



A general-purpose digital computer system performing complex real-time computing and control operations, this Kearfott-designed equipment, originally produced for automatic navigation in the C-141 aircraft, quickly demonstrated its adaptability to other applications including space guidance and control as the GPK-33.

Consisting of a compact general-purpose computer, control and display elements, input/output equipment signal conditioners, and power supplies, this system logically processes multiple inputs systematically and in a time-span that is virtually instantaneous to produce outputs useable as automatic control signals or as easily interpreted visual data.

Inherent flexibility of design readily accommodates computational and growth changes through use of standardized ground support equipment, and computer compatibility with a wide variety of applications is assured.

Among the many superior features of the general-purpose digital computer unit of the AN/ASN-24(V) is the nature of its programming. With simple techniques, and without any physical modifications, the computer can be programmed to perform an exceptionally large variety of functions. These programs can be quickly altered in the field, when necessary, to account for changes in system hardware, accuracy requirements, or performance parameters.

For each new application of the AN/ASN-24(V), a new program set is assembled from the existing library of routines. This set is especially tailored to produce the prescribed solutions, with prescribed accuracies, as called for by the system equations. After a program has been composed, tested, and fielded, it will be used frequently. Thus, special care is taken to develop it to a state of high efficiency in terms of both solution rate and utilization of memory space.

AN/ASN-24(v)

Airborne/Aerospace Computer Set

CHARACTERISTICS (Basic System)

Weight (includes computer, converter chassis, power supply, set control, Lat-Lon range bearing along/cross track, and celestial data control indicators): 111.3 lbs.	
Volume (entire system):	1.9 cu. ft.
Pulse Input Channels:	4
Power Requirements:	115 volts, 400 Hz, 3 phase, 368 watts 28 volts dc, 33 watts 5 volts, ac/dc, 6.5 watts 26 volts, 400 Hz, 16 watts
Environment: Temperature, Humidity, Vibration Altitude Cooling	Per MIL-E-5400, Class 2 Sea Level to 70,000 ft. Forced air (ARINC 404)
Configurations: Present position, ground velocity, wind velocity, course and distance, along-track, cross-track, air drop, vertical navigation, and general navigation	
Drum Memory Capacity: Drum Memory Permanent Storage Capacity: Drum Memory Temporary Storage Capacity: Signator Section: Timing and Arithmetic Registers: Clock Frequency: Word Time: Operand Format:	99,600 bits, 6000 rpm 60 tracks, 3840 words 4 tracks, 256 words 2 tracks 4 tracks 160 KHz 156.25 microsec Fixed-point, 25 bits, 2's complement
Instruction Format: one + one address operation code operand address next instruction address	25 bits 3 bits 11 bits 11 bits
A/D Conversion:	Up to 18 servo modules (electromechanical)
Displays: Latitude, longitude, range, bearing, cross-track, along-track, wind direction, wind speed, celestial angle, air drop, cruise control, and vertical navigation	
Applicable Specifications:	MIL-C-27618, MIL-C-6781B, MIL-E-5400E, MIL-I-6181D, MIL-T-5422E, MIL-R-27542, MIL-STD-704, ARINC 404, ARINC 407-1

FEATURES — • Compact, lightweight, accurate synchronous binary digital GP computer design • Centralized digital computation — processes thousands of calculations, decisions, commands per second • Self-checking • Versatile, flexible for growth potential • Easily installed and maintained • Has magnetic drum memory and an independent programmable high-speed incremental integrator • Eight basic orders include ADD, SUBTRACT, MULTIPLY and DIVIDE • Accepts digital signals from self-contained A/D con-

version equipment, control panels, and from pulse inputs • Modularly designed with digital discrete input/output circuit components • Functionally flexible — performance proved over long-term WADC evaluation • Officially recommended as standard “off-the-shelf” computer hardware • Self-contained power supply • Quickly, easily modified for Transport aircraft, Reconnaissance/Strike aircraft, missile, booster, spacecraft, VTOL/STOL aircraft, attack weapons control, camera control, and many other possible applications.

TYPICAL APPLICATIONS AND VARIATIONS

C-141A LOGISTICS TRANSPORT APPLICATION • Computes, displays aircraft position from heading data, air data computer and Doppler • TACAN, LORAN, sextant, and radar inputs update position • Furnishes continuous flight information on range-to-go, destination bearing, wind speed, ground speed, ground track, present position, along-track and cross-track deviations, air drop, climb and descent

