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LORRI CONCEPT REVIEW

28 JUNE 1977

25X1

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THIS DOCUMENT CONTAINS REPRINTS OF THE VISUAL MATERIAL PRESENTED AT THE LORRI SYSTEM CONCEPT REVIEW HELD AT LMSC, SUNNYVALE, CA, ON 28 JUNE 1977

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BIF003W/2-122398-77

LORRI CONCEPT REVIEW AGENDA

28 JUNE 1977

1. INTRODUCTION
2. SIGNAL ENVIRONMENT OVERVIEW
3. PAYLOAD
4. RADIOMETER ALGORITHM DEVELOPMENT
5. ANTENNAS
6. INTEGRATION ACTIVITIES
7. OPERATIONS AND DATA PROCESSING
8. SCHEDULE
9. QUESTIONS AND ANSWERS

25X1

EHF SEARCH REQUIREMENT

"PROVIDE A CAPABILITY TO SEARCH FOR, CATEGORIZE AND GEOPOSITION TO [redacted] PULSE AND CW SIGNALS IN THE 18,000 TO 40,000-MHZ FREQUENCY RANGE."

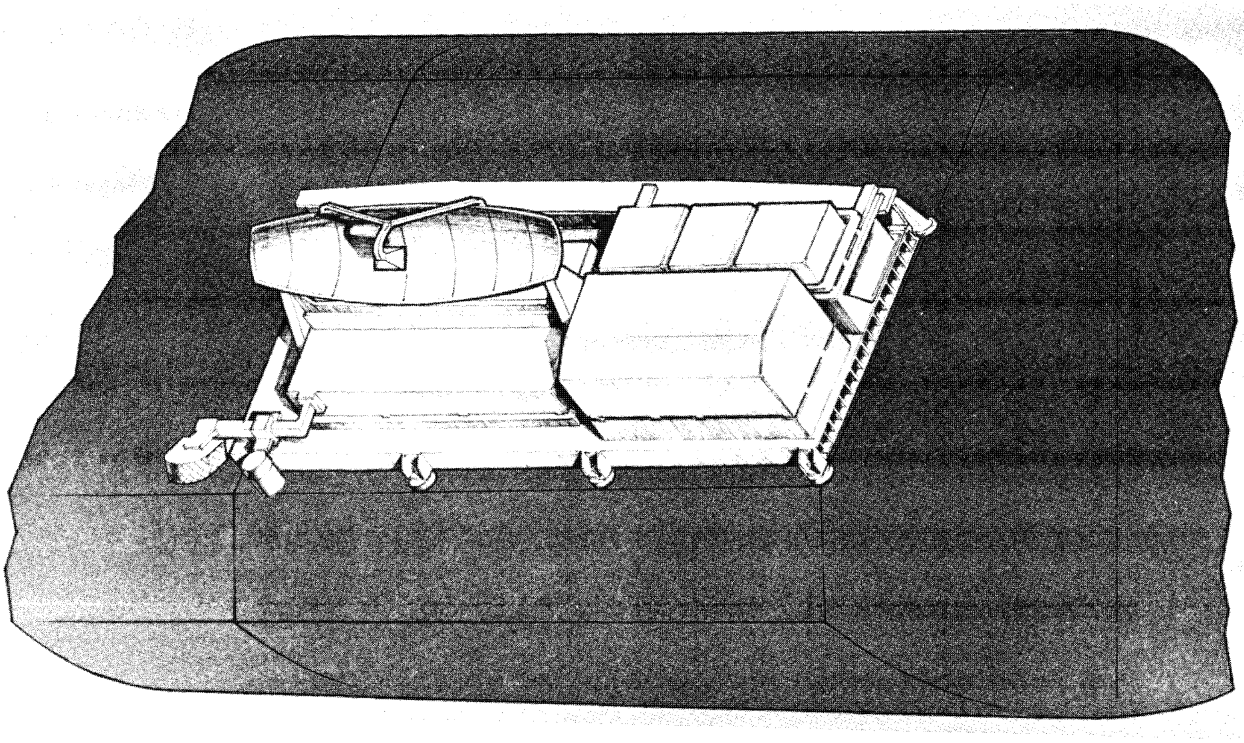
25X1

COLLECTION SYSTEM PERFORMANCE SUMMARY

- FREQUENCY RANGE — 26-42 GHZ
- INSTANTANEOUS FREQUENCY COVERAGE — 4 GHZ
- SENSITIVITY
  - PULSE TRANSMITTER POWER (-10 DBi MINOR LOBE) (45 DEG MAIN BEAM) — 29 KW / 25 KW
  - CW TRANSMITTER POWER (-10 DBi MINOR LOBE) (45 DEG MAIN BEAM) — 13 WATT / 10 WATT
- SIGNAL PARAMETERS MEASUREMENTS
  - PULSE — FREQ, AMP, TOA, PW
  - CW — FREQ, AMP, TOA
- INTERCEPT DURATION
  - WIDE BEAM — 2 MIN
  - PENCIL BEAM — 1/4 SEC
- EMITTER LOCATION — [redacted] 25X1
- AVERAGE REVISIT TIME (HI GAIN) — 3 DAYS
  (OMNI) — 26 HOURS
- READ-IN TIME AVAILABLE — 2 HOURS/DAY

P989

LORRI CONCEPT DRAWING



CONTRACTOR TASKS

ARGO SYSTEMS

PAYLOAD

AGE

ALGORITHM DEVELOPMENT

SPECIFICATIONS FOR

- TASKING
- CALIBRATION

LMSC/P-244

ANTENNAS

DATA HANDLING SUBSYSTEM

PAYLOAD/PALLET T&I

GDPS

- TASKING
- DATA PROCESSING
- CALIBRATION

HOST VEHICLE

LORRI/HV T&I

SIGNAL ENVIRONMENT

EHF EMITTER CHARACTERISTICS AND ADVANTAGES

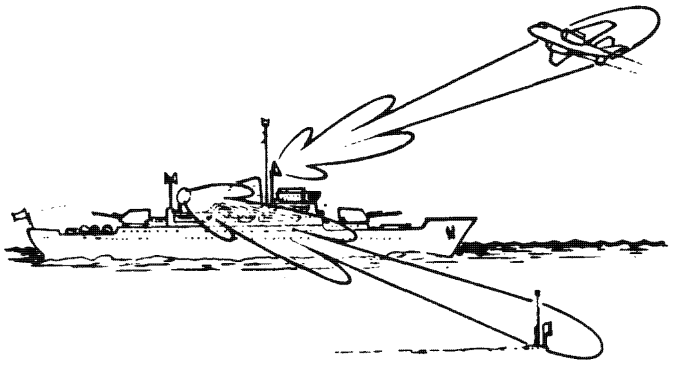
- RADAR
  - SMALL SIZE - HIGH GAIN
  - HIGH RESOLUTION
  - ECM AVOIDANCE

- COMMUNICATION
  - WIDE MODULATION BANDWIDTH
  - COVERTNESS
  - HIGHLY DIRECTIVE - SMALL SIZE - PORTABLE
  - LOWER FREQUENCY ASSIGNMENTS OVERCROWDED

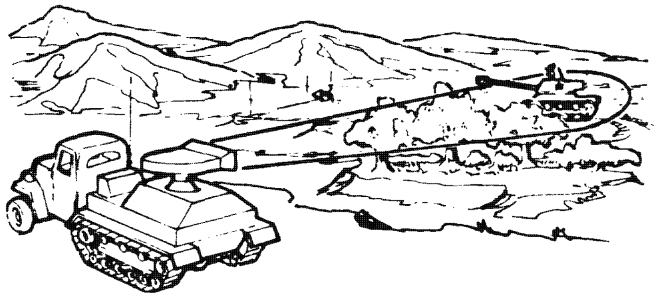
P989

PULSE RADAR EXAMPLE APPLICATIONS (26 - 42 GHZ)

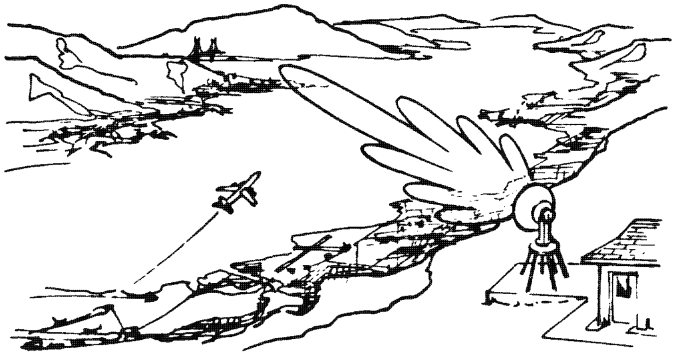
ASW & LOW ELEVATION SHIP DEFENSE



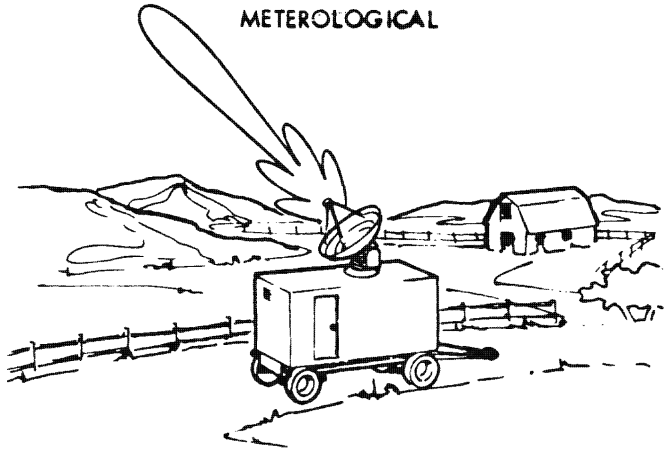
BATTLEFIELD SURVEILLANCE



HARBOR & AIRPORT SURVEILLANCE



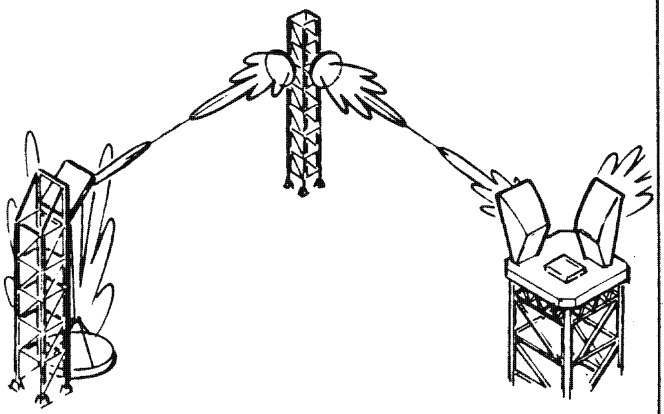
METEROLOGICAL



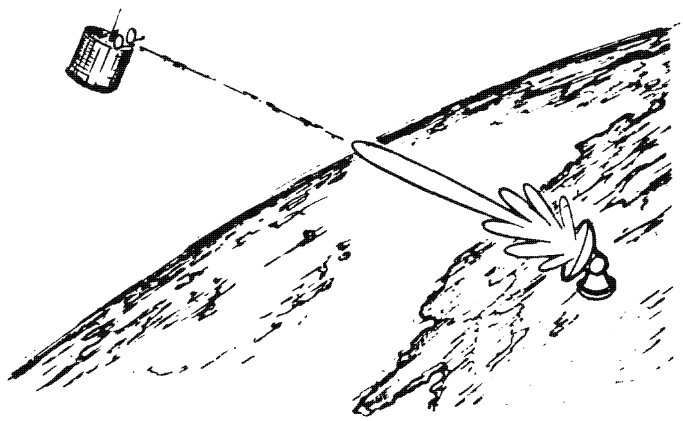
P989

CW COMMUNICATION - EXAMPLE APPLICATIONS (26 - 42 GHZ)

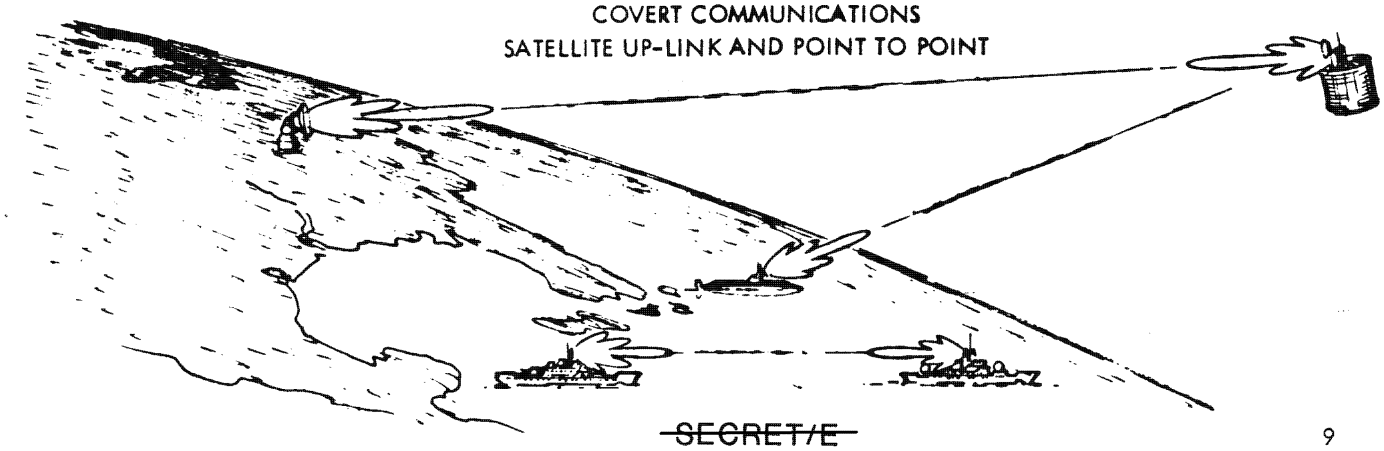
LINE OF SIGHT - TERRESTRIAL



WIDEBAND QPSK COMSAT UP-LINK



COVERT COMMUNICATIONS
SATELLITE UP-LINK AND POINT TO POINT



P989 PULSE AND CW SIGNAL ENVIRONMENT EXAMPLES (26 - 42 GHZ)

PULSE RADAR EXAMPLES

FREQUENCY RANGE (GHZ)	PRF (PPS)	PW (NS)	TRANSMITTER PEAK POWER (KW)	TRANSMITTER ANTENNA GAIN	APPLICATION	RADAR TYPE OR NAME
37.5	600	450	65	58	METEOROLOGICAL	[redacted] 25X1
34.5 - 35.2	3150-3250	15-25	30	30	NAVIGATION	SCHWALBE
36	6500	50	10	-	AIRPORT SURVEILLANCE	OLP
33.2	2,000	150-250	50	59	CARRIER APPROACH	[redacted] 25X1
36.9	7479	200	-	-	BATTLEFIELD SURV.	T8930
35	5-10,000	-	-	-	SHIP NAVIGATION	[redacted] 25X1

CW COMMUNICATION EXAMPLES

FREQUENCY RANGE	CARRIER MODULATION	RF CHANNEL BANDWIDTH	TRANSMITTER POWER (W)	ANTENNA GAIN (dB)	APPLICATION	EXAMPLE
27.5 - 31.0	QPSK (500 MBS)	500 MHZ	100 - 1000 W	60	COMSAT UP-LINK	GROWTH SYSTEM (ATS-V BASELINE)
30	FDM-FM	20 MHZ	100 W	50	COMSAT UP-LINK	[redacted] 25X1
36-38	PCM (100 MBS)	200 MHZ	800 W	30	COVERT UP-LINK (SPREAD SPECTRUM)	SURV-SAT (US)

PULSE ENVIRONMENT MODEL

FREQUENCY RANGE	PRF	PW	TRANSMITTER PEAK POWER	TRANSMITTER ANTENNA GAIN
26 - 42 GHZ	500 PPS TO 14,000 PPS	20 NS TO 1 μS	10 KW TO 150 KW	30 DB TO 60 DB

CW ENVIRONMENT MODEL

FREQUENCY RANGE	CARRIER MODULATION	RF CHANNEL BANDWIDTH	TRANSMITTER POWER	TRANSMITTER ANTENNA GAIN
26 - 42 GHZ	QPSK, PCM, AND FDM-FM	20 MHZ TO 500 MHZ	0.2 W TO 1000 W	30 DB TO 60 DB

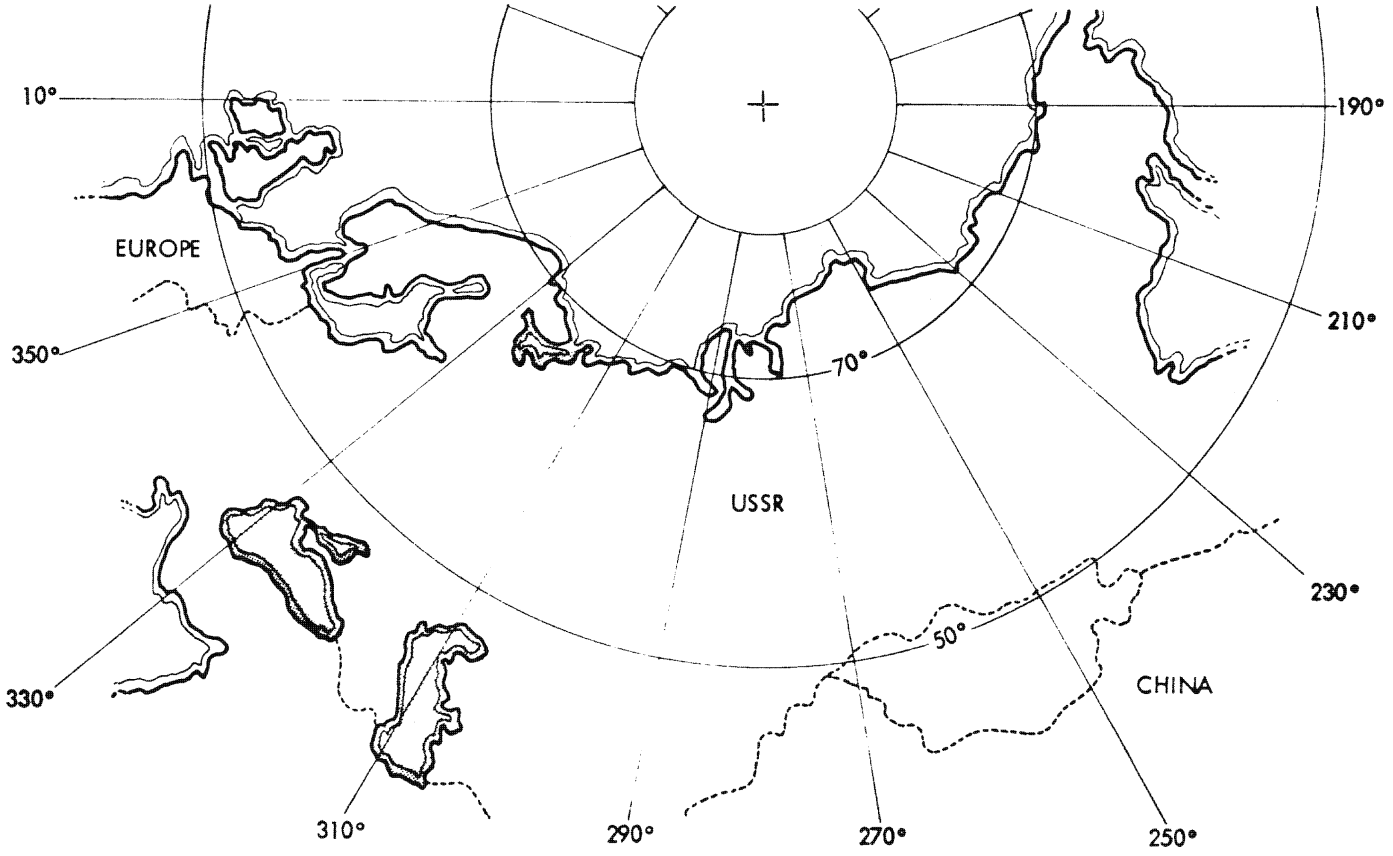
POSSIBLE GEOGRAPHIC AREAS OF INTEREST

SEARCH AREA	POSSIBLE SYSTEM APPLICATION

25X1

P989

TYPICAL COLLECTION GEOMETRY



APPARENT SURFACE TEMPERATURE VARIATIONS

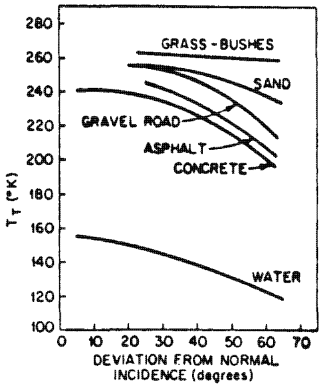


Fig. 10 Measured surface temperature T_T versus deviation from normal incidence at $\lambda = 1.8$ cm. *(Courtesy of Space General Corp.)*

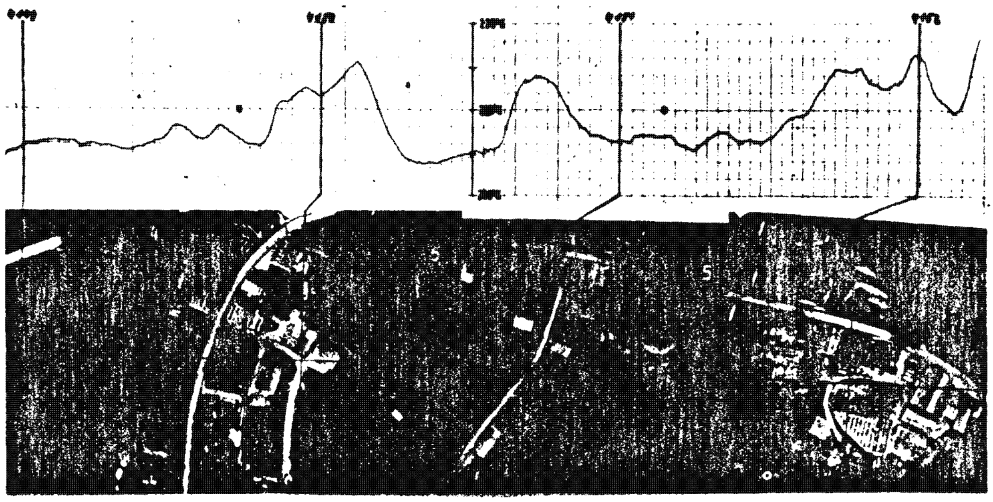
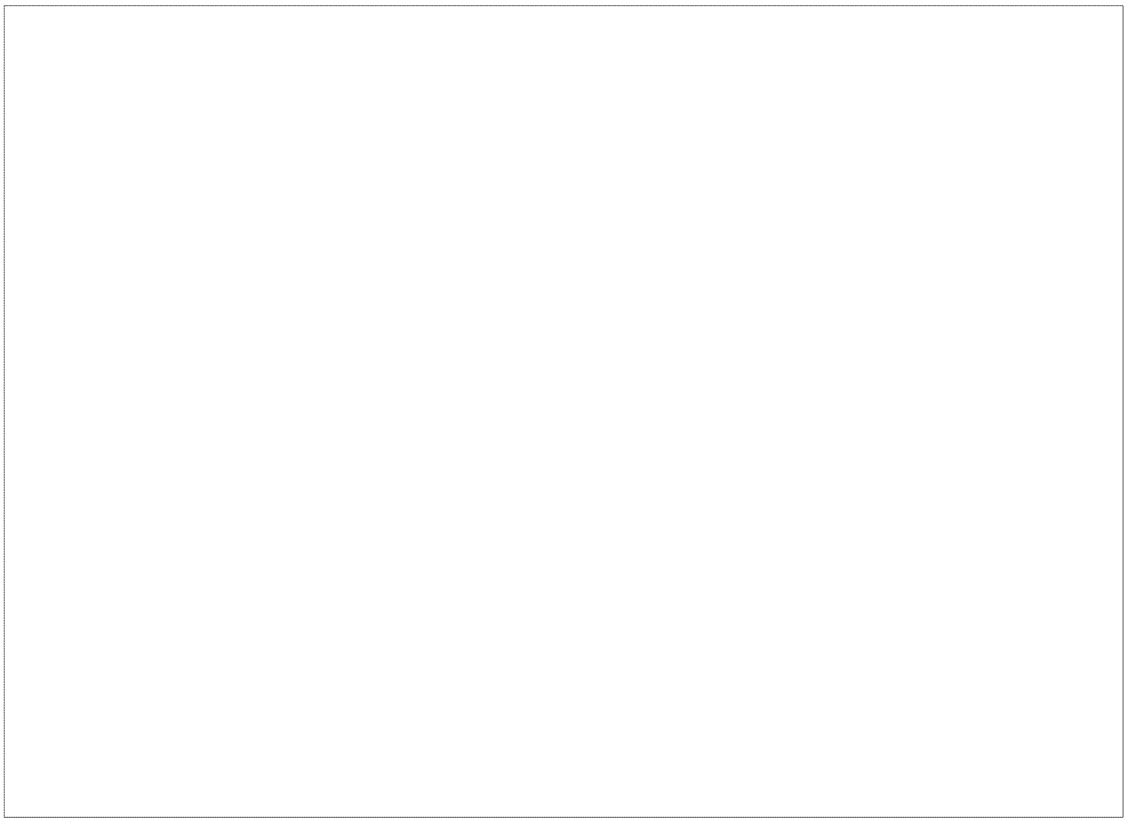


Fig. 8. Example of a registration of the earth's surface apparent temperature (flight altitude: 300 meters, antenna spot diameter: 11.50 meters, flight velocity: 60 m/s, τ_{rg} = 100 ms). The aerophotos are released by the Regierung von Oberbayern (GS146/47-50).

P989

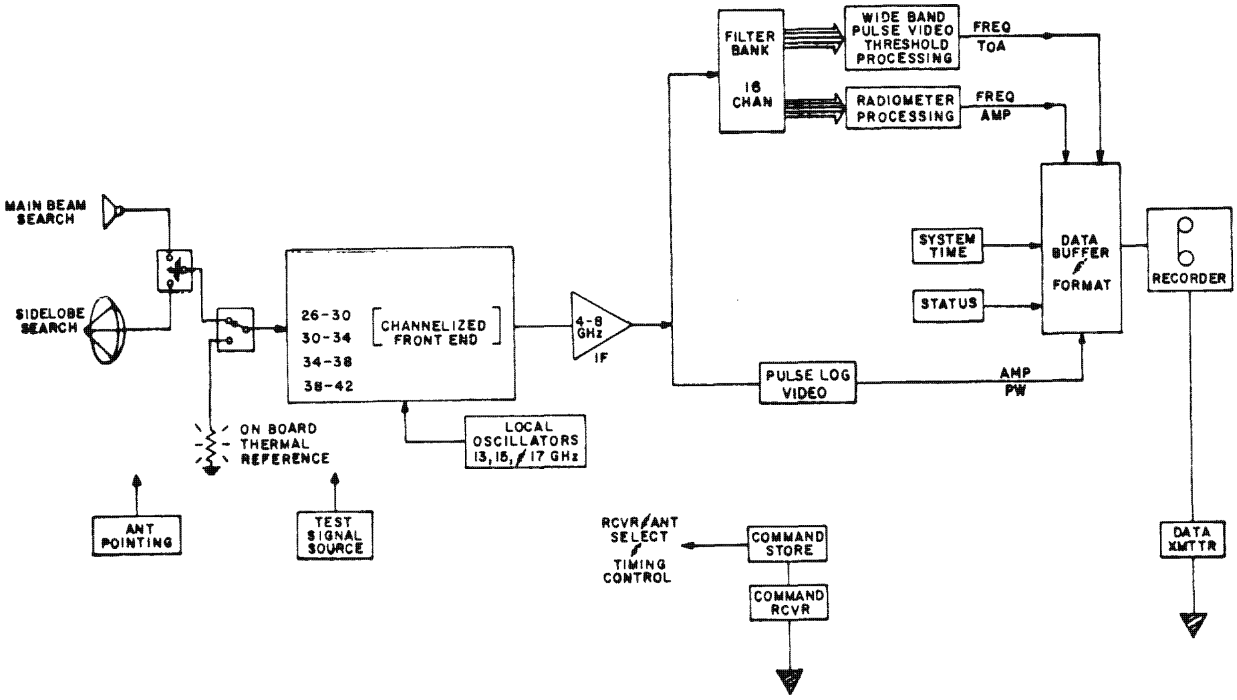
SUMMARY OF SEARCH OPPORTUNITIES

25X1



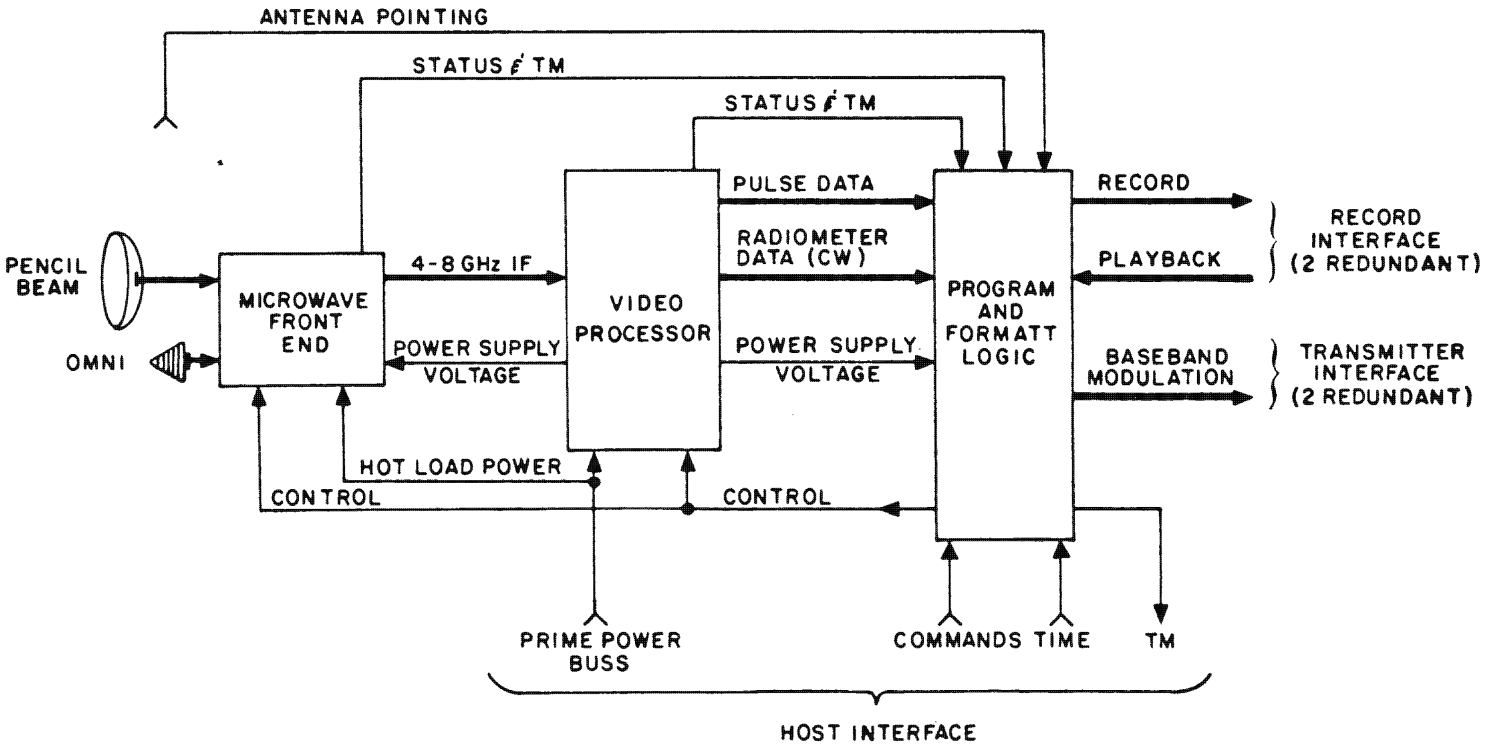
PAYLOAD

COLLECTION SYSTEM BLOCK DIAGRAM



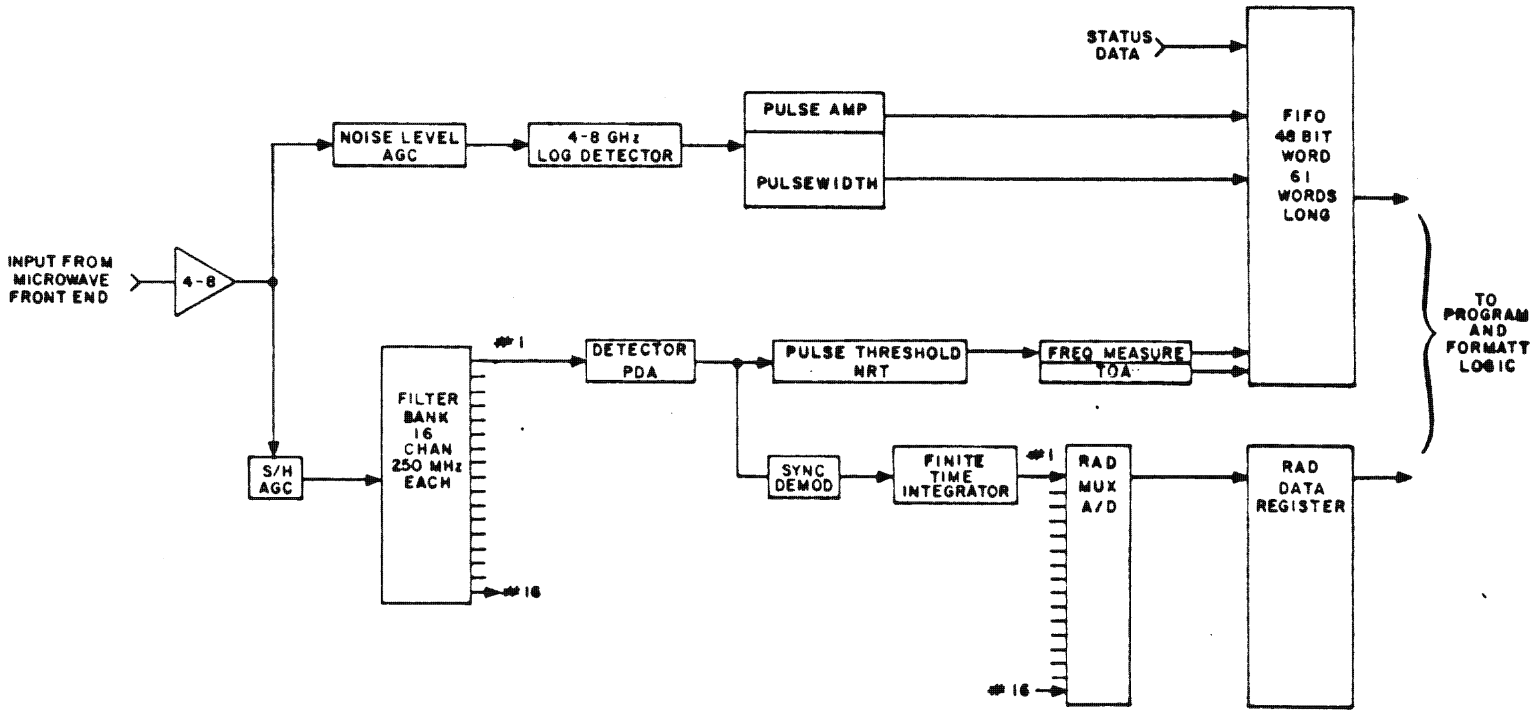
P989

PAYLOAD FUNCTIONAL DIAGRAM



P989

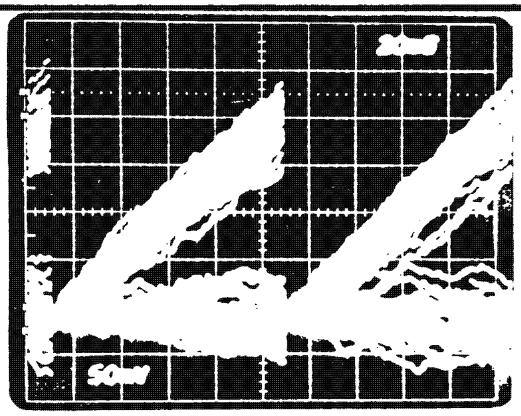
VIDEO PROCESSOR BLOCK DIAGRAM



P989

MEASURED RADIOMETER DETECTION SENSITIVITY

MULTIPLE SWEEP (10 SEC) RECORDING OF SINGLE RADIOMETER CHANNEL OUTPUT

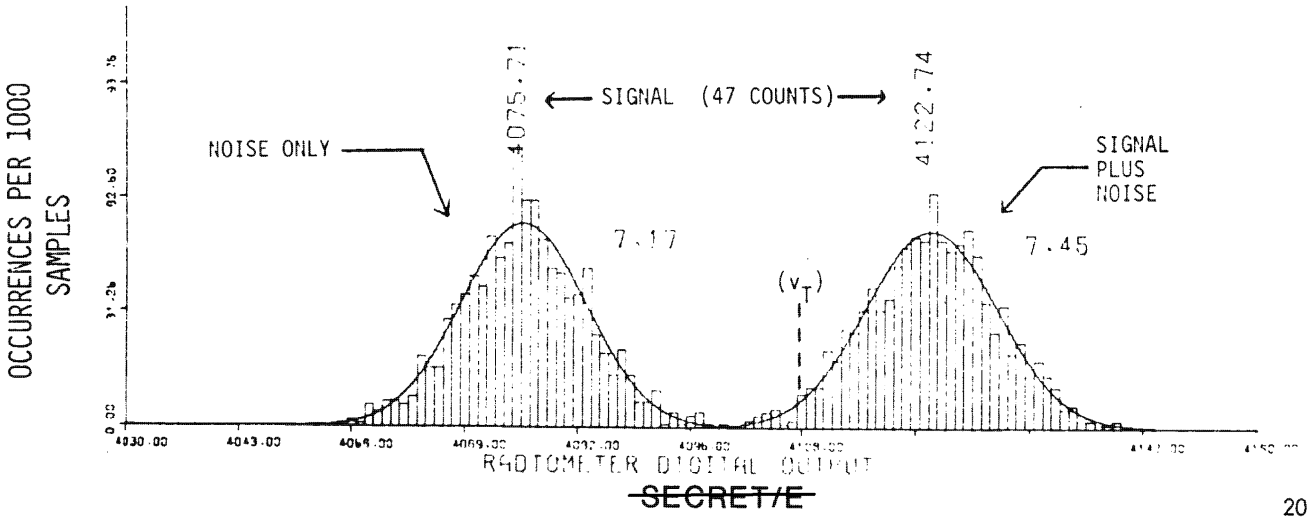


- 100 dBM (SIGNAL & NOISE)

$(S/N)_o$ = +17 dB

$(S/N)_i$ = -25 dB

NOISE ONLY



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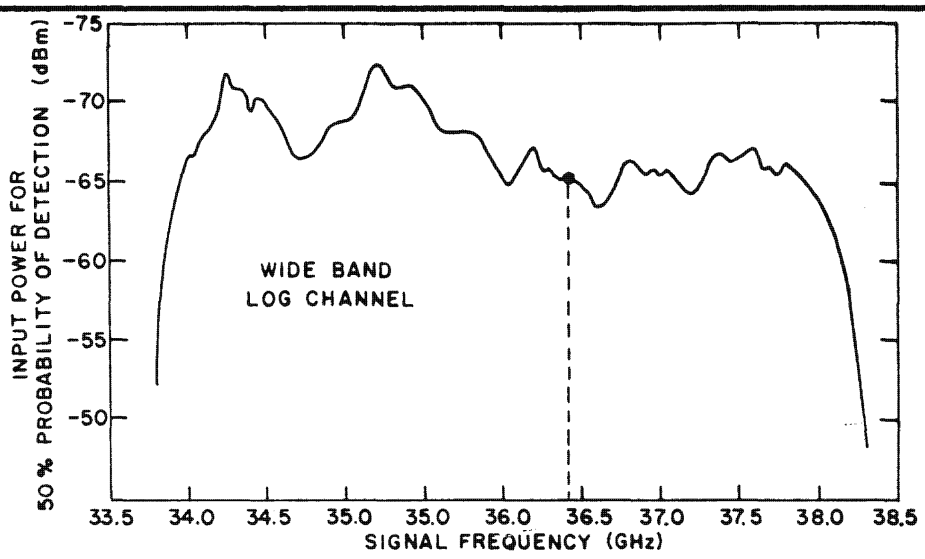
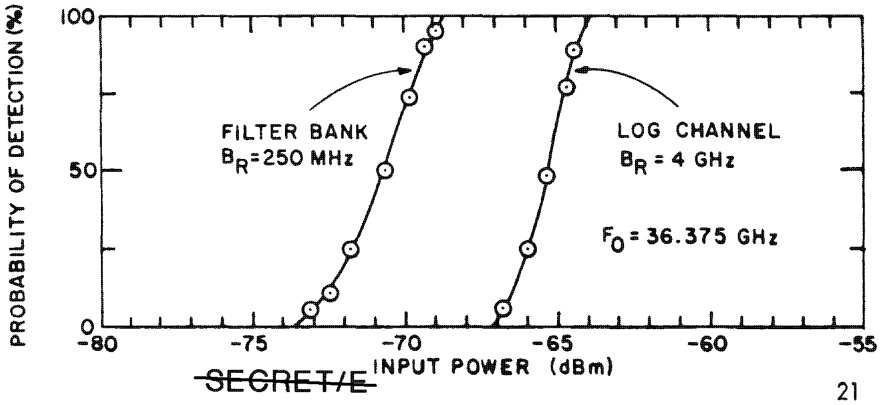
MEASURED PULSE DETECTION SENSITIVITY (34 - 38 GHZ)

B_R = 4 GHz
B_V = 20 MHz
PW = 25 ns
FAR = 1/sec
50% DETECTION
NF = 15 dB



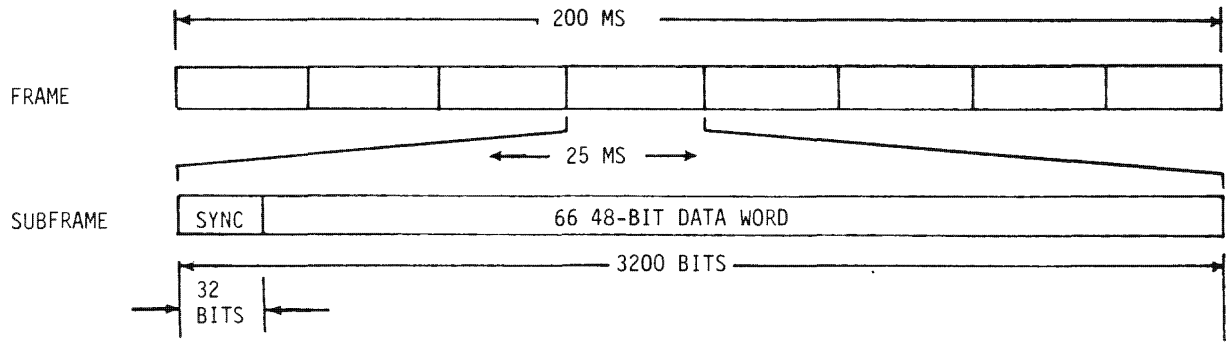


P989

MEASUREMENT RESOLUTION AND ACCURACY

		RANGE	RESOLUTION	ACCURACY
PULSE SIGNALS	FREQUENCY	26-42 GHz	250 MHz	± 150 MHz
	AMPLITUDE	25 dB	1 dB	± 5 dB
	PULSEWIDTH	20 - 360 ns	20 ns	±0.1 μs
		.36 - 8.96μs	0.2 μs	±1 μs PLUS +1 μs/SEC
	TIME OF MEASUREMENT	HV TIME	200 ms	25ms
CW SIGNALS	FREQUENCY (FILTER BANK)	26-42 GHz	250 MHz	± 150 MHz
	AMPLITUDE	30 dB	1 dB	± 5 dB
	TIME OF MEASUREMENT (FILTER BANK)	HV TIME	200 ms	25 ms

DATA FORMAT



DATA WORDS PER SUBFRAME:
- 48 PULSE WORDS
- 16 FILTER BANK RADIOMETER WORDS
- 2 STATUS WORDS

FBR WORD BIT ASSIGNMENTS:
- 26 DATA BITS (ONE FREQUENCY CELL)
- 4 CHANNEL NUMBER BITS
- 18 PARITY BITS

PULSE WORD RATE: 1920 WORDS PER SEC.

READ-IN RATE: 128 K BITS PER SEC

RADIOMETER DATA 31 kB/SEC 24%

PULSE DATA 92 kB/SEC 72%

STATUS & SYNC 5 kB/SEC 4%

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P989

PULSE INTERCEPT WORD GROUP PARAMETERS

PURPOSE	DESIGNATION	RESOLUTION	RANGE	BITS REQUIRED
STATUS	NARROW BAND THRESHOLD CROSSING (NBT)	-	-	1
	WIDE BAND THRESHOLD CROSSING (WBT)	-	-	1
	TSG ON	-	-	1
FREQUENCY MEASUREMENT	ACTIVE FREQUENCY BIN (CH #)	250 MHz	4 GHz	4
	FREQUENCY BIN CROSSOVER (CHX)	-	-	1
	NON ADJACENT BIT UP (NADJ)	-	-	1
	COUNT DIRECTION OF ENCODER (UP/DN)	-	-	1
TOA	TOA (REFERENCED TO FRAME SYNC)	0.9765625 μs	200 ms	18
	FRAME ID (FRID)	-	-	1
PULSE WIDTH/ AMP	PULSE WIDTH (PW)	20 ns 200 ns	0-360 ns 0.36/8.96 s	6
	PULSE AMPLITUDE (PA)	1 dB	30 dB	5
STATUS	MISSING PULSE COUNTER (MPC)	1	16	4
	PENCIL BEAM/WIDE BEAM (ANT)	-	-	1
	REPEAT FIRST 3 BITS REVERSE ORDER	-	-	3
			TOTAL	48
				24

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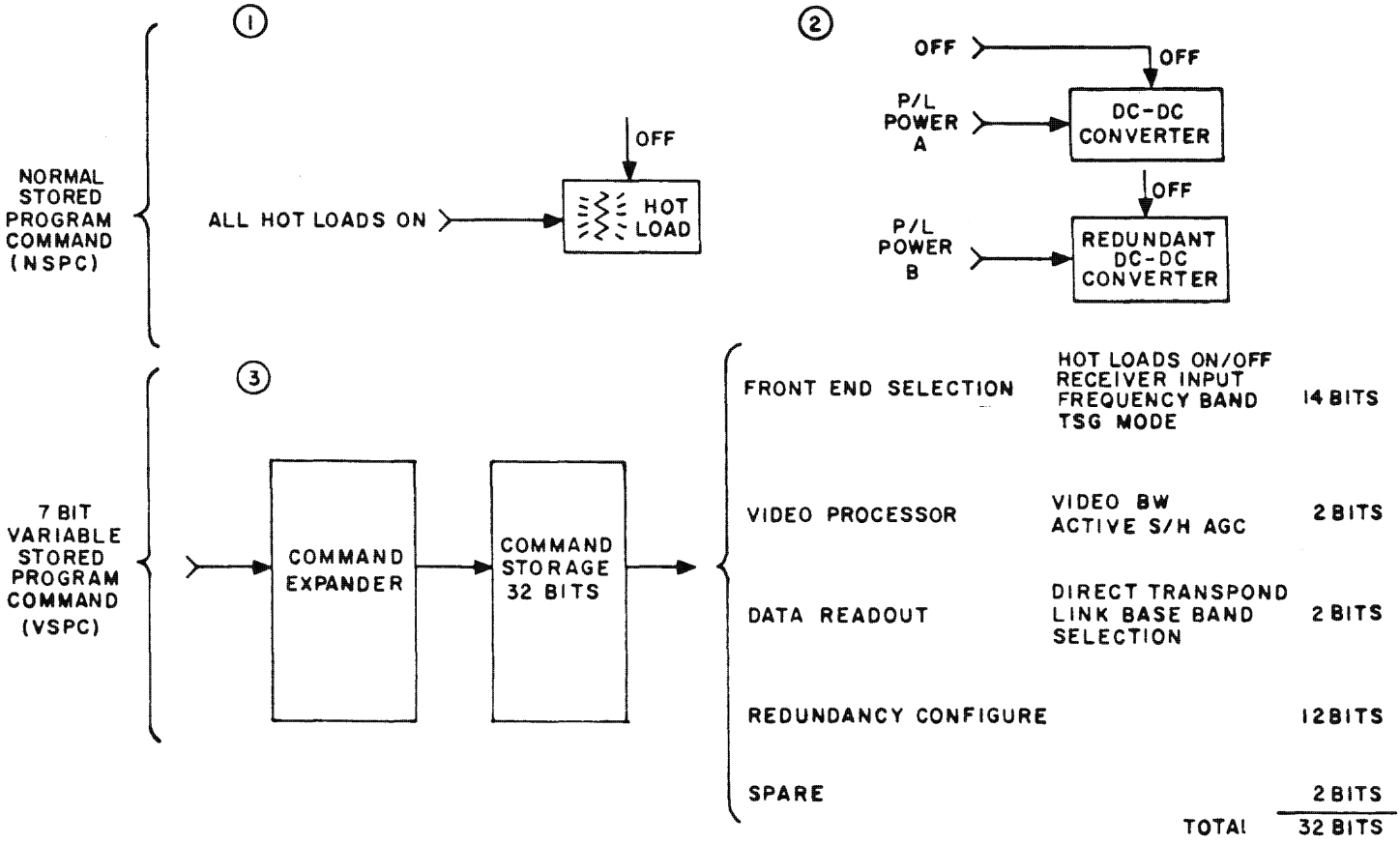

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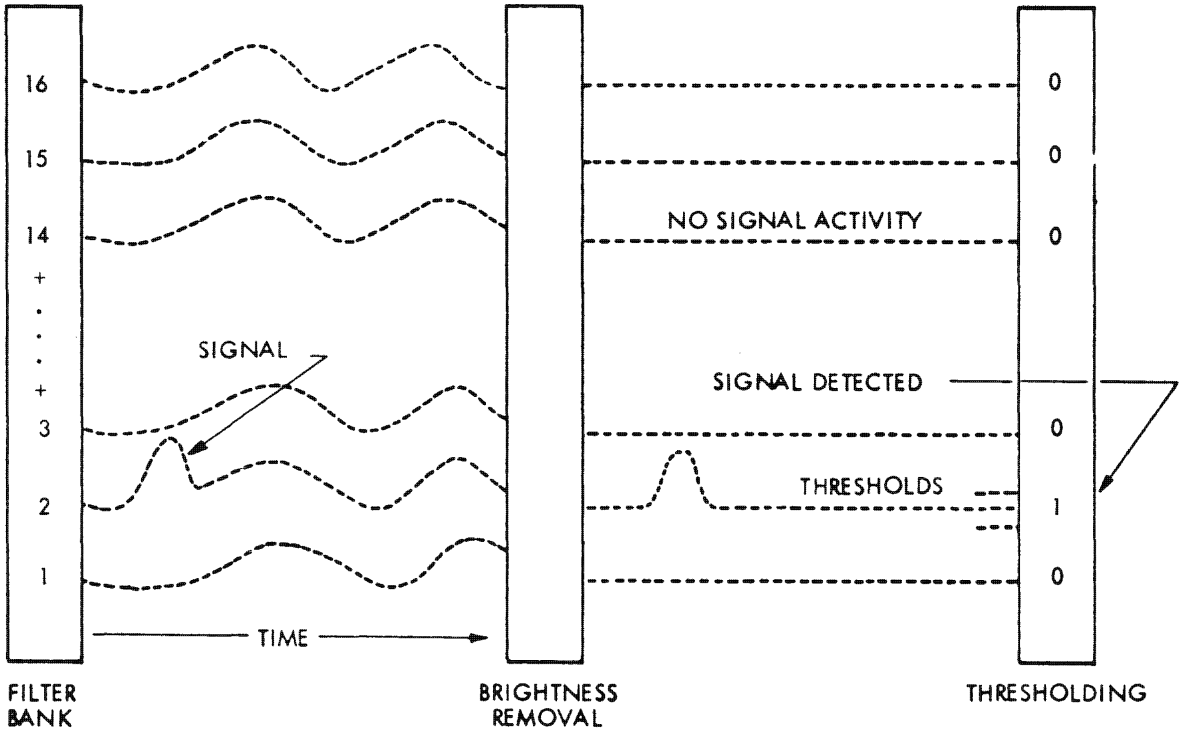
RADIOMETER DETECTION ALGORITHM

P989

ADAPTIVE THRESHOLDING FUNCTION



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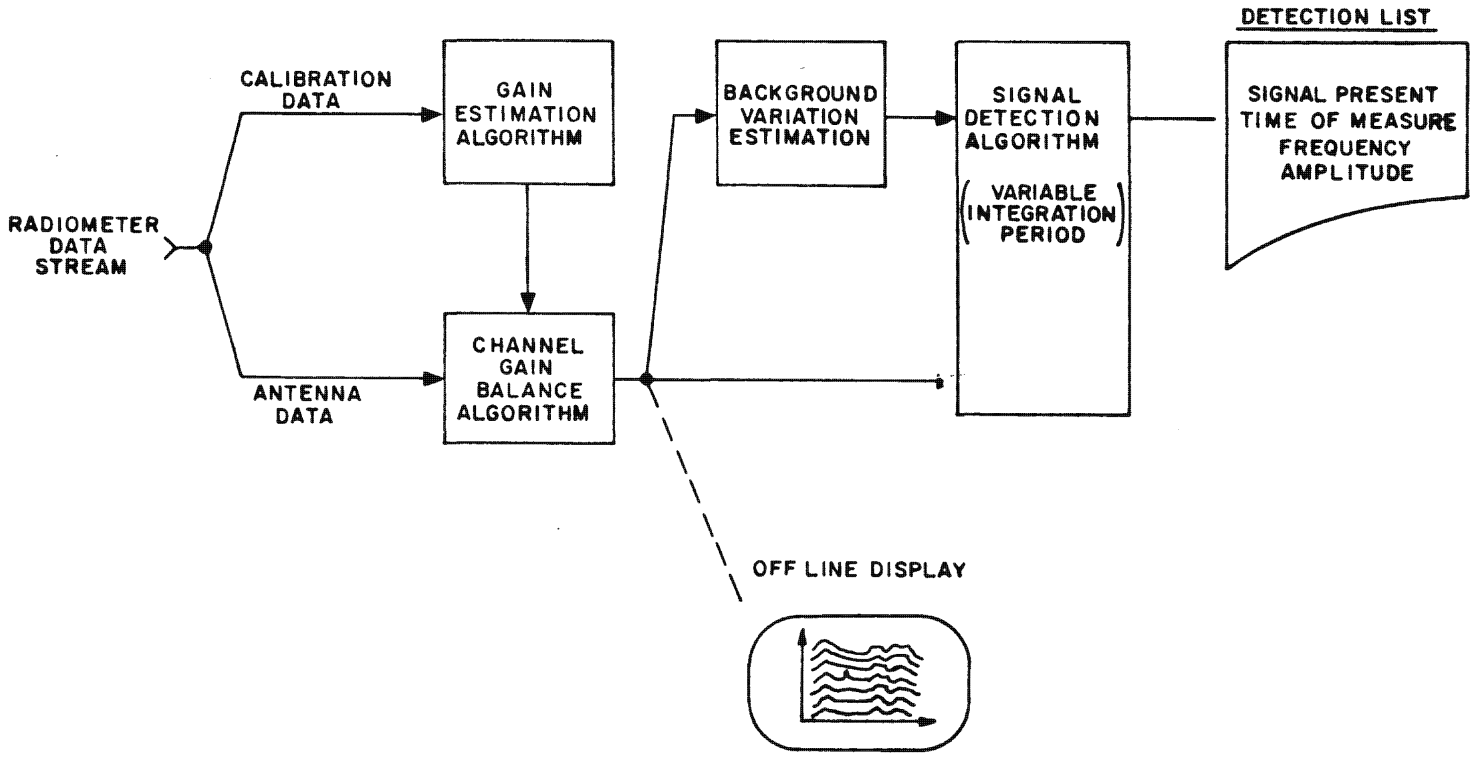
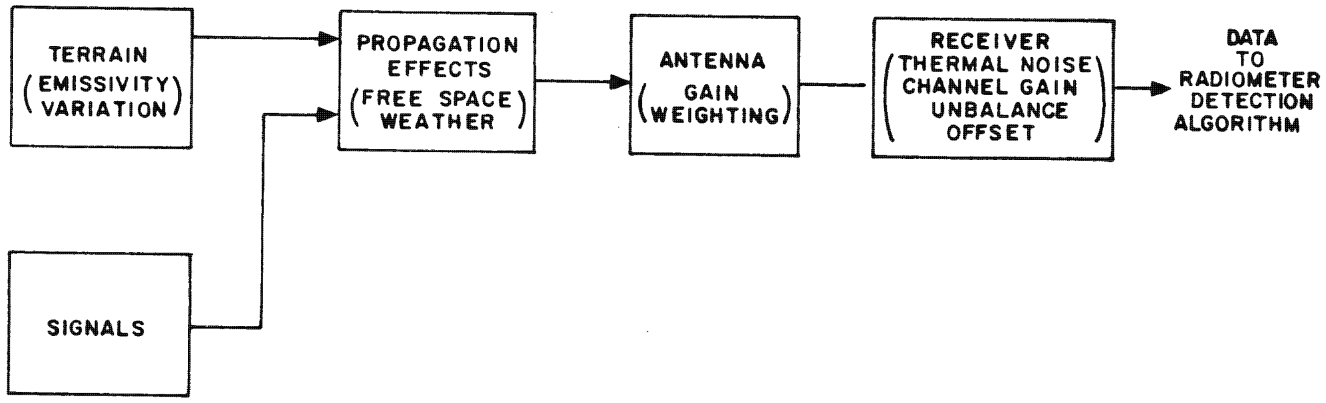
RADIOMETER DETECTION ALGORITHM



P989

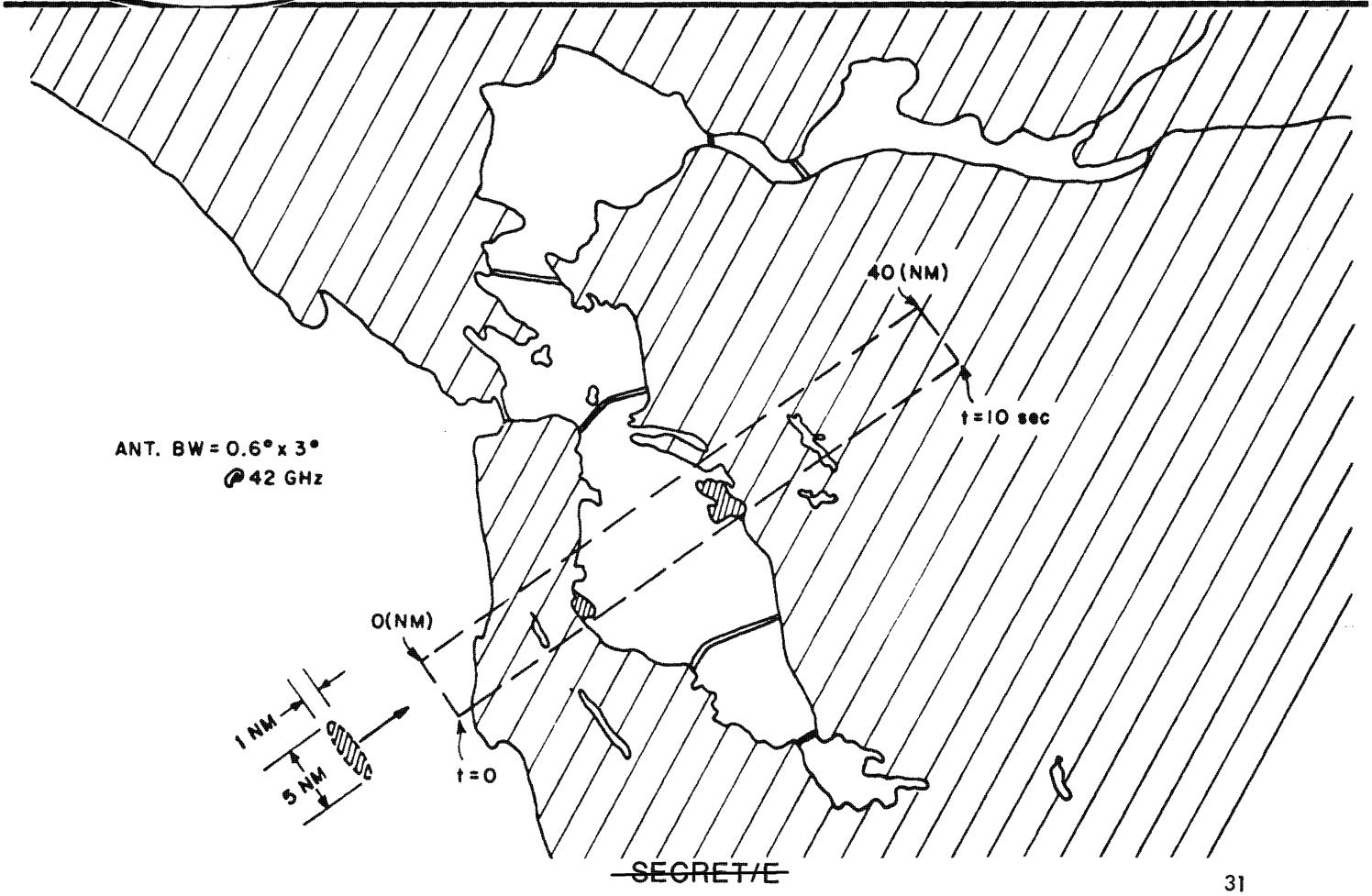
RADIOMETER DATA SIMULATOR



RADIOMETER DATA SIMULATOR

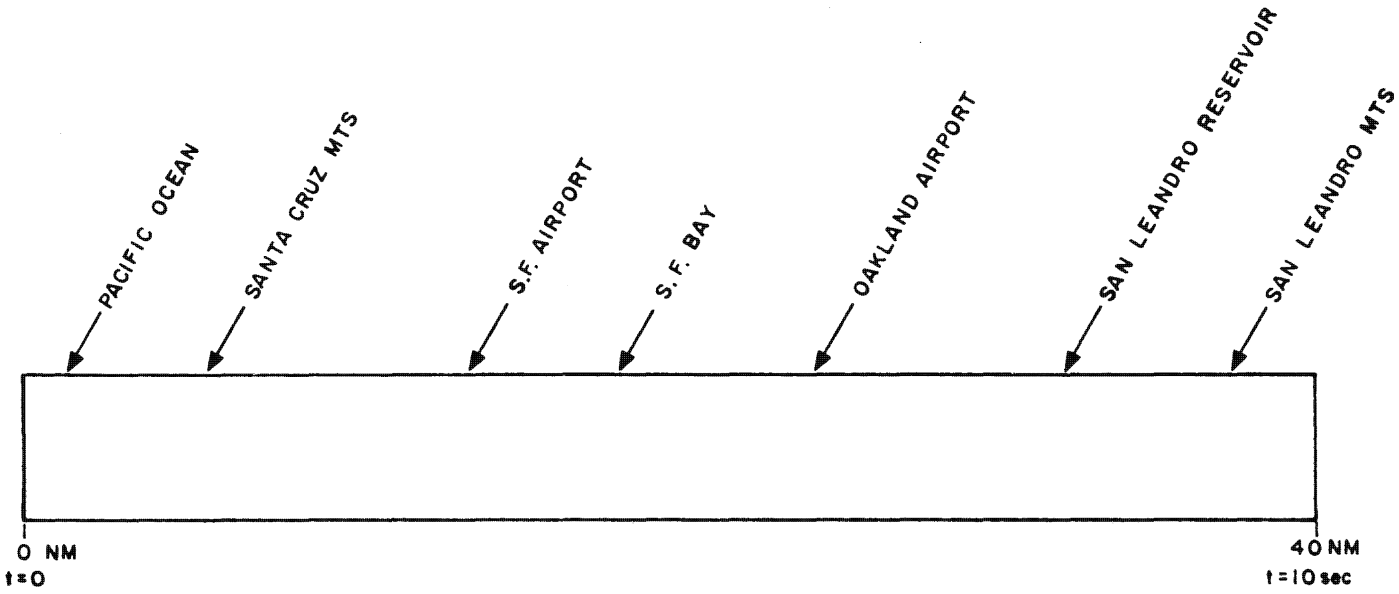
P989

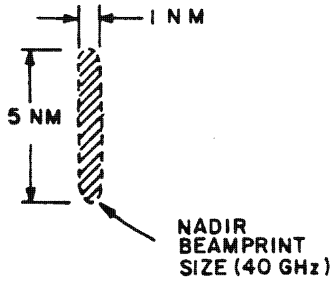
SIMULATED COLLECTION FLIGHT PATH



P989

FLIGHT PATH TERRAIN EMISSIVITY



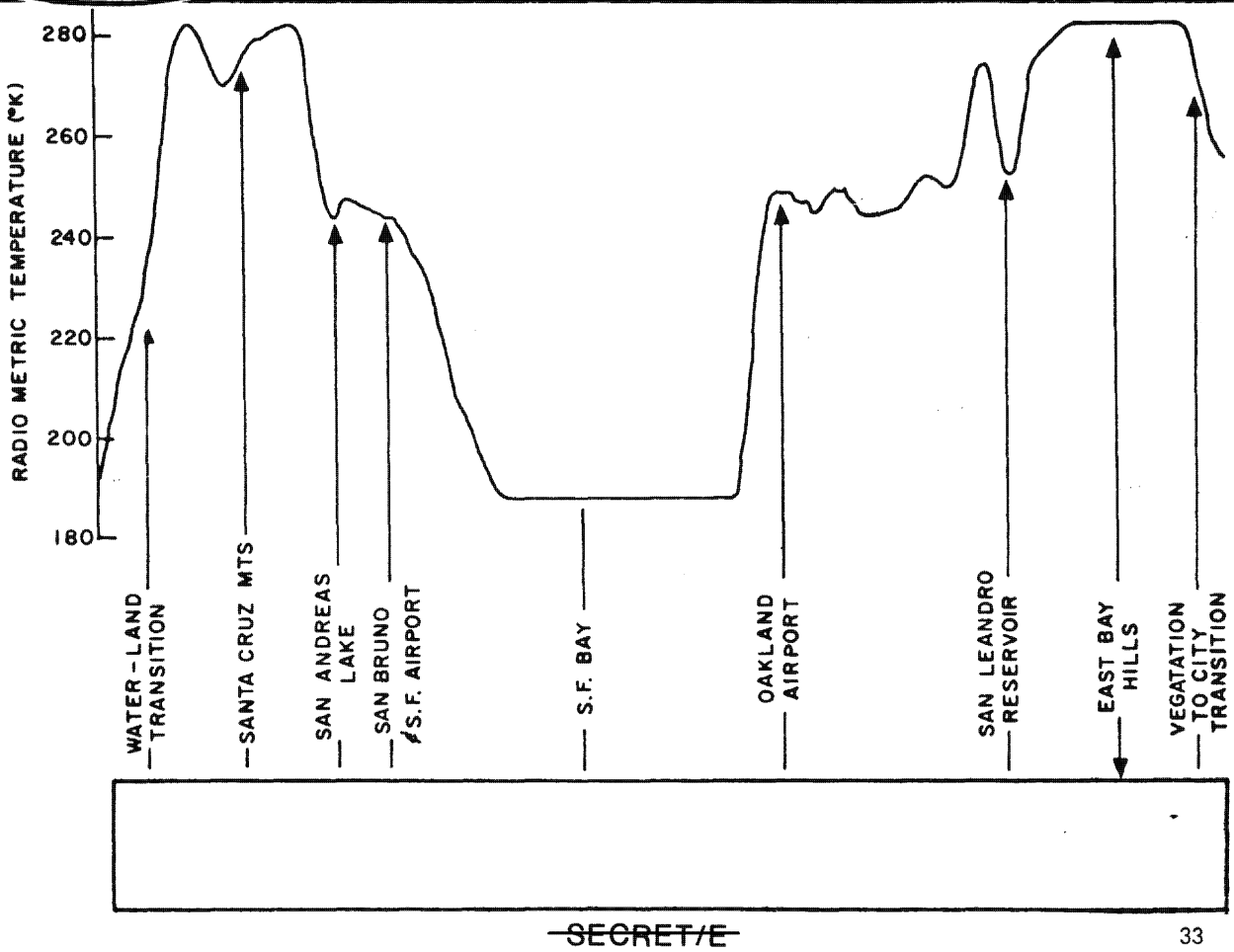


WATER NOMINAL EMISSIVITY $\epsilon = 0.62$

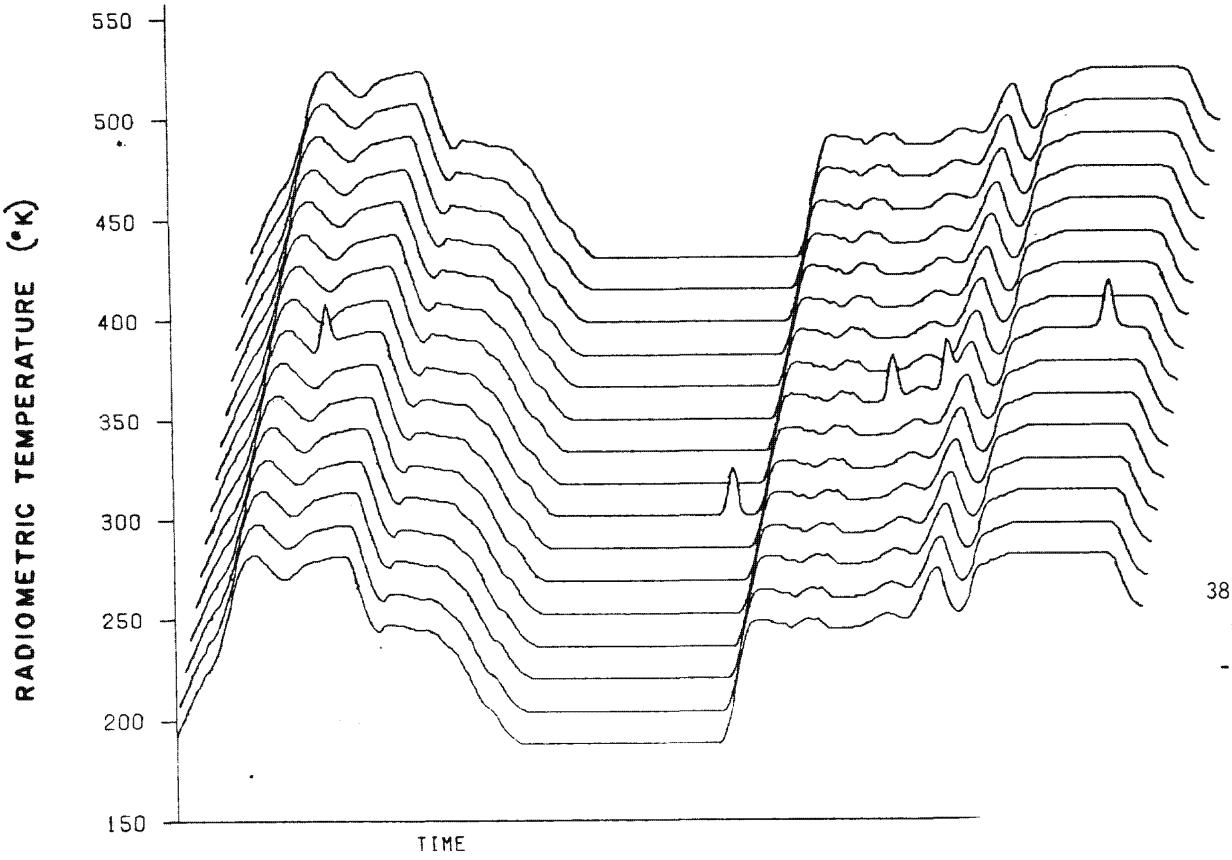
CONCRETE; ASPHALT, BARE SOIL $\epsilon = 0.83$

GRASS, TREES, HEAVY VEGITATION $\epsilon = 0.97$

P989 SINGLE CHANNEL ANTENNA RADIOMETRIC TEMPERATURE - CLEAR DAY

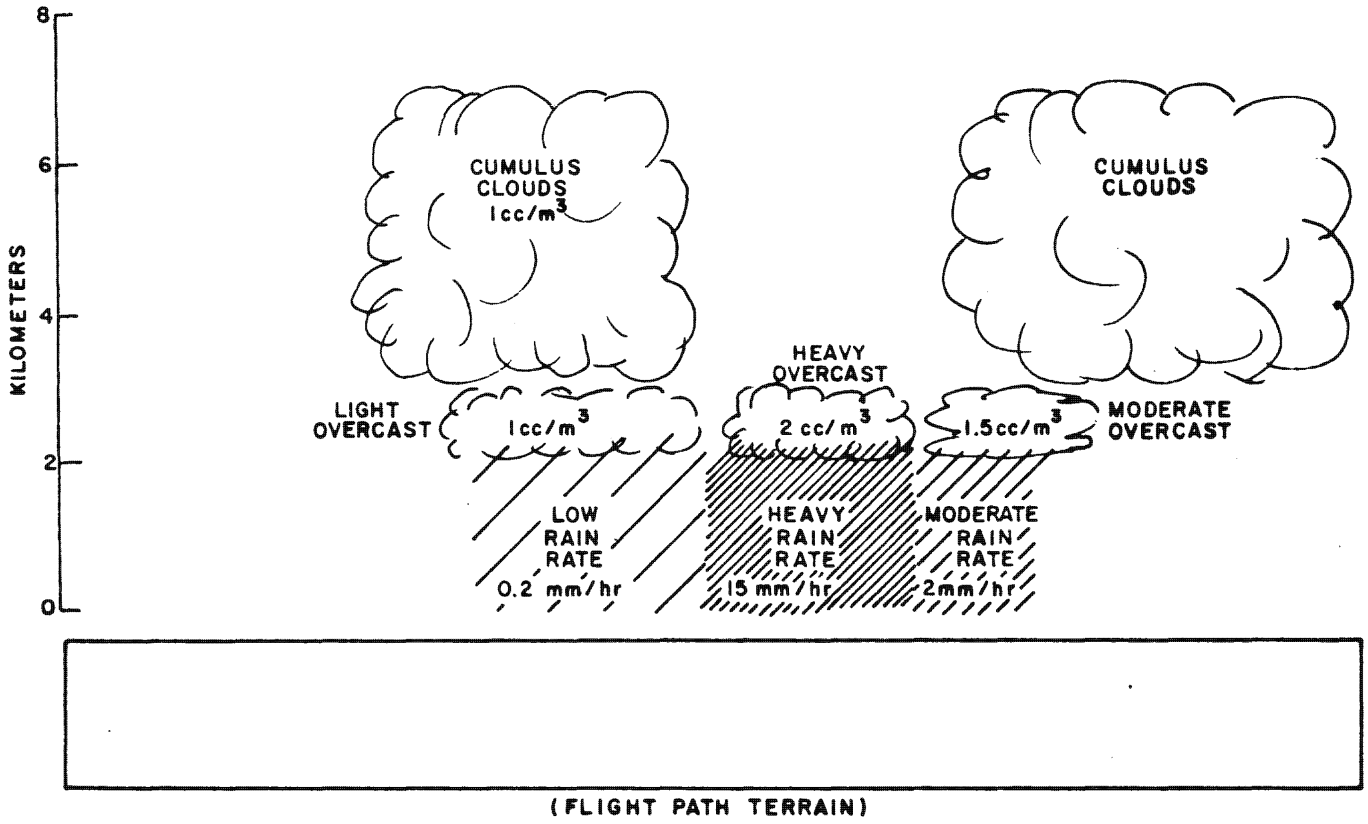


P989 CLEAR DAY ANTENNA RADIOMETRIC TEMPERATURE - 16 CHANNEL



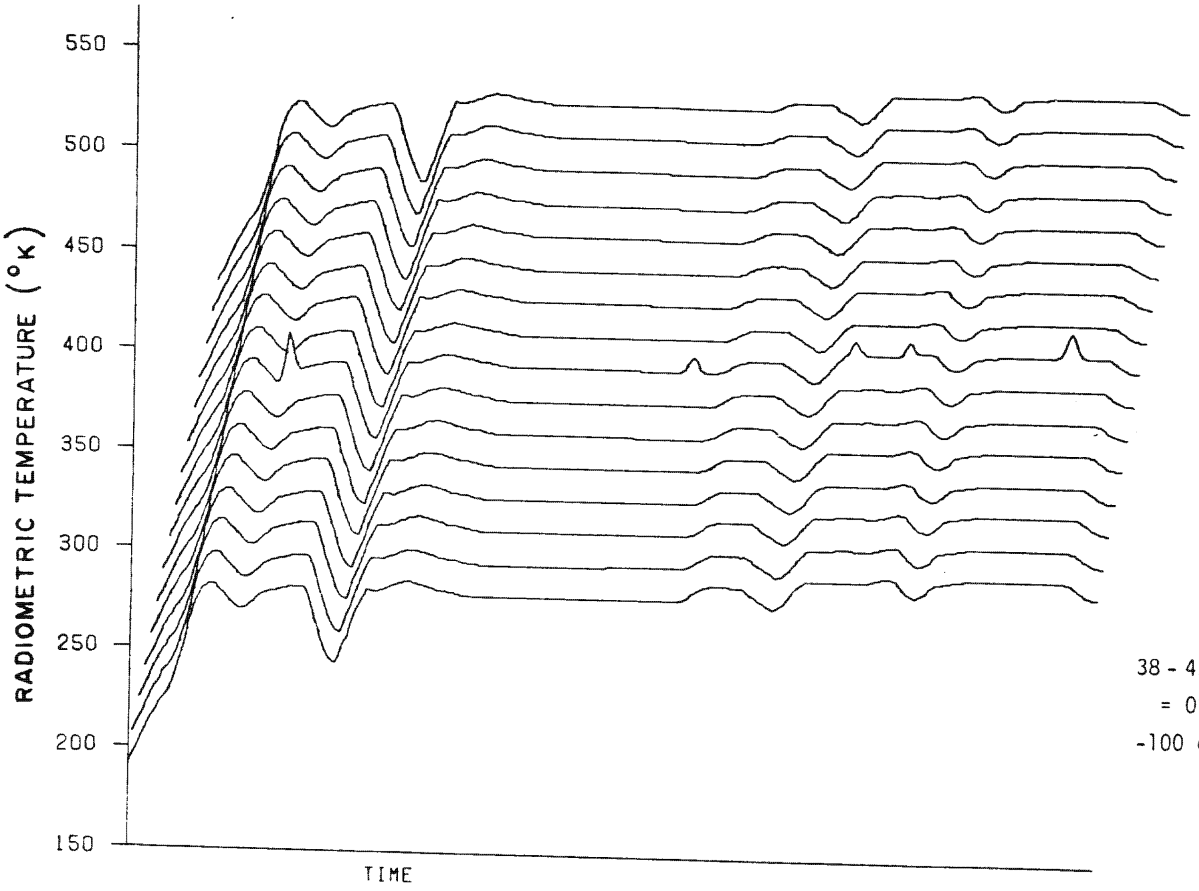
P989

ATMOSPHERIC WEATHER MODEL FOR SIMULATED FLIGHT PATH



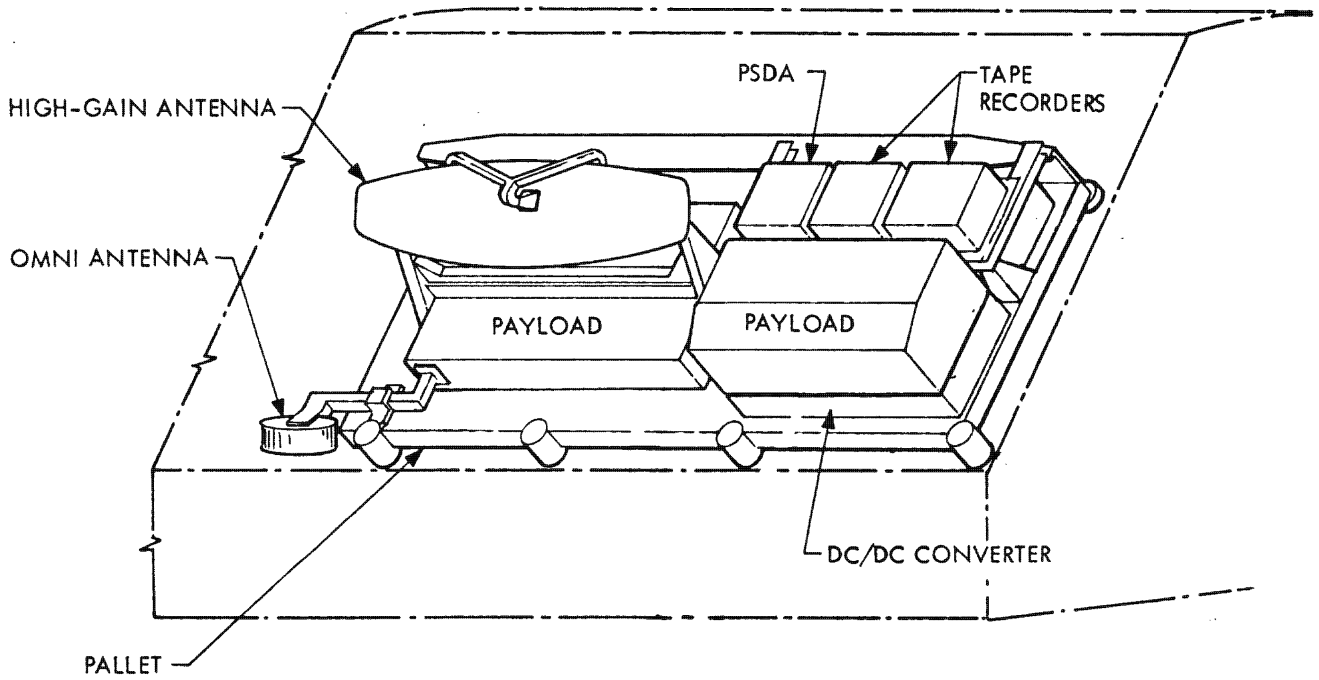
P989

OVERCAST RAINY ANTENNA RADIOMETRIC TEMPERATURE - 16 CHANNEL

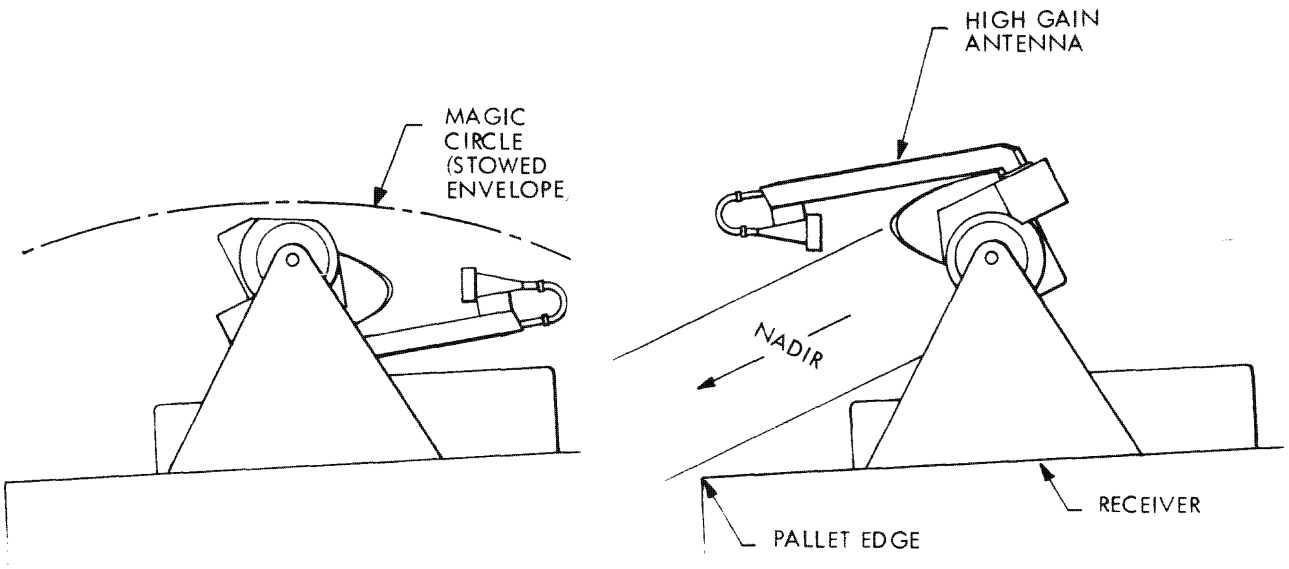


ANTENNA COVERAGE

PALLET INSTALLATIONS



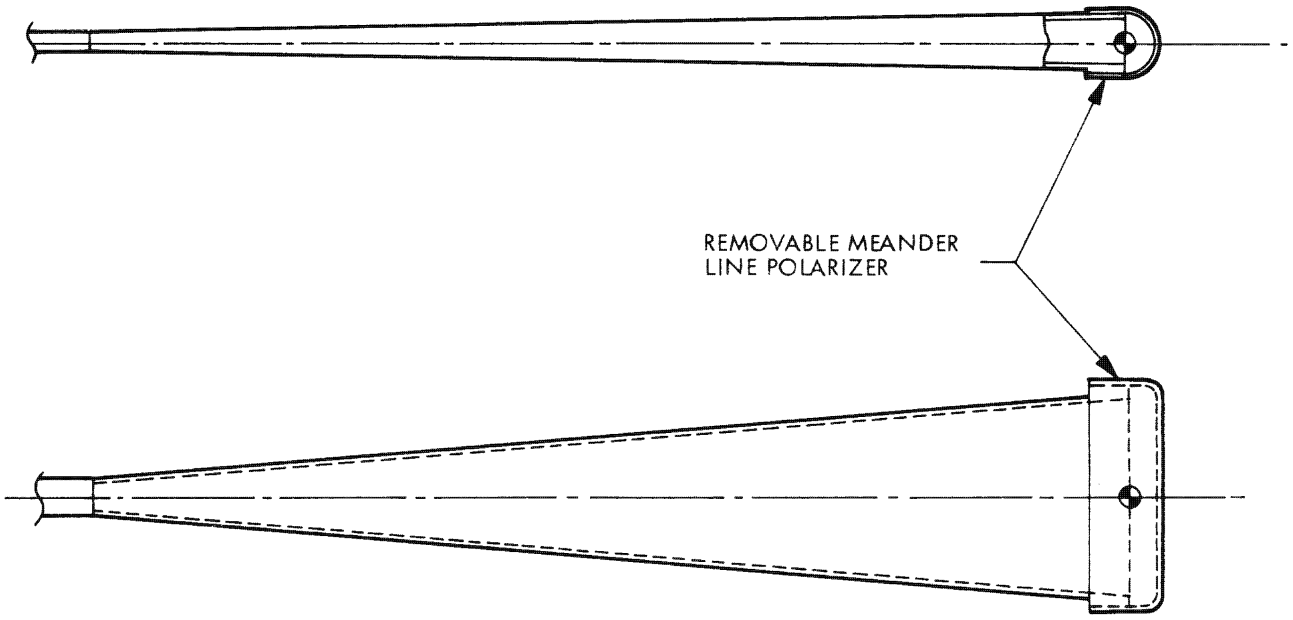
SKETCH OF ANTENNA



STOWED

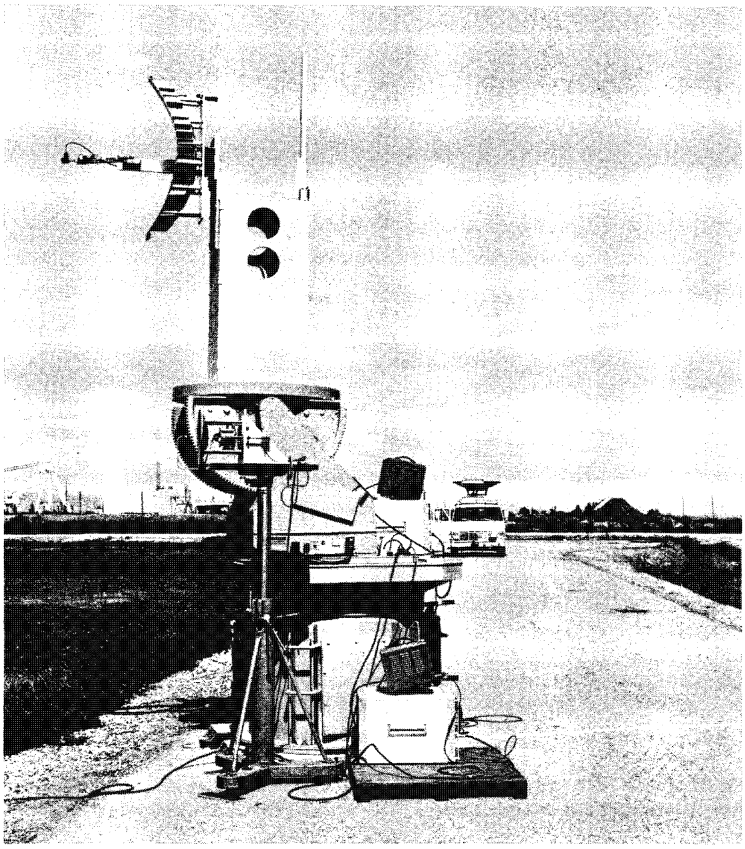
DEPLOYED

PROPOSED HIGH-GAIN ANTENNA FEED HORN

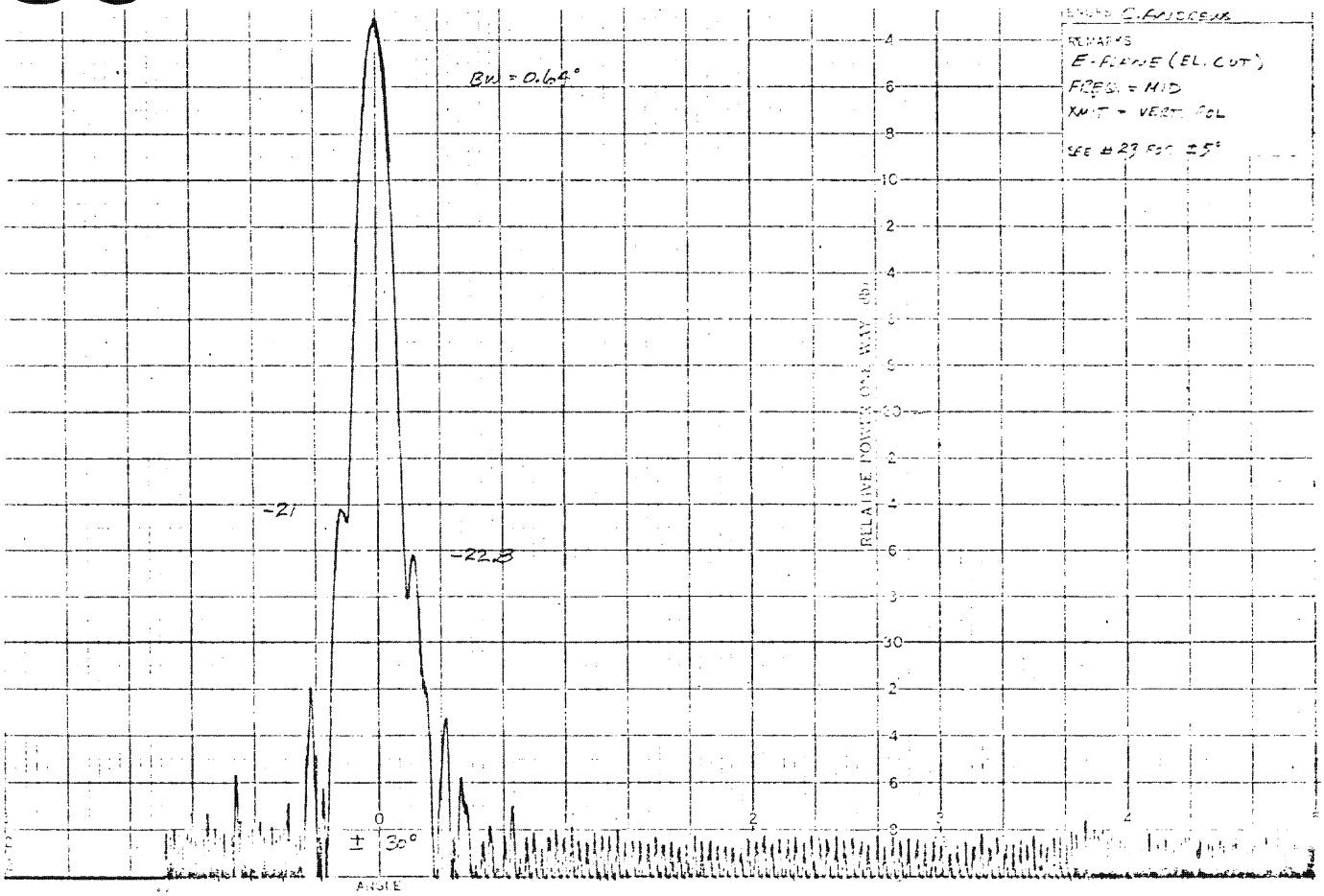


HIGH-GAIN ANTENNA AND FEED

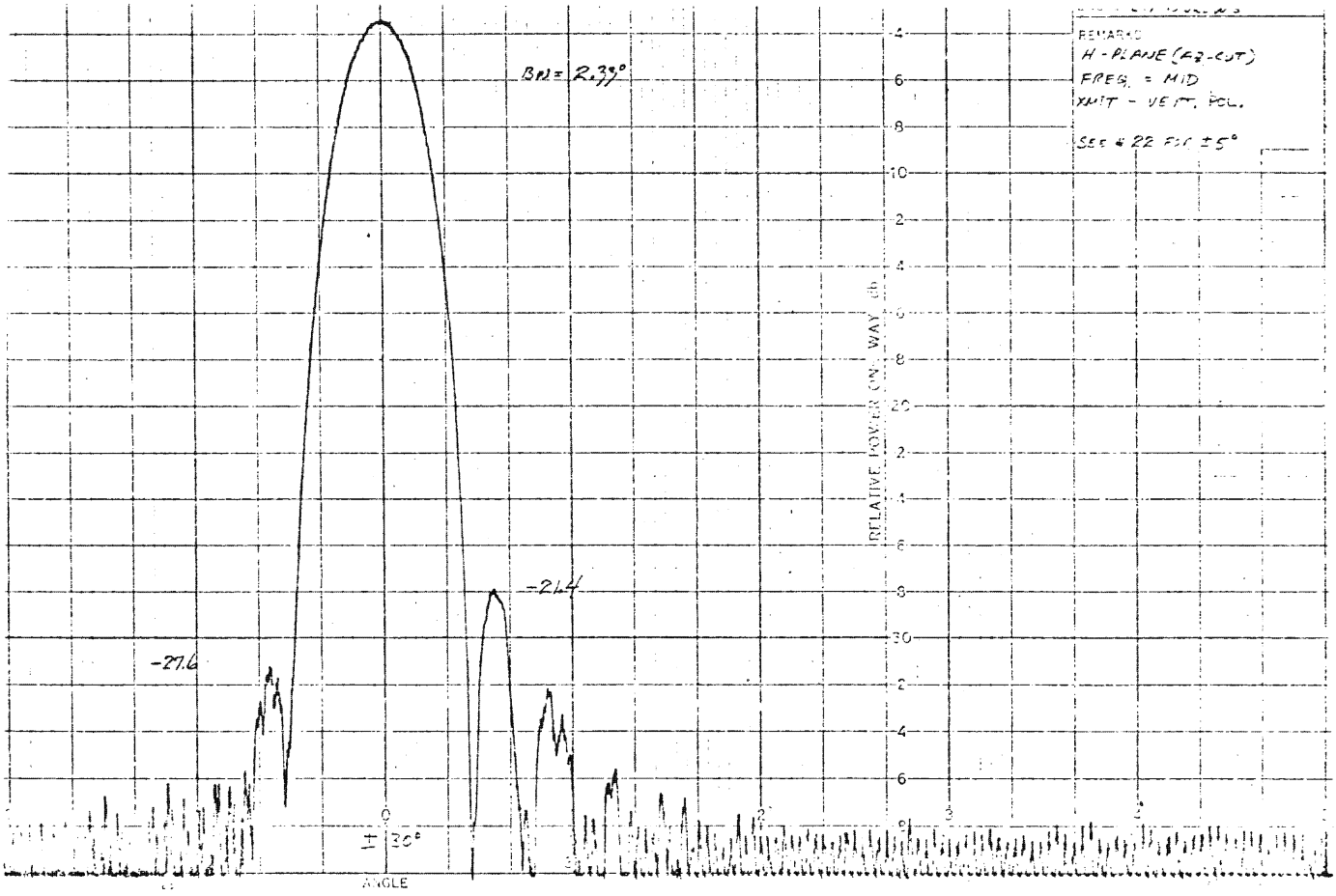
HIGH-GAIN ANTENNA AND PEDESTAL



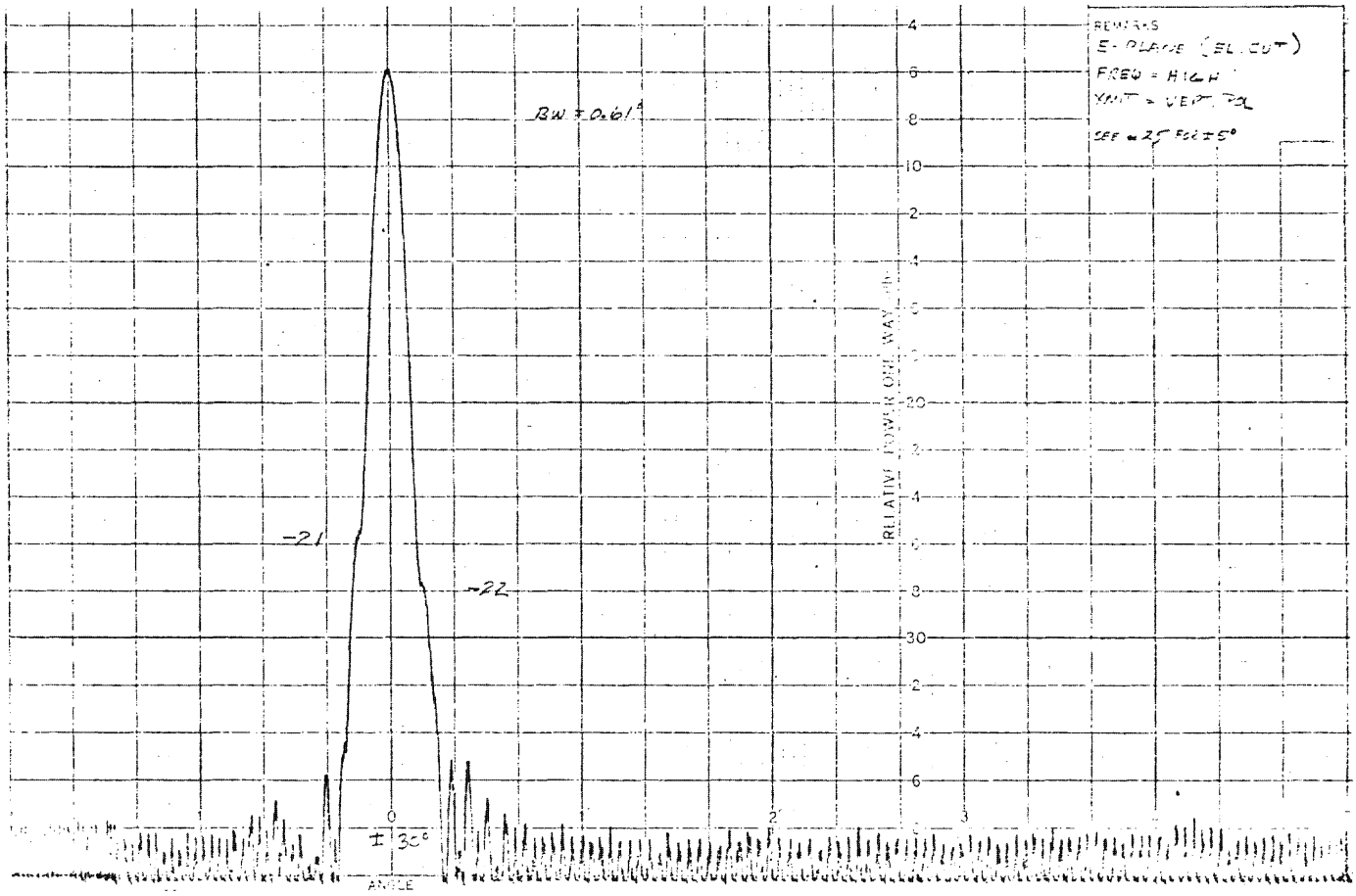
E-PLANE PATTERN, MID FREQUENCY



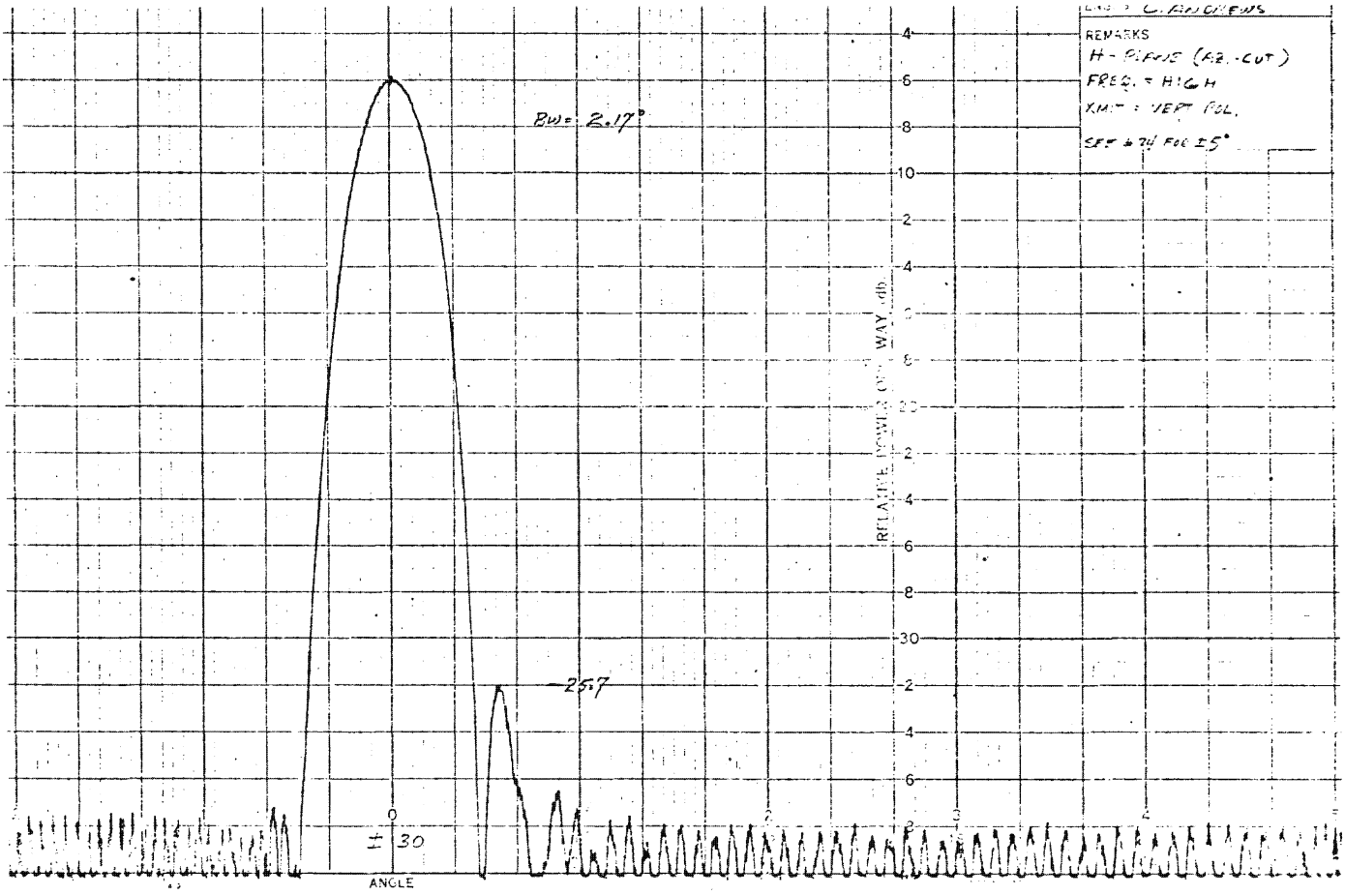
H-PLANE PATTERN, MID FREQUENCY



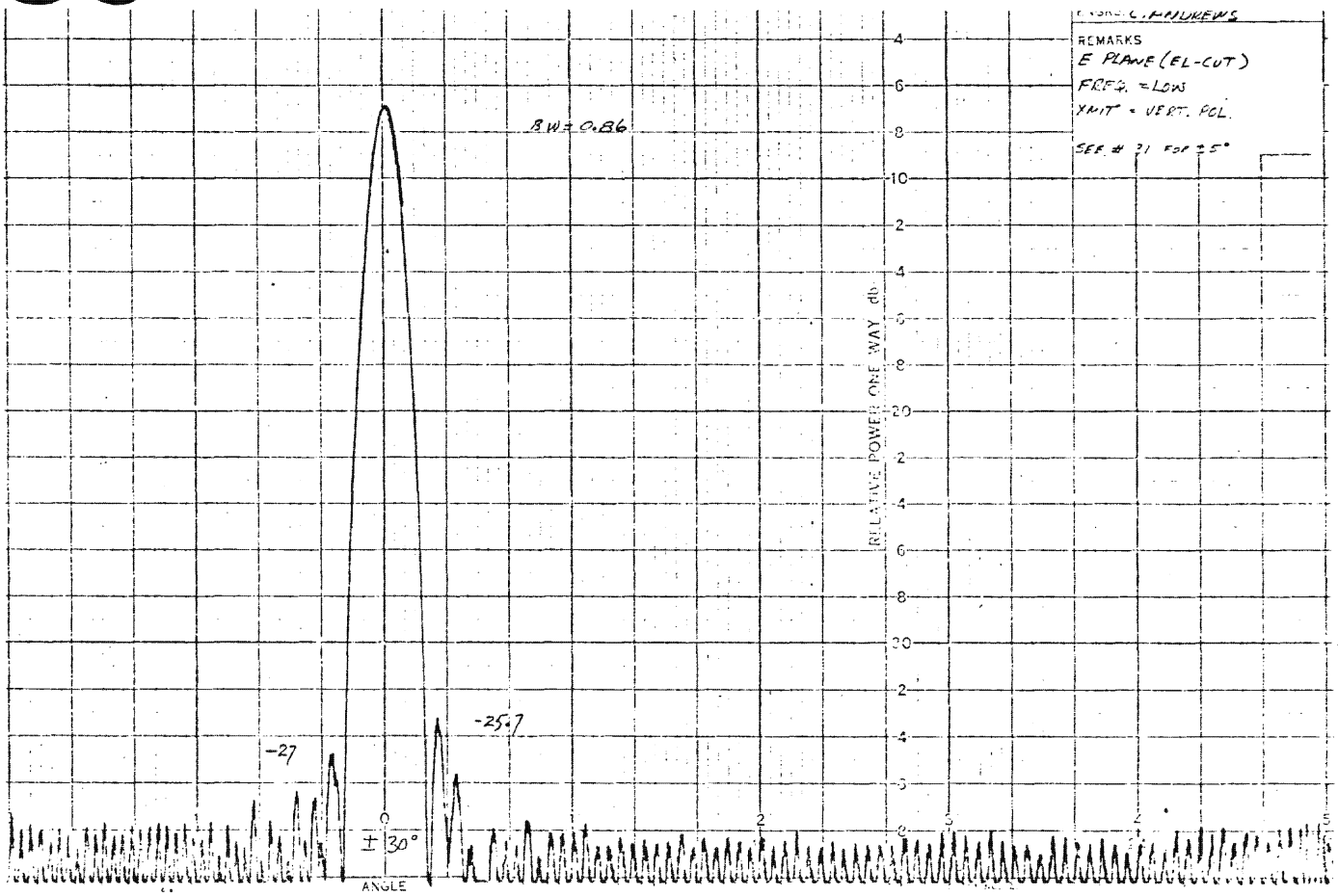
E-PLANE PATTERN, HIGH FREQUENCY



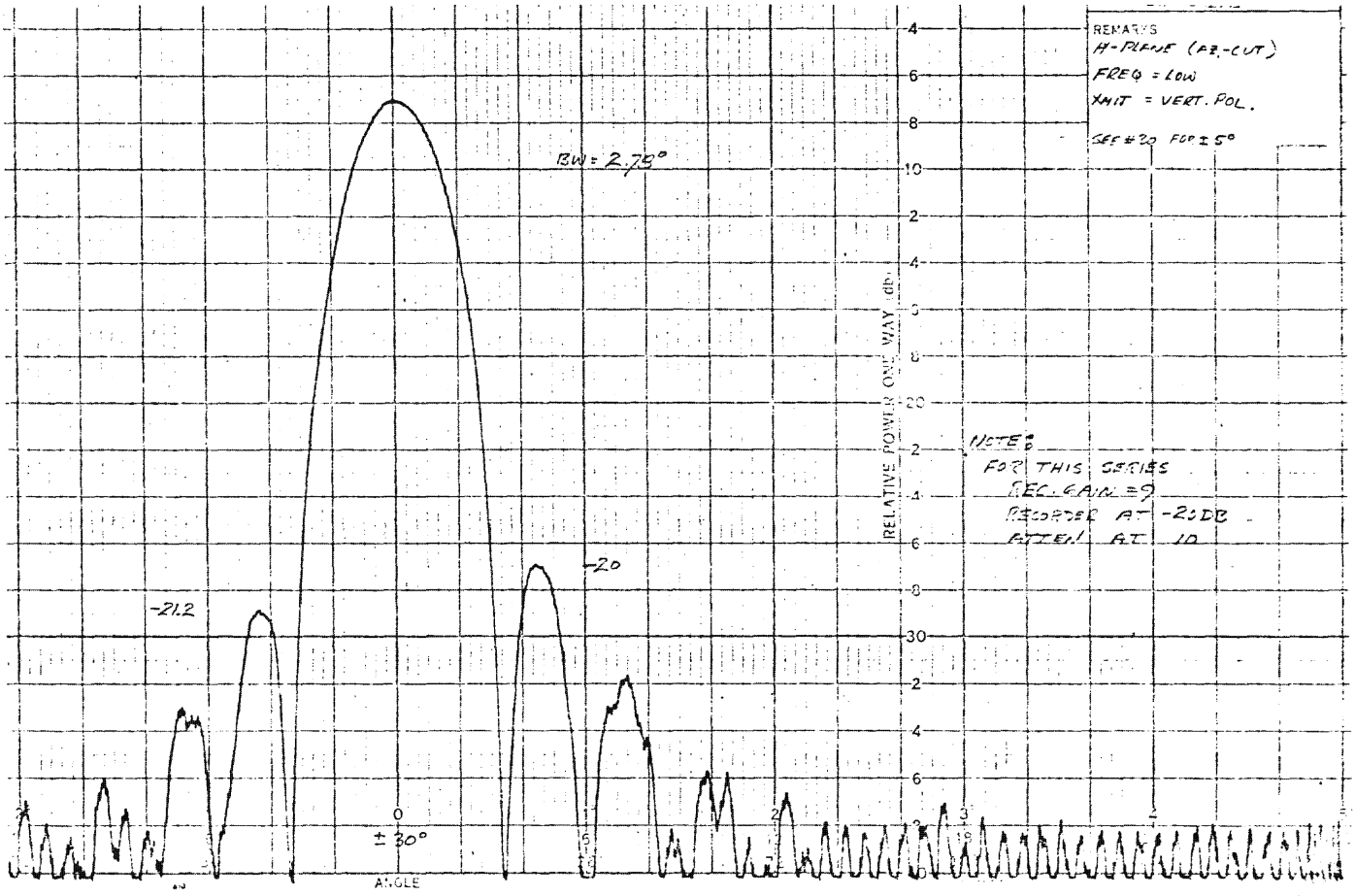
H-PLANE PATTERN, HIGH FREQUENCY



E-PLANE PATTERN, LOW FREQUENCY



H-PLANE PATTERN, LOW FREQUENCY



HIGH-GAIN ANTENNA PERFORMANCE SPECIFICATIONS AND MEASURED DATA

	FREQUENCY (GHZ)		
	26.5	36	40
GAIN SPEC (dBi)	36.1	38.5	39.5
GAIN MEASURED	39.9	43.1	43.7
ADJUSTMENTS TO MEASURED GAIN			
ANT. TX LINE LOSS	0.5	0.4	0.3
ROTARY JOINT LOSS	0.5	0.6	0.6
INTERCONNECT LOSS	0.5	0.4	0.3
BEAMWIDTH CORRECTION	1.4	1.4	1.4
ADJUSTED GAIN	37.0	40.3	41.1
ORIGINAL PREDICTIONS	36.6	39.1	40.1
BEAMWIDTH SPEC	0.6° X 3.0° (MIN)	0.6° X 3.0° (MIN)	0.6° X 3.0° (MIN)
BEAMWIDTH MEASURED	0.86° X 2.78°	0.64° X 2.33°	0.61° X 2.17°

LOW-GAIN ANTENNA REQUIREMENTS AND EXPECTED PERFORMANCE

- HALF POWER BEAMWIDTH: 180° X 7° MINIMUM

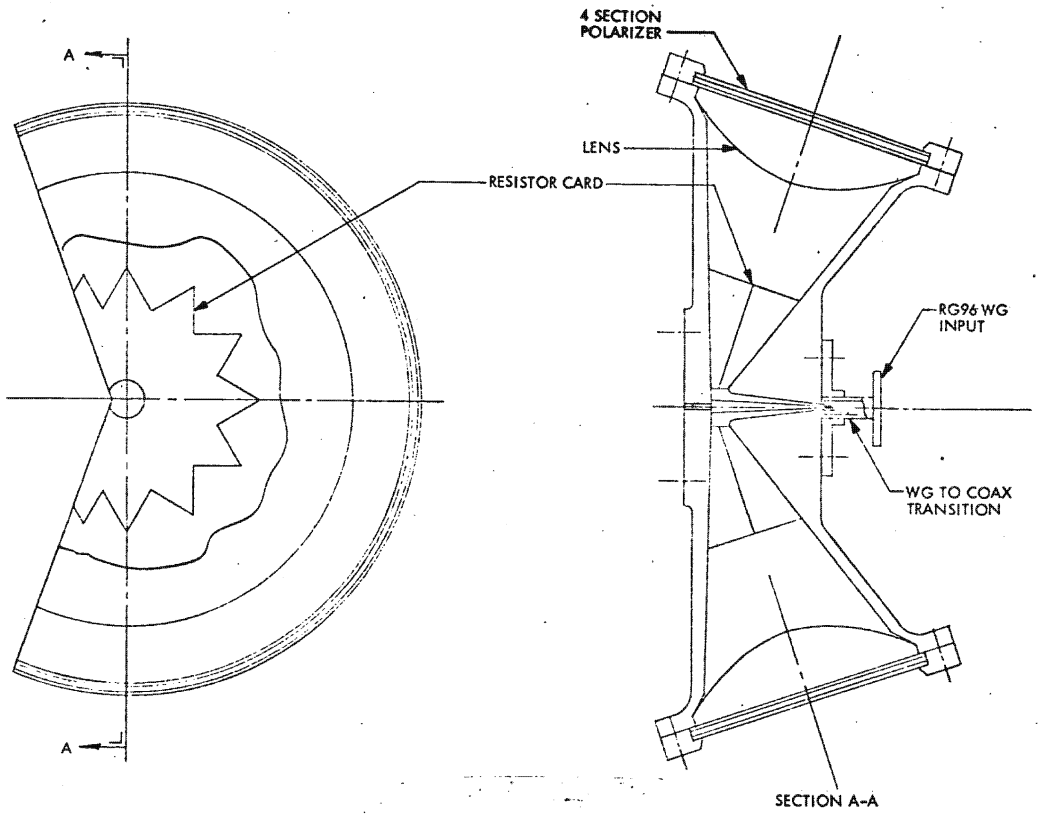
- GAIN (dBi):

	26 GHz		42 GHz	
	MIN	DES GOAL	MIN	DES GOAL
	6.0	6.6	7.5	8.3

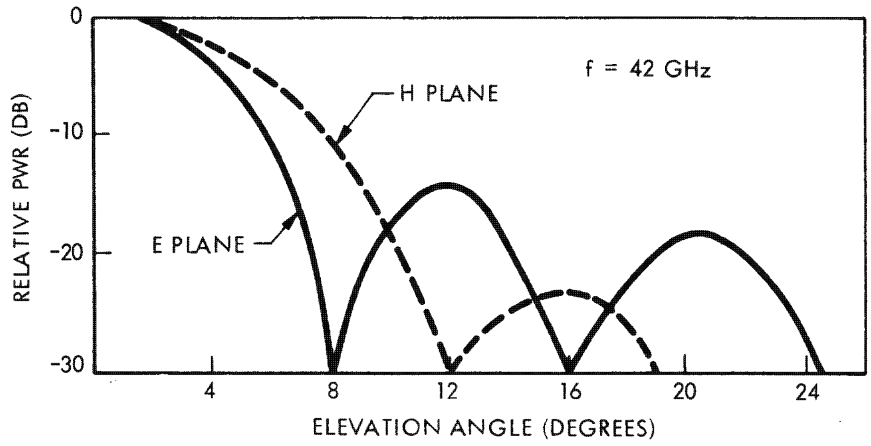
- GAINS BASED ON RESPONSE TO AVERAGE OF ALL LINEAR POLARIZATIONS

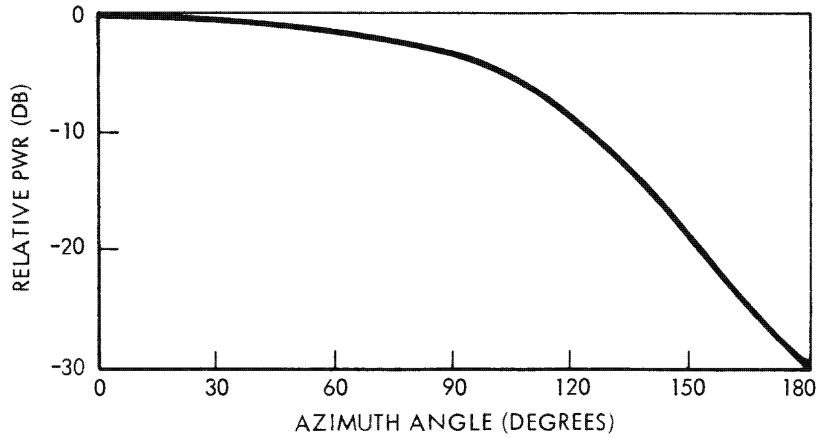
- AXIAL RATIO: { 4 dB MAXIMUM; 3 dB DES GOAL }

LOW-GAIN ANTENNA DETAILS



ESTIMATED LOW-GAIN ANTENNA PATTERNS

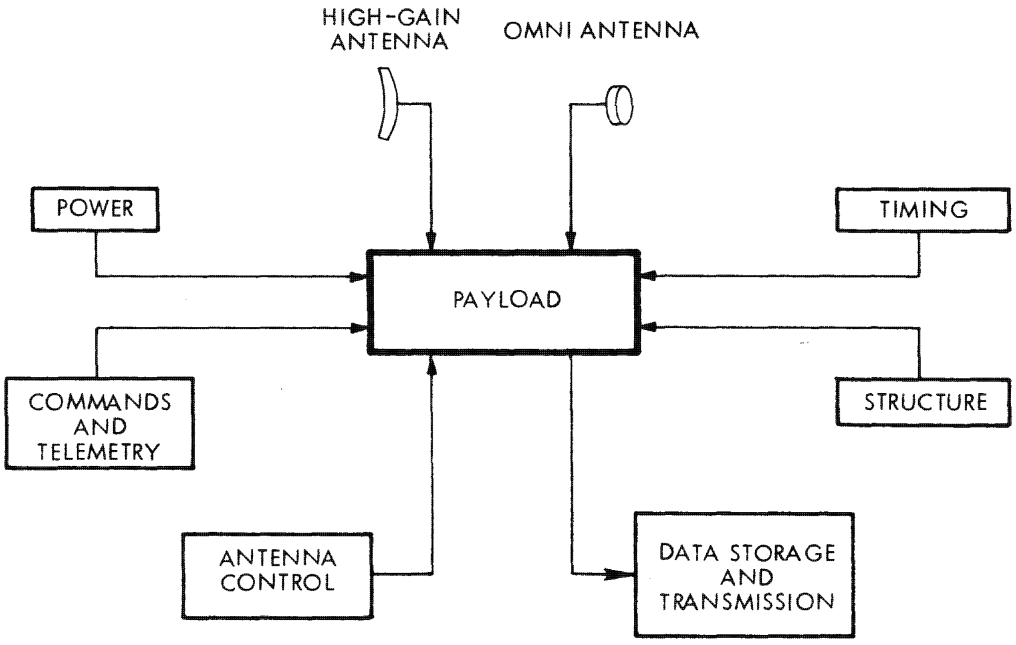




INTEGRATION ACTIVITIES

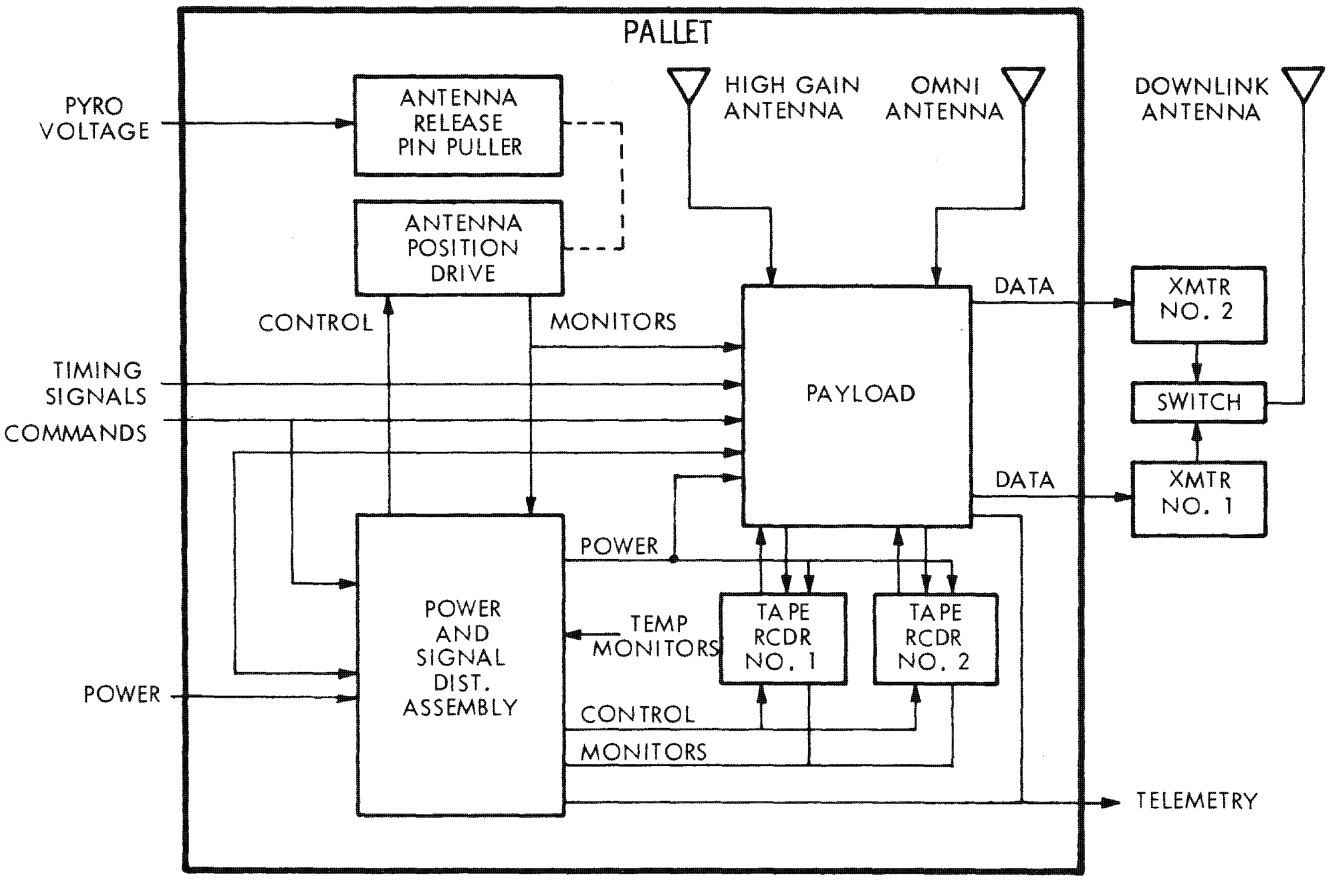
- FLIGHT SUPPORT SUBSYSTEMS
- PALLET INTEGRATION
- HV INTEGRATION

FLIGHT SUPPORT SUBSYSTEMS

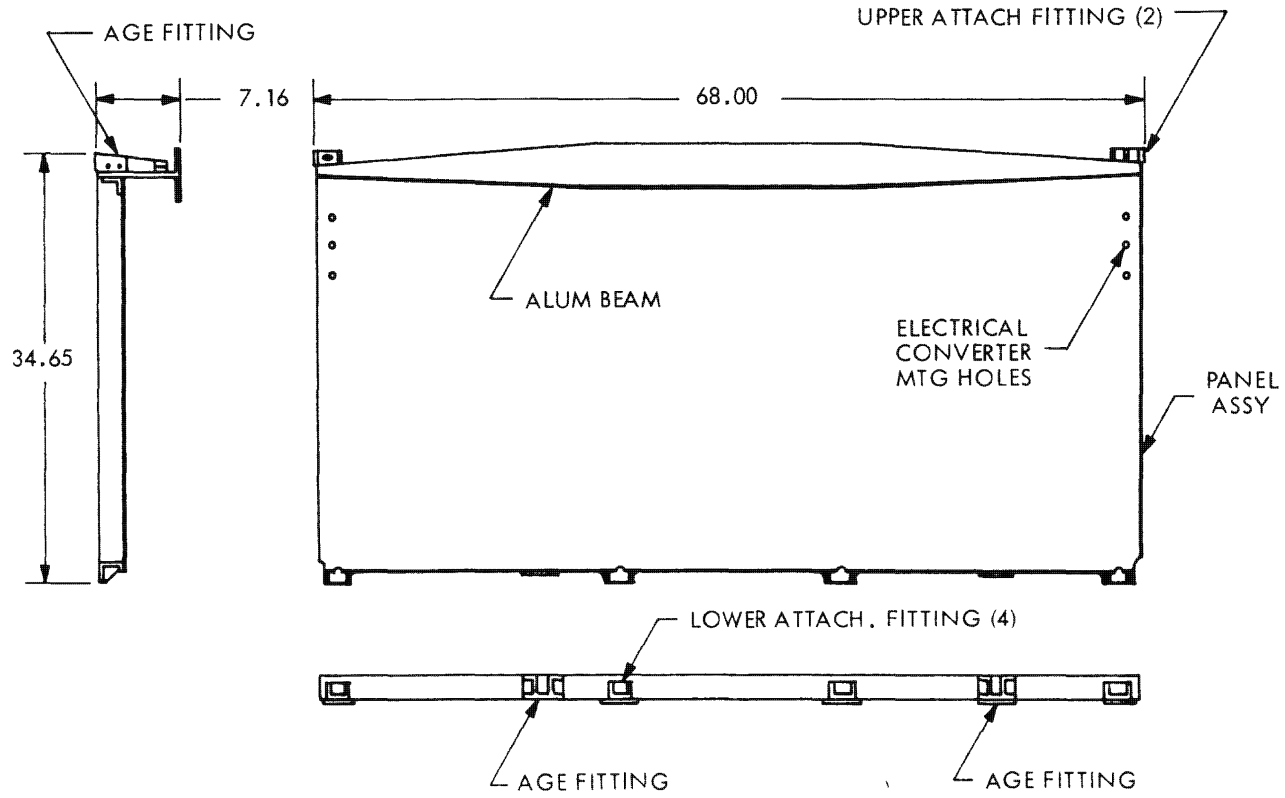


BIF003W/2-122398-77

LORRI SYSTEM BLOCK DIAGRAM



PALLET STRUCTURE



ALL DIMENSIONS IN INCHES

TAPE RECORDER

- SIZE: 7.5 X 7 X 5.25
- WT: 11 LBS
- POWER: 30 WATTS
- FUNCTIONS:
  - RECORD PAYLOAD PCM DATA
    1. TR ONE – 10 MIN 1/2 SPEED
    2. TR TWO – 20 MIN 1/4 SPEED
  - REPRODUCE DATA
- FLIGHT HISTORY: 10 YRS, LIFE PREDICTION IS 3720 TAPE CYCLES

POWER AND SIGNAL DISTRIBUTION ASSEMBLY

- SIZE: 7 X 5 X 8
- WEIGHT: 5 POUNDS
- FUNCTIONS:
  - DISTRIBUTE AND FUSE POWER FOR TAPE RECORDERS, PAYLOAD ANTENNA DRIVE, AND THERMAL CONTROL HEATERS
  - PROVIDE COMMAND LOGIC TO CONTROL TAPE RECORDERS AND ANTENNA DRIVE
  - PROVIDE ELECTRONICS TO POSITION THE HIGH-GAIN ANTENNA
  - PROVIDE SIGNAL CONDITIONING FOR TELEMETRY MONITORS
  - PROVIDE EMI ISOLATION AND FILTERING AS REQUIRED

PALLET INTEGRATION

- COMMAND AND TELEMETRY
- DATA SYSTEM CONCEPT
- WEIGHT PROVISIONS
- THERMAL CONTROL
- ASSEMBLY AND SYSTEM TEST

COMMANDS

	STORED SINGLE OUTPUT	STORED MULTIPLE OUTPUT	REAL TIME	PYRO
COMMANDS ASSIGNED	11	1	3	2
PAYLOAD FUNCTIONS	3 (TURN ON)	1 (RF BAND & MODE SELECT)		
PALLET FUNCTIONS	7 (ANTENNA AND TR CONTROL)	0	3 (TURN TR ON/OFF)	2 (ANTENNA RELEASE)
SHARED	1	0	0	0

STATUS TLM

44 ANALOG	
PAYLOAD	PALLET
32	12

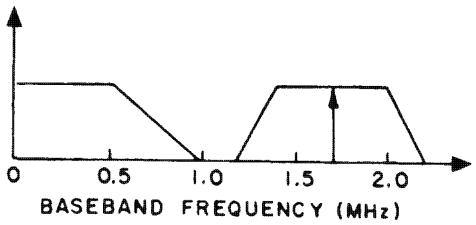
16 DISCRETE	
PAYLOAD	PALLET
0	16

FUNCTIONS	
– VOLTAGE MONITORS – TEMPERATURES – CONFIGURATION MONITORS	– ANTENNA POSITION – POWER – TEMPERATURE

FUNCTIONS
– EVENTS – ON/OFF STATUS

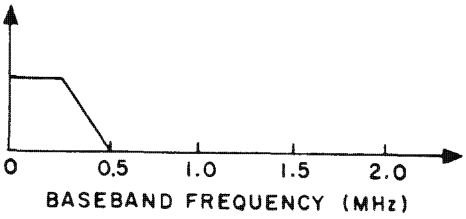
DATA SYSTEM FORMATS

ASGLS FORMAT



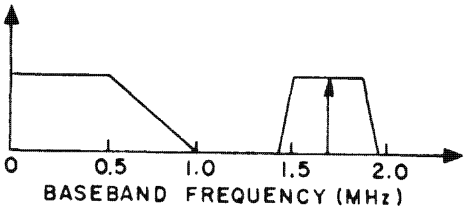
512 kB/sec RECORDER 4:1
256 kB/sec RECORDER 2:1

SGLS FORMAT



256 kB/sec RECORDER 2:1

DIRECT TRANSPOND FORMAT



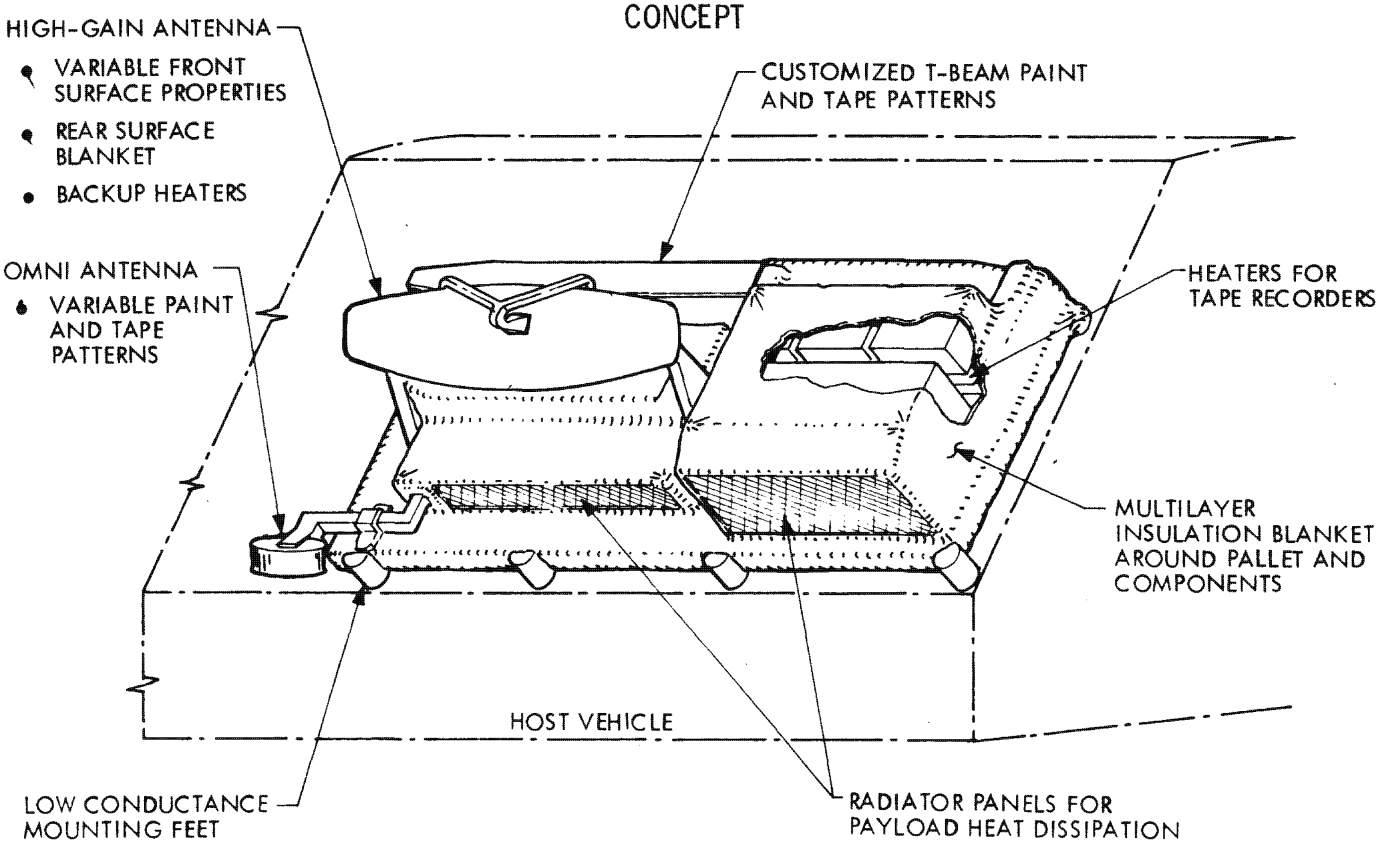
512 kB/sec RECORDER 4:1
128 kB/sec DIRECT TRANSPOND

WEIGHT SUMMARY

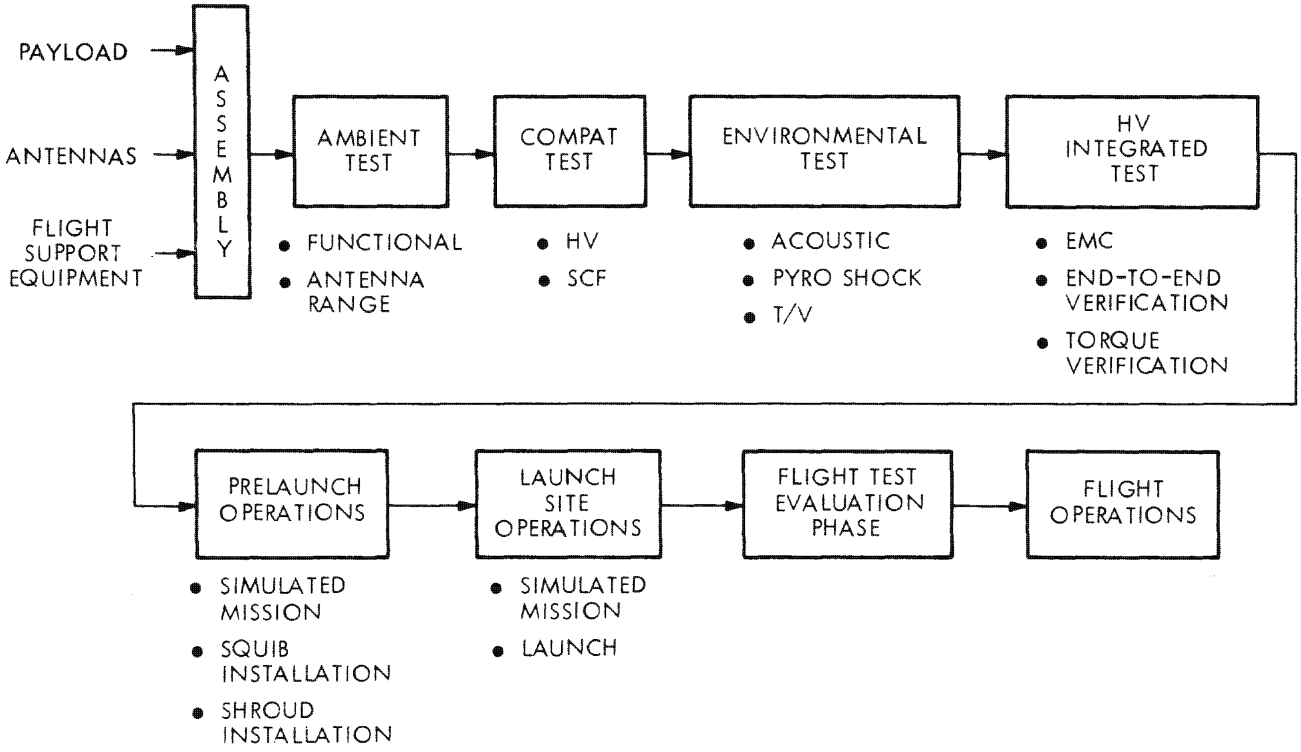
	WEIGHT (LBS)
• PAYLOAD	165
• ANTENNAS AND OTHER PALLET EQUIPMENT	75
TOTAL	250

THERMAL CONTROL

CONCEPT



TEST FLOW



HOST VEHICLE INTEGRATION

- MECHANICAL
- ELECTRICAL
- POWER CONSTRAINTS
- ASSEMBLY AND TEST REQUIREMENTS
- OPERATIONAL DATA FLOW

PALLET/HV INTEGRATION

MECHANICAL

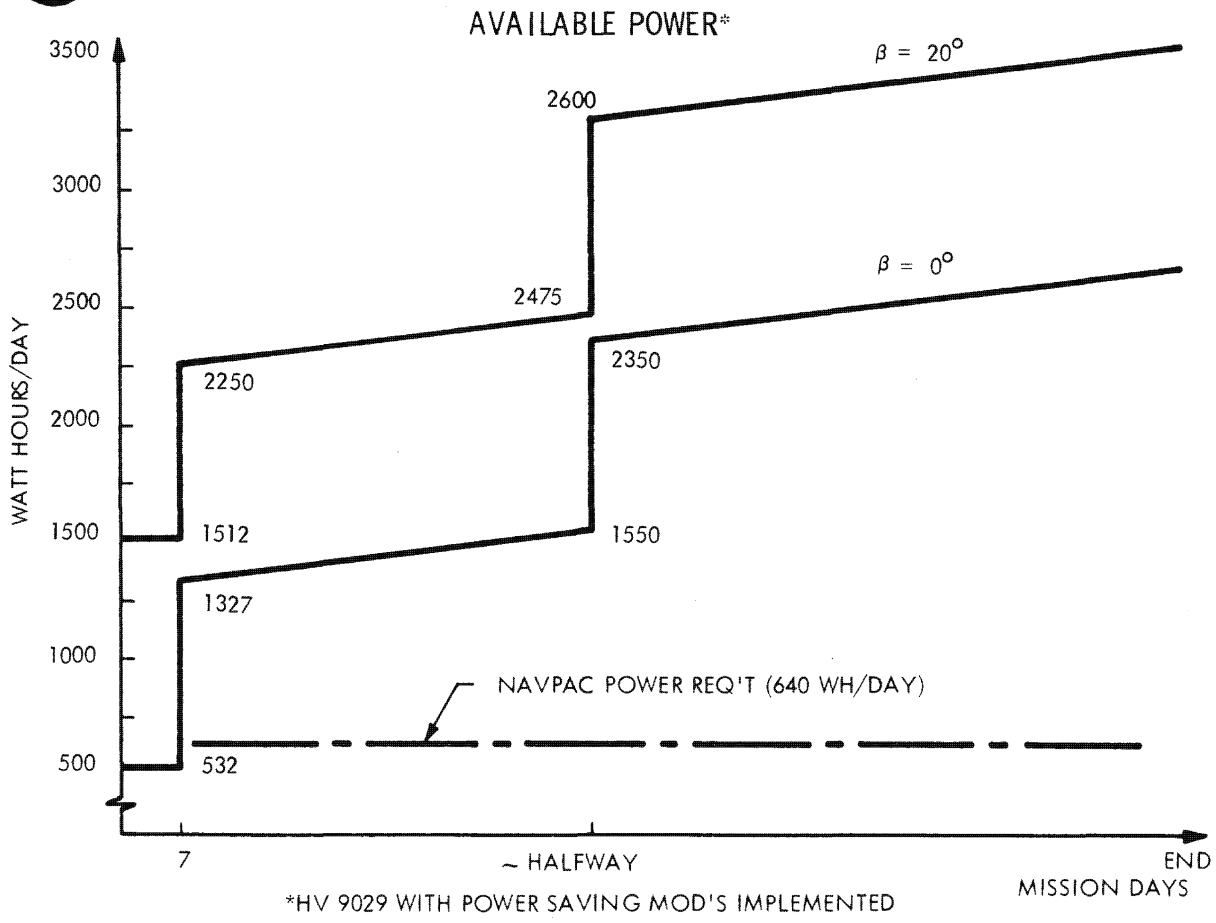
- HV MAGIC CIRCLE SPACE LIMITATIONS
- AVOIDANCE OF HV KEEP-OUT ZONES
- WEIGHT LIMITATION: 235 LBS (NORMAL) EXCLUDING PALLET
- MISSION PECULIARITIES
  - DRAG DUE TO RELATIVELY LOW ORBIT
  - PERIODIC ORBIT ADJUSTMENTS
- DYNAMIC INTERACTION WITH HV
  - DURING ASCENT
    1. GREATER THAN 50 LBS EFFECTIVE MASS, FUNDAMENTAL FREQUENCY MUST BE GREATER THAN 50 HZ
    2. LESS THAN 50 LBS, FUNDAMENTAL FREQUENCY CAN BE LESS THAN 50 HZ BUT WILL SEE HIGHER LOADS
  - ON ORBIT:
    1. EFFECT ON HV GAS CONSUMPTION AND ATTITUDE CONTROL ACCURACY
    2. ALLOWABLE INTERFACE MOMENTS (AS FUNCTION OF STEPPER PULSE RATE) DEFINED
    3. MOMENT-TIME HISTORY OF DRIVES MUST BE VERIFIED BY TEST
- THERMAL ISOLATION FROM HV REQUIRED
- PALLET MUST BE DESIGNED FOR ASCENT AND ORBITAL HEATING
- PALLET MUST BE COMPATIBLE WITH OTHER HV ENVIRONMENTS (LOAD FACTORS, ACOUSTIC, PYRO SHOCK)

PALLET/HV INTEGRATION

ELECTRICAL

- LIMITED AVAILABILITY OF 28 V UNREG DC POWER
- COMMANDING VIA HV ECS
  - NO. OF COMMANDS AVAILABLE AT PALLET INTERFACE LIMITED
  - TYPES OF COMMANDS AVAILABLE
  - OPERATIONAL LIMITATION: APPROXIMATELY 30 CMDS PER HV REV
  - HOST PREFERS ONLY TWO COMMAND LOADS/DAY
- SYSTEM TIMING
  - HV TIME WORD (24 BIT, UPDATED EVERY 200 MSEC)
  - 5 PPS – 50 USEC
- TELEMETRY
  - HEALTH AND STATUS CHECKS VIA HV PCM (16 DISCRETE PLUS 44 ANALOGS)
  - ALL PAYLOAD DATA VIA TIME-SHARED DOWNLINK
    1. ASGLS MODE: APPROXIMATELY 36 MIN/DAY READOUT AT 2-MHZ BW
    2. ALTERNATE MODE: APPROXIMATELY 75 MIN/DAY READOUT WITH:
       A. 2-MHZ BW (ASGLS STATIONS)
       B. 700-KHZ DEV. P-P (TTS ONLY)
- EMC – HV-PECULIAR REQUIREMENTS MUST BE MET

PALLET/HV INTEGRATION



*HV 9029 WITH POWER SAVING MOD'S IMPLEMENTED

PALLET/HV INTEGRATION

ASSEMBLY AND TEST REQUIREMENTS

- HOST PROGRAM PALLET (MODULE) LEVEL TEST
  - VERIFIES FUNCTIONAL COMPATIBILITY USING HOST PROGRAM AGE SIMULATING HV
  - VERIFIES SCF COMPATIBILITY THROUGH FORD AEROSPACE/DTF
- PRELIMINARY MATE AND HV LEVEL EMC TEST
  - VERIFIES ADEQUATE EMC MARGINS EXIST (CONDUCTED/RADIATED INTERFERENCES, PAYLOAD SUSCEPTIBILITY, ETC.) FOR NORMAL ON-ORBIT MODES
- FINAL PALLET MATE
- INTEGRATED PALLET/HV SYSTEM TEST
  - SIMULATED MISSION – END-TO-END TEST
  - OPEN LOOP RADIATION USING PALLET DOWNLINK
- FINAL CLOSEOUTS AND SHROUD INSTALLATION
- LAUNCH COUNTDOWN TEST
  - NO OPEN-LOOP RADIATION UNDER SHROUD
  - HEALTH AND STATUS CHECKS VIA HV PCM

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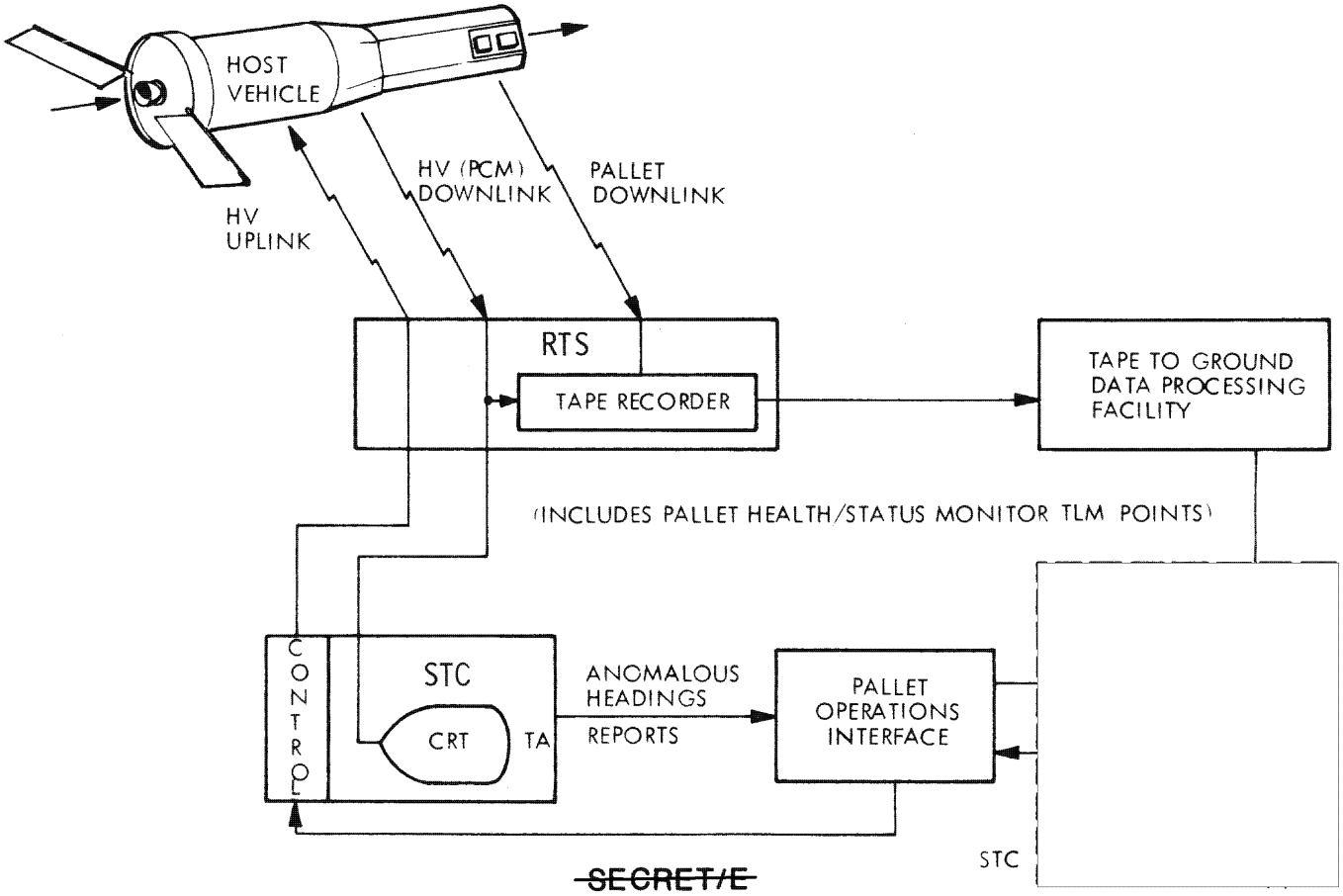
BIF003W/2-122398-77

PALLET/HV INTEGRATION

OPERATIONAL DATA FLOW



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OPERATIONS AND GROUND DATA PROCESSING

- OPERATIONS
- GDPS DEVELOPMENT
- OUTPUT PRODUCTS

MISSION PLANNING

DISTINGUISHING CHARACTERISTICS VIS-A-VIS P989

- SHORT DURATION MISSION (6 MOS)
- ACCURATELY FOREKNOWN TARGET COVERAGE
- RELAXED TIMELINE
- CONTINUOUS HOST VEHICLE INTERFACE
  - PRELAUNCH PHASE: PREPARE THE PLAN – ONCE
  - OPERATIONS PHASE: SELECT TASKS & FORMAT COMMANDS – DAILY

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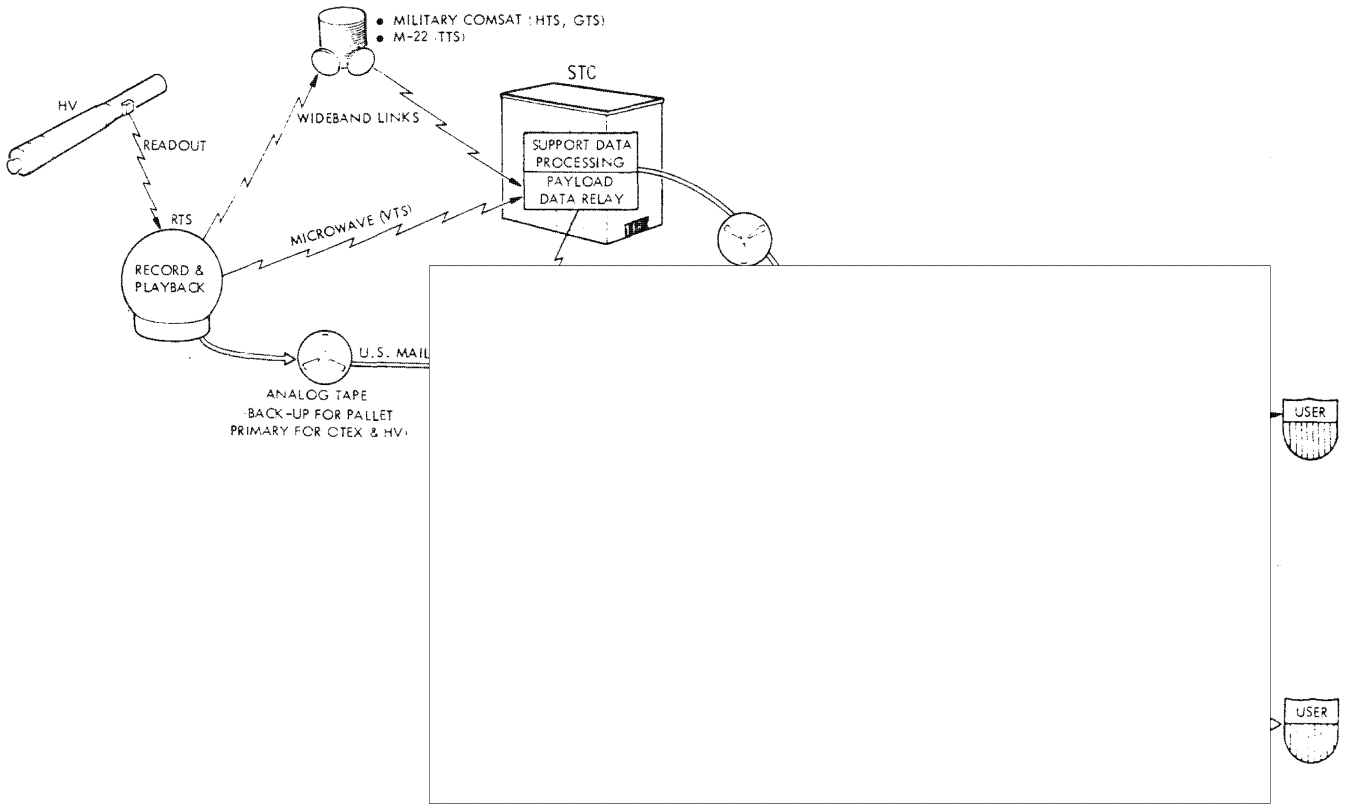
LORRI PAYLOAD/SUPPORT DATA FLOW



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LORRI INTELLIGENCE PRODUCTS

1. SIGNAL REPORTS (ELECTRICAL TRANSMISSION)
   - ANALYST – DERIVED FROM QUICK-LOOK ANALYSIS, SINGLE INTERCEPT
   - EMITTER PARAMETERS
     - RF & AMPLITUDE
     - PRF & PULSEWIDTH (PULSE SIGNALS ONLY)
   - GEOLOCATION (DF INTERCEPTS ONLY)
     - LINE OF POSITION, BORESITE INTERSECTION,
   - HV LOCATION DURING OMNI INTERCEPTS
   - ASSIGNED IDENT (PER USER SPECIFICATION)

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2. SIGNAL ANALYSIS REPORTS (HARDCOPY)
   - DERIVED FROM DETAILED OFF-LINE ANALYSIS, MULTIPLE INTERCEPTS
   - EMITTER PARAMETERS & GEOLOCATION
   - ANALYSIS
     - RADIOMETER LEVEL PLOTS
     - COMPARISON WITH IN-LINE PROCESSING

SUMMARY OF LORRI COLLECTION SYSTEM FEATURES

- CONTINUOUS FREQUENCY COVERAGE (26-42 GHZ)
- WIDE INSTANTANEOUS BANDWIDTH (4 GHZ)
- SIMULTANEOUS PULSE AND CW SEARCH
- SIMULTANEOUS MINOR LOBE AND MAINBEAM SEARCH
- HIGH SENSITIVITY
- EMITTER LOCATION
- PULSE AND CW SIGNAL PARAMETERS MEASUREMENTS

BIF003W/2-122398-77

LORRI SCHEDULE AND MILESTONES