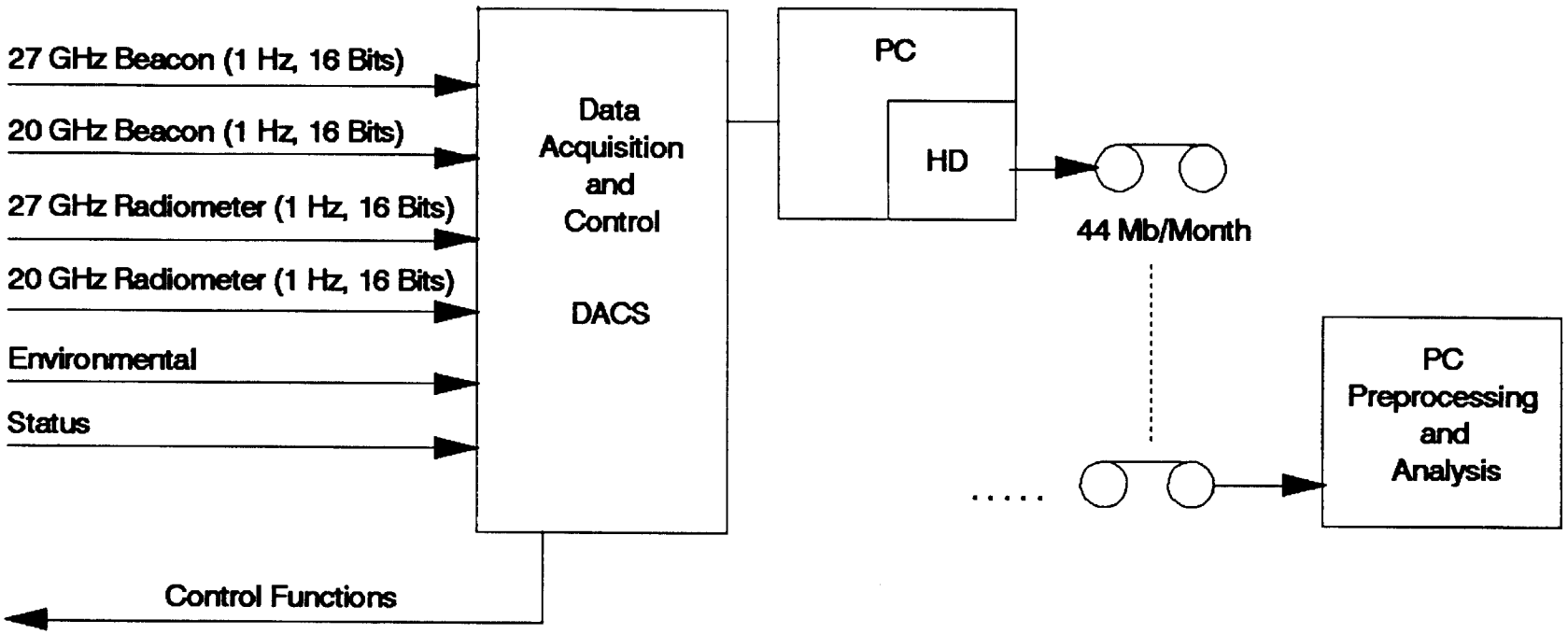
DATA STORAGE FOR APT



Data file (one second data rate):

Field (# of Bytes)

Time multiplexed fields include:
Environment Monitors
ID
Calib. on/off

| Time (4) | 20 GHz Beacon (2) | 27 GHz Beacon (2) | 20 GHz Rad (2) | 27 GHz Rad (2) | Status 1 (2) | Status 2 (2) |

Beacon data are signal power in 0.01 dB;

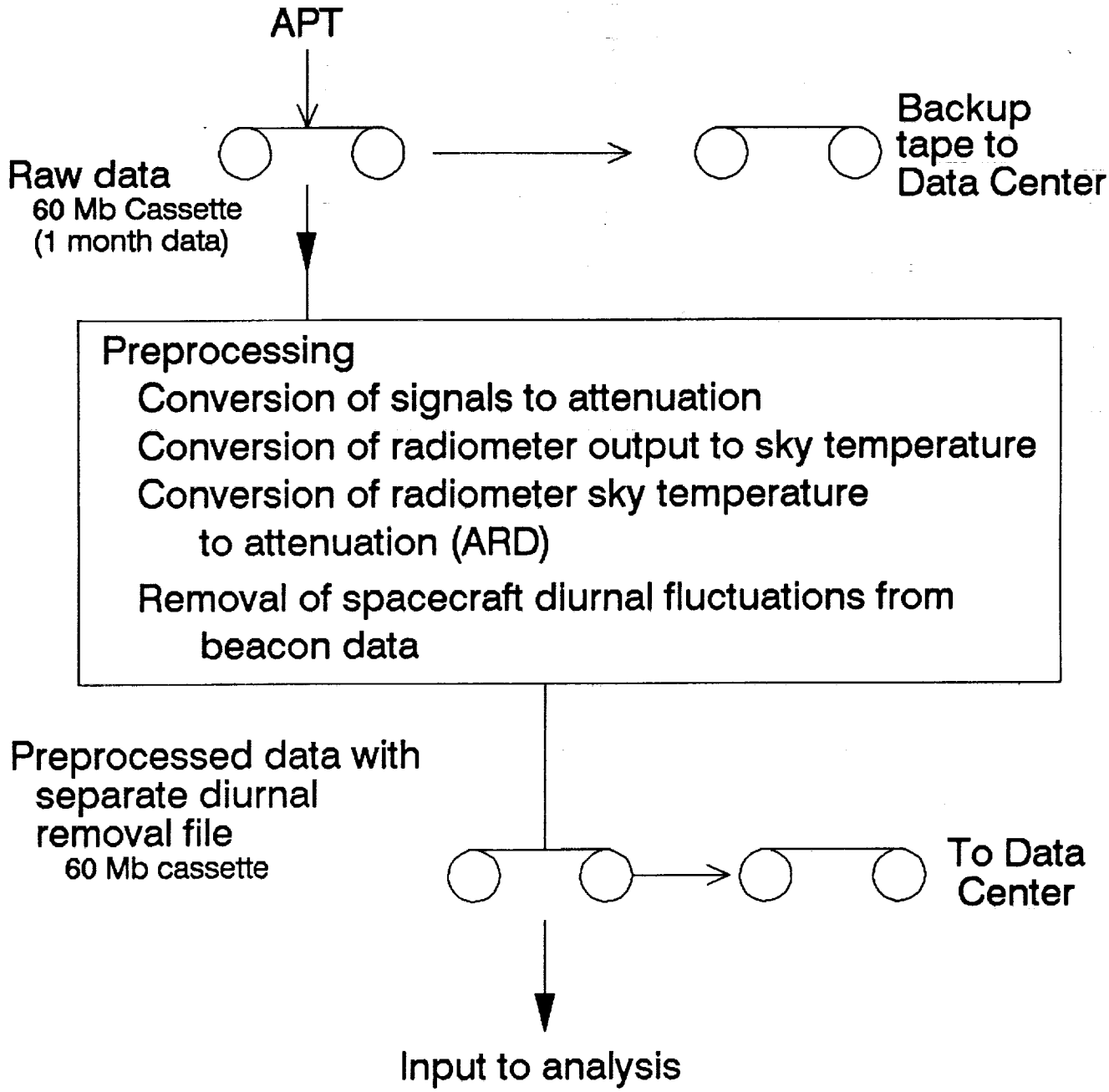
Radiometer data are voltage in 0.001 V.

Storage Requirements: $\left(16 \frac{\text{Bytes}}{\text{Sec}}\right)\left(60 \frac{\text{Sec}}{\text{Min}}\right)\left(60 \frac{\text{Min}}{\text{Hr}}\right)\left(24 \frac{\text{Hours}}{\text{Day}}\right) = 1.32 \frac{\text{Mb}}{\text{Day}}$

apdr3.drw
apdr.pll
06/09/93

Figure 13.8-1. Data storage format.

ACTS Propagation Experiment Data Flow



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