

arctec|systems

9104 Red Branch Road
Columbia, Maryland 21045
(301) 730-1237

7 February 1985

Dear Fellow Robot Enthusiast:

Imagine for a moment what it would be like to have a personal robot that can find its way around your house without your help and recharge its own batteries when they are low. Imagine this robot finding its way to your bedroom in the morning and giving you a wake up call and, at your verbal command, a list of reminders for your day. Imagine having a robot that can guard your house day or night while you are away and call you on the phone if it discovers something wrong.

Imagine having a robot with three onboard computers, a 40 character by 8 line liquid crystal display, full function cordless keyboard, an advanced BASIC control language, easy to use timed task scheduler program, 3-1/2 inch disk drive, advanced voice recognition system with dynamic learning feature, four-wheel drive propulsion system, nine ultrasonic navigation collision avoidance sonars, and a complete suite of sensors and peripherals. Imagine all of this hardware and software integrated by an artificial intelligence operating system which gives the robot continuing life.

If this sounds far-fetched to you, I can understand why. We have been told lots of stories about personal robots. Such things as "this robot can vacuum floors" when we know it can't even pull itself over a door sill or a shag rug. Or "our robot is equipped with an intricate arm" that we know can't do anything practical. Or "you can teach our robot to follow a path" when we know it can't repeat that path.

So I have a problem. Our company, Arctec Systems (which was formerly Micromation) has spent two years designing a robot, named GEMINI, that can do the things I said above. How can I convince you that we can deliver what we advertise?

To begin with, our design team is the same team that designed such quality peripherals for HERO as the MEMCOM board (memory expansion and communications) which allows you to "intelligently" program that robot. We also brought you the first (and so far the only) speech recognition and voice command system for a personal robot. Our team consists of a group of graduate engineers and experienced technicians, not just in the field of electronics, but also in the fields of mechanical engineering, structural engineering, control systems engineering, and computer science. In short, a real robotics engineering team.

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In addition, the Arctec group of companies has 14 years of engineering experience. Our remote data acquisition systems that function at 40 degrees below zero in the Arctic use microcomputers and battery power systems similar to those in GEMINI. And our experience designing radio telemetry links that transmit data back from the Arctic was used in designing GEMINI's radio system.

Please look over our brochure. We think you'll like GEMINI. As you read through the brochure, you may wonder, "Why no arm?". Well, we considered one, but quite frankly, we could not come up with a design that was worth anything without costing as much as this entire robot. Furthermore, we believe an arm on a mobile robot is useless without a vision system. And vision systems would only have further increased the cost. So being realistic, we postponed the arm because it would have been as useless as the arms on all of today's personal robots.

We concentrated our efforts instead on self-navigation, self-charging, mobility and an integrated, artificial intelligence operating system. The result, we think, is a second generation personal robot without equal.

We are offering the robot for sale in three basic forms along with several exciting options. First, the robot is available in a fully assembled form. This allows you to immediately place the robot in use and also provides the lowest overall cost.

Second, the robot is available in a modular, "subscription" form. You subscribe to purchase the robot and it will come to you in three pre-assembled modules consisting of the "BASE MODULE", "BODY MODULE" and "LIFE MODULE". This subscription form of purchasing the robot allows you to learn as you buy and spread the cost over an extended time period.

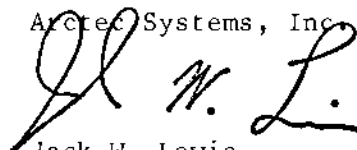
Third, the robot is available for purchase as separate modules. You only need commit to the purchase of one module so your cost obligations are minimized. The complete robot will, however, cost you somewhat more if purchased in this manner.

There are also a number of options for the robot that greatly enhance its utility. These options include interfaces and cross assemblers for the APPLE II and IBM-PC computers for third party software/hardware developers.

We are dedicated to GEMINI and its future. We are already busy working on additional peripherals and software that will amaze you. But you will only hear about these products when they are truly ready.

Sincerely yours,

Arctec Systems, Inc



Jack W. Lewis
President

PRODUCT DESCRIPTIONS

GEMINI BASIC ROBOT - The Gemini Basic Robot comes ready for NAVIGATION, OBSTACLE AVOIDANCE, SPEECH and SOUND GENERATION, and VOICE RECOGNITION. Its ARTIFICIAL INTELLIGENCE named LMOS (for Life Mode Operating System) and SCHEDULER are two of its advanced programs. It also includes sensors for temperature, motion, and light, a real-time clock, hardware random number generator, 8-bit A/D channels, a 40 character by 8 line adjustable angle LCD, an UNPARALLELED 3 on-board computers with CMOS Rockwell 65C02's for true MULTITASKING and a 56K RAM/ROM expansion card. The charger, 2 room beacons and 2 door edge reflectors are also supplied. Both a User's Guide and a Technical Reference Manual complete the package.

\$6495.00

GEMINI EDUCATIONAL SYSTEM - The Gemini Educational System includes the Basic Robot and the Keyboard (can be used either infrared or direct connect), Full Floating Point BASIC, VOCOL, 56K RAM and the Smoke Detector.

\$6995.00

INFRARED/DIRECT CONNECT KEYBOARD - Store Gemini's full function keyboard conveniently on a shelf right below the LCD. Use with the INFRARED transmitter or telephone handset cord. Contains an HD6303 Microcomputer with 2K ROM and 128 bytes of RAM. Rechargeable batteries.

\$259.95

WAFER TAPE DRIVE - Up to 128K bytes of storage on this ENTREPO endless wafer tape. Comes with TOS, our Tape Operating System. Fast and convenient.

\$179.95

INFRARED MOTION SENSOR - Located in Gemini's head, it detects heat and motion. Good for added security.

\$119.95

ROOM BEACONS - Attractively packaged infrared room beacons expand Gemini's world. Active infrared transmitters. One needed for each room.

\$49.95

DOOR EDGE REFLECTOR - Identify the doors for Gemini with these passive infrared reflectors. Two needed per door.

\$4.95

BAROMETER - With a barometer and a little creative software you can develop an EXPERT WEATHER SYSTEM. Gemini can predict the weather for you by monitoring the trends in barometric pressure.

\$84.95

LIFE LITES - Gemini's Heartbeat! Located in its chest, just like ours. Hours of enjoyment.

\$49.95

SMOKE SENSOR - Monitors visible and non-visible particles in the air. UL approved.

\$39.95

FLOATING POINT BASIC - Gemini's full floating point scientific BASIC includes robot commands like SPEAK, MOVETO, HOME, and MORE. There's nothing like it.

\$149.95

VOICE COMMAND LANGUAGE - Allows up to three users to command the robot. This may be used in either immediate or deferred mode. Continuous adaptive learning by the robot.

\$129.95

SECURITY PROGRAM - Feel secure when you're away from home with Gemini on GUARD. Preventive monitoring and/or action taken if intruders are found.

\$99.95

8K CMOS STATIC RAM - Read and Write Memory expansion - 6264LP12. \$39.95

8K CMOS EPROM - Read Only Memory expansion - 27C64. \$39.95

GEMINI SOFTWARE LISTINGS - Well commented and easy to read.

Monitor ROM Listing	\$39.95
Navigation ROM Listing	\$39.95
Supervisor/Demo Listing	\$39.95
Scheduler Program Listing	\$39.95
Voice Command Language Listing (VOCOL)	\$39.95
Security Program Listing	\$39.95
Propulsion Controller Listing (PROCON)	\$19.95

MANUALS - Set of two.

USER'S GUIDE - Easy to understand User's Guide. Meet Gemini step by step, from unpacking through using the Scheduler, Voice Recognition and BASIC software.

TECHNICAL REFERENCE - Know Gemini inside and out. A complete guide to its HARDWARE and SOFTWARE, including circuit diagrams and software "hooks".

\$74.95

APPLE/GEMINI COMMUNICATOR - Complete hardware and software for parallel data communications. Great for third party software developers. 6522 VIA with 2K ROM.

\$159.95

S-C MACRO ASSEMBLER - 6502 Assembler with 29 commands including a convenient EDIT command with 15 subcommands. Twenty assembler directories provide all features necessary for professional software development. Requires 32K RAM. Apple II, II+ and IIe.

Version 1 - \$80.00

Version 2 supports 80 column card and is for the IIe and IIc. \$100.00

65C02 CROSS ASSEMBLERS - Supports all additional op codes available for programming.

Version 1 - \$32.50

Version 2 - \$50.00

PRICES EFFECTIVE 2/1/85 * PRICES SUBJECT TO CHANGE WITHOUT NOTICE

9104 Red Branch Road
Columbia, MD 21045
(301) 730-1237

ORDER # _____

DATE _____

SALESPERSON _____

ORDER FORM

=====

PLEASE PRINT

NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

TELEPHONE () _____ () _____

* SHIPPING ADDRESS IF DIFFERENT

NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

FOR SALES USE ONLY

METHOD OF PAYMENT

CASH OR CHECK

Cash and Certified checks or equivalent will be processed immediately.
Personal checks will be held 7-10 working days in order to clear.

COD (U. S. Addresses Only)

Send 15% deposit, check or money order with order. Balance due and COD fees payable by cash, money order or certified check upon delivery.

MASTER CARD VISA

NAME AS IT APPEARS ON CARD _____

CARD # _____

EXPIRATION DATE _____ BANK # _____

SHIPPING

Items other than Gemini will be shipped UPS unless otherwise stated.
Motor Freight Items: Gemini is a motor freight item. If a single item is motor freight, all items will be shipped motor freight.
Delivery time varies from 2-7 days. Please call for delivery charges and time.

SIGNATURE _____

(For charge customers)

ORDER #

DATE

SALESPERSON

QUANTITY
ORDERED

ITEM

UNIT
PRICE

EXTENDED
AMOUNT

	GEMINI BASIC ROBOT	6,495.00	
	GEMINI EDUCATIONAL SYSTEM	6,995.00	
	INFRARED KEYBOARD	259.95	
	WAFER TAPE DRIVE	179.95	
	INFRARED MOTION SENSOR	119.95	
	ROOM BEACON	49.95	
	DOOR EDGE REFLECTOR	4.95	
	BAROMETER	84.95	
	LIFE LITES	49.95	
	SMOKE SENSOR	39.95	
	FLOATING POINT BASIC LANGUAGE	149.95	
	VOICE COMMAND LANGUAGE (VOCOL)	129.95	
	SECURITY PROGRAM	99.95	
	8K CMOS STATIC RAM CHIP	39.95	
	8K CMOS EPROM	39.95	
	MONITOR ROM LISTING	39.95	
	NAVIGATION ROM LISTING	39.95	
	SUPERVISOR/DEMO LISTING	39.95	
	SCHEDULER PROGRAM LISTNG	39.95	
	VOICE COMMAND LANGUAGE LISTING	39.95	
	SECURITY PROGRAM LISTING	39.95	
	PROCON LISTING	19.95	
	MANUALS SET OF 2	74.95	
	APPLE/GEMINI COMMUNICATOR	159.95	
	S-C MARCO ASSEMBLER V1	80.00	
	S-C MARCO ASSEMBLER V2	100.00	
	65C02 CROSS ASSEMBLER V1	32.50	
	65C02 CROSS ASSEMBLER V2	50.00	
	GEMINI VIDEO TAPE	29.95	

(FOR MARYLAND RESIDENTS ONLY) 5% MD. TAX OR EXEMPT NO.

SHIPPING & HANDLING

DEPOSIT

TOTAL DUE

INFORMATION REQUEST

If you would like to receive additional information from us about our robotics products, please write your name and address below, and mail this request to Arctec Systems, Inc., 9104 Red Branch Rd., Columbia, MD 21045.

Name _____

Address _____

City _____ State _____ Zip _____

Phone No. _____

PERSONAL ROBOT QUESTIONNAIRE

You can receive additional information and be added to our mailing list whether or not you answer the following questions, but we at Arctec Systems would appreciate your taking a minute to tell us what you think about the field of personal robots.

1. Are you interested in the field of personal robots? ___ Yes ___ No
2. Do you own a personal robot? ___ Yes ___ No
3. Do you have access to a personal robot? ___ Yes ___ No
4. Are you considering acquiring a personal robot? ___ Yes ___ No If so, when? ___ in the next month or two; ___ in three to six months; ___ in six months to a year; ___ in a year or more
5. What features would you like your personal robot to have?

6. What would you like your personal robot to look like?

7. What price (or price range) would you pay for a robot with all of these features? _____ with most of these features? _____
8. What kind of personal computing equipment do you have? _____
9. Would it be important for your personal computing system to interact with your robot? ___ Yes ___ No ___ Don't know
10. Which robotics or computer magazines do you read fairly regularly?

THANK YOU FOR YOUR HELP!