

AGENDA ITEM 23

Consider awarding, rejecting or extending bid for the KaBand Radar Units for the County Law Enforcement Depts.

Bids were received from Applied Concepts, Inc., Decatur Electronics, Inc., Kustom Signals, Inc., and MPH Industries, Inc.

Moved: **Judge Doerfler**

Seconded: **Commissioner Hays**

Motion: To award bid for the KaBand Radar Units for the County Law Enforcement Departments to Applied Concepts.

Vote: **4 - 0** with Commissioner Boatright absent from the dais.

< Attachment >

WILLIAMSON COUNTY BID FORM

ONE OR MORE Ka BAND RADAR UNITS FOR THE WILLIAMSON COUNTY LAW ENFORCEMENT DEPARTMENTS

BID NUMBER: 01WC314 BID OPENING DATE & TIME: MARCH 6, 2001 - 2:00 PM

The undersigned, by his/her signature, represents that he/she is authorized to bind the bidder to fully comply with the terms and conditions of the attached Invitation for Bid, Specifications, and Special Provisions for the amount(s) shown on the accompanying bid sheet(s). By signing below, you have read the entire document and agreed to the terms therein.

NAME OF BIDDER: Applied Concepts, Inc.

Mailing Address: 730 F Avenue

City: Plano **State:** TX **Zip:** 75074

Email Address: sales@stalkerradar.com

Telephone: (800) 782-5537 or 972-398-3780 **Fax:** (972) 398-3781


Signature of Person Authorized to Sign BID

Date of BID: 3/2/01

Name and Title of Signer: Dennis Pirkle, Sales Manager
(Please Print or Type)

PLEASE COMPLETE THE FOLLOWING:

Prompt Payment Discount: net % 30 days. (If no discount is offered, Net 30 will apply.)

[] "all or none" basis. (Will accept award of "all" items only. If left blank, low item will apply.)

1 low item basis. (Will accept award on "any or all" items.)

List Additional Limitations if applicable:

DO NOT SIGN OR SUBMIT THIS FORM
WITHOUT READING ENTIRE DOCUMENT

**WILLIAMSON COUNTY
BID SPECIFICATIONS/BID SHEETS**

ONE OR MORE Ka BAND RADAR UNITS

ALL radars shall conform to the National Highway Traffic Safety Administration (NHTSA) "Model Minimum Performance Specifications for Police Traffic Radar Devices", shall be on the latest published Consumer Products List (CPL) of the International Association of Chiefs of Police (IACP), and shall operate on a frequency of 33.4 to 36.0 GHz, Ka band.

The design of the radar unit shall use state-of-the-art technology including Ka-band operation with all signal processing performed by a Digital Signal Processing microprocessor allowing future software upgrades by replacing a plug-in memory module.

The specifications provide for a Doppler radar that shall operate either in stationary or moving mode.

In stationary mode, the radar shall measure, compute, and display the speed of either an approaching or receding target vehicle from a stationary position.

In opposite lane moving mode, the radar shall measure, compute, and display the speed of either an opposite lane approaching target or an opposite lane receding target.

In same lane moving mode, the radar shall measure, compute, and display the speed of

1. A rearward same lane approaching target,
2. A rearward same lane receding target,
3. A forward same lane approaching target, or
4. A forward same lane receding target.

The basic design of all equipment offered shall have been in full commercial production: No "brand new" or prototype models will be considered.

Upon request by Williamson County bidder shall furnish a complete sample unit for examination and testing within ten (10) calendar days.

The radar may be field and laboratory tested to determine its level of performance and conformity to specifications. Emphasis will be given to the radar's ability to maintain a stable target speed reading, without displaying extraneous false readings while subjected to interference from the following: high powered television stations, other radio frequency interference sources including UHF, VHF, and HF transmitters, automobile alternators, ignition and electrical systems, automobile air conditioners, fan motors, high voltage power lines, traffic signals, neon lights, etc.

All radar units furnished under any resulting contract shall be factory certified as to their accuracy with test procedures in conformance with the National Bureau of Standards.

BID STALKER DUAL SL RADAR OR EQUAL.

RADAR SPECIFICATIONS**BRAND AND MODEL BEING BID:** _____

SPEC #	RADAR SPECIFICATION DESCRIPTION	CHECK APPROPRIATE BOX	
		YES ON RADAR	NO NOT ON RADAR
1	Shall have a front antenna and a 4-foot antenna cable with connectors at both ends	X	
2	Shall have a rear antenna and a 16-foot antenna cable with connectors at both ends	X	
3	Display/Counting unit with a removable cigarette power cord	X	
4	Cordless hand controller	X	
5	Two (2) tuning forks	X	
6	Required mounting hardware	X	
7	Upon operator demand, the display shall have the ability to display installed software version and transmitter frequency in the LED windows.	X	
8	Upon operator demand, the display shall indicate power input voltage and internal operating temperature in the LED windows.	X	
9	The radar shall provide a minimum range of 1 mile on a straight open 2 lane road with an average sized car.	X	
10	The radar shall operate within the Ka band at a frequency between 33.4 and 36.0 GHz.	X	
11	The antenna type will be a circular polarized conical horn.	X	
12	To minimize noise and maximize reliability, the antenna mixer shall be of the double balanced type using beamlead diodes. Waveguide cartridge diodes are not acceptable.	X	
13	The maximum antenna beam width shall not exceed 13 degrees between the -3 dB power points of the main lobe of the microwave beam, relative to maximum power at the center of the beam. The minimum beam width shall be approximately 11 degrees. The side lobes shall be approximately -25 dB below the main beam.	X	
14	Maximum dimensions for the antenna are: 2.50" diameter x 4.60" length	X	

Applied Concepts, Inc.

15	The antenna shall be designed to be waterproof by using O-ring seals at all external joints such as lens/housing, connector/housing, or cable/housing. Silicone rubber sealing is not acceptable due to aging break down.	X	
16	The antenna shall be of modular construction to facilitate repair of the integrated circuits and transistors mounted on circuit boards.	X	
17	For ease of installation and repair, the antenna cable shall have a removable locking connector at both ends.	X	
18	The antenna shall receive the reflected radar signal and convert the radar signal to a Doppler analog signal. The antenna shall then convert the Doppler analog signal to a Doppler digital signal prior to sending it to the counting unit for processing. The transmission of a digital Doppler signal is not as susceptible to noise induced by the auto ignition and 2-way radio transmission.	X	
19	Each antenna shall independently perform its own Doppler analog-to-digital conversion prior to sending the digital Doppler signal to the counting unit.	X	
20	The display shall include a digital readout system of the LED type. The digital readout shall have the capability of simultaneously displaying patrol speed, target speed, and locked target (or fastest target) speed.	X	
21	All legends on the waterproof display/control unit must be backlit to allow night viewing of the switch function in the absence of ambient light	X	
22	The display LED brightness must be adjustable by an accessible operator control. Because operator tastes vary, automatic LED brightness controls are not acceptable.	X	
23	The display unit shall be of modular construction to facilitate repair of the integrated circuits and transistors mounted on circuit boards.	X	
24	Maximum dimensions for the display/counting unit are: 2.3" height x 5" depth x 7" width.	X	
25	For ease of installation and repair, the display/counting unit shall have removable locking connectors at all cable entry points.	X	
26	The speaker for the Doppler audio should be located in the display unit and shall have an adjustable level control located on the front of the display unit.	X	
27	Operator validation of target Doppler audio versus noise shall be by square wave audio whose pitch does not vary with patrol speed. Since audio tones do not vary with patrol speed, the operator learns to correlate this true Doppler audio with target speed, eliminating the need of constantly watching the display to determine target speed.	X	

	The operator should be able to easily determine that the target is		
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28	approaching or retreating by listening to the Doppler audio increase or decrease in loudness. The Doppler audio loudness shall be directly proportional to the target size and the target range.	X	
29	To verify all displays are in working order, the display unit shall momentarily light all LED segments upon power-up.	X	
30	An operator initiated self-test shall perform accuracy verification of all counting unit internal time bases used for speed computation. Any detected malfunction will result in a AFail indication.	X	
31	An operator initiated self-test shall perform a diagnostic self test of the digital signal processor (DSP), random access memory (RAM), and associated processor logic. Any detected malfunction will result in a AFail indication.	X	
32	An operator initiated self-test shall perform a comprehensive test on the selected antenna by the counting unit to ensure the integrity of the antenna cable and antenna electronics. Any detected malfunction will result in a AFail indication.	X	
33	An automatic self-test should be performed not less than every 3 minutes and not more than every 15 minutes with either a visual or audible indication of successful completion of the test. However, it is not acceptable for a visual self-test operation to replace or to interfere with a target speed on the readout.	X	
34	To prevent obsolescence, the display/counting unit shall have a replaceable plug-in memory module to allow future model improvements to be incorporated into existing units.	X	
35	The display/counting unit uses Fast Fourier Transforms to process the digital Doppler signal to determine speed and acceptable signal-to-noise ratio before digitally displaying the target speed and/or patrol speed and/or lock speed on the LEDs of the display unit.	X	
36	The radar shall be accurate through its range within ± 1 mph in stationary mode and ± 2 mph in moving mode. The system will truncate or round down the target speed to the nearest whole number.	X	
37	The radar must have sufficient processing ability to track and display speeds to at least 200 mph.	X	
38	In stationary mode, the display unit shall normally read from 12 mph to 200 mph. A stationary mode display from 2 mph to 200 mph is optional and field selectable.	X	
39	In opposite lane moving mode, the display unit shall have the capability of acquiring patrol speed from 5 mph to 70 mph. For 5 mph patrol speed, target speed may be displayed from 20 mph to 195 mph. For 70 mph patrol speed, target speed may be displayed from 35 mph to 130 mph.	X	

40	In same lane moving mode, the display unit shall have the capability of	X	
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RADARS

VENDOR NAME:

Applied Concepts,

	acquiring patrol speed from 5 mph to 70 mph. The same lane target speed is $\leq 70\%$ of patrol speed to within 5 mph of patrol speed, i.e., for a patrol speed 50 mph, a target between 15 mph to 45 mph and 55 mph to 85 mph can be measured.	X	
41	Once the patrol speed is acquired, the radar shall have the ability to track patrol speed up to 200 mph.	X	
42	The radar shall come standard with the ability to display a fastest target in addition to the conventional strongest target. Operation where the fastest display replaces the strongest display is not acceptable. Both the strongest and the fastest targets must be displayed simultaneously. Locking of the fastest target cannot be accomplished until it becomes the strongest target. The fastest feature can be field enabled/disabled.	X	
43	The fastest control shall consist of a momentary switch on the hand controller that allows the operator to alternately toggle fastest on or off by momentarily pressing the FASTEST switch. A FASTEST switch that must be constantly held depressed is not acceptable.	X	
44	The radar shall come standard with a patrol speed harmonic LED indicator. The harmonic LED indicator can be field enabled/disabled.	X	
45	The radar shall come standard with the ability to display speeds in either English or Metric units. This feature can be easily changed in the field.	X	
46	To eliminate hand controller cable breakdown, the radar shall come standard with a hand controller that is cordless and uses infra-red light for transmission of switch closures to the display/counting unit.	X	
47	The following controls shall be located in the cordless hand controller:		
	REQUIRED		
	Lock/Release	X	
	Antenna select	X	
	Fastest target on/off	X	
	Test	X	
	Same/opposite select	X	
	PREFERRED		
	xmit/hold select	X	
	moving/stationary select	X	
	range adjust	X	
	squelch open/close	X	
	low end patrol speed select	X	
	speaker volume adjust	X	
	Patrol speed blanking - the hand controller and/or the switched display shall incorporate a dual purpose P.S. Blank key. The P.S. Blank key can be used to blank a locked patrol speed or blank the patrol speed window to acquire a new patrol speed.	X	

	Display brightness adjust	X	
	Slower target select - the target slower control shall consist of a momentary switch on the hand control that allows the operator to alternately toggle target slower on or off by momentarily pressing the SLOWER switch. A SLOWER switch that must be constantly held depressed is not acceptable.	X	
48	All radar components shall be designed to operate and maintain calibration when operated in ambient temperatures from -30 degrees C to + 70 degrees C and in conditions of 0 to 90% relative humidity.	X	
49	The power cord shall be completely flexible neoprene and will not be over 1/4" in diameter. It will be terminated in a suitable plug whereby the power input is made by means of plugging into the conventional cigarette lighter receptacle of a vehicle. The end of the cord terminating at the display/counting unit will be a removable locking connector.	X	
50	All electrical connections shall be completely enclosed to prevent shocks and reduce shock hazard.	X	
51	Each radar unit shall be provided with two (2) tuning forks that are permanently marked with a serial number, the radar transmitter frequency, the associated radar speed in mph, and the corresponding radar speed in kph. The tuning forks shall have factory certification as to accuracy and be accurate to within ∇ 1 mph of the calibrated frequency.	X	
52	Each radar unit provided shall respond to the signal from the tuning fork within ∇ 1 mph.	X	
53	Each radar unit must be capable of interfacing with all major brands of in-car video systems. Interfacing to the video system will not effect or void radar warranty. Radar manufacturer must be willing to provide all required data to the purchasing agency and/or video manufacturer to accomplish proper interfacing.	X	

A full and complete set of operating instructions and specifications manual with case law history in the use of traffic radar shall be furnished by the contractor at no additional cost with each unit.

Operator/Instructor training and certification shall be furnished by the contractor at no additional cost with each unit.

The manufacturer agrees to repair or replace (at its discretion) each unit that fails due to defective materials or workmanship for a period of three (3) years from the date of purchase. Bid shall include routine maintenance and repair services for each unit provided for thirty-six (36) months. Indicate name, address, phone number, and the name of a contact person of the nearest repair facility for the radar unit being offered below:

Applied Concepts, Inc./Stalker Radar
 Paul Harrison, Customer Service Manager
 730 F Avenue
 Plano, Tx 75074

Indicate the average number of days required to perform repairs: 3 or less plus shipping

ADDITIONAL SPECIFICATIONS FOR TOTALLY WATERPROOF RADARS

BRAND AND MODEL BEING BID:

In addition to ALL of the above stated specifications the following apply to the waterproof radars.

SPEC #	RADAR SPECIFICATION DESCRIPTION	CHECK APPROPRIATE BOX	
		YES ON RADAR	NO NOT ON RADAR
1	Display/counting unit must be totally waterproof.	Display	C/II
2	Waterproof Display/counting unit shall have front mounted switches.	X	
3	The waterproof radar must have either or both:		
	cordless hand controller		X
	sealed remote control	X	
4	The waterproof display/counting unit shall include a digital readout system of the LED type. The digital readout will have the capability of simultaneously displaying patrol speed, target speed, and locked target (or fastest target) speed.	X	
5	The front of the waterproof display/counting unit shall contain waterproof switches used for radar set up and operation.	X	
6	The display/counting unit must be waterproof and shall allow operation in direct rain. The controls shall be waterproof and will be located on the front panel. These controls should include the following functions:		
	lock/release	X	

xmit/hold select	X	
antenna select	X	
moving/stationary select	X	
range adjust	X	
squelch open/close	X	
low end patrol speed select	X	
test	X	
speaker volume	X	
patrol speed blanking	X	
display brightness adjust	X	

7

The following controls shall be located in the cordless hand controller:

REQUIRED

Lock/Release

X

Antenna select

X

Fastest target on/off

X

Test

X

Same/opposite select

X

PREFERRED

xmit/hold select

X

moving/stationary select

X

range adjust

X

squelch open/close

X

low end patrol speed select

X

speaker volume adjust

X

Patrol speed blanking - the hand controller and/or the switched display shall incorporate a dual purpose P.S. Blank key. The P.S. Blank key can be used to blank a locked patrol speed or blank the patrol speed window to acquire a new patrol speed.

X

display brightness adjust

X

Slower target select - the target slower control shall consist of a momentary switch on the hand control that allows the operator to alternately toggle target slower on or off by momentarily pressing the SLOWER switch. A SLOWER switch that must be constantly held depressed is not acceptable.

X

8	The following controls shall be located on the waterproof sealed remote:		
	lock/release	X	
	xmit/hold select	X	
	antenna select	X	
	fastest target on/off	X	
	same/opposite select	X	
	slower target select	X	

These bid specifications are non-restrictive and do not include any proprietary items, components, circuits, or devices which would preclude any radar manufacturer from producing radar to meet these specifications. All technical tolerances and other specified criteria contained within these specifications are considered to be state-of-the-art and are currently being met by commercially available radar components. The fact that a manufacturer chooses not to produce radar meeting these specifications should not be sufficient cause to adjudge these specifications restrictive.

Bid Evaluation: To insure that this department is able to maintain a speed enforcement program using traffic radar of the highest quality that is supported by a reputable company and to guarantee that this department will get the best value for its money, bids will be evaluated according to the grading scale below. The categories and percentages assigned to each category are as follows:

- | | | |
|----|--|-----|
| 1. | Cost | 45% |
| 2. | Meets required specifications | 25% |
| 3. | Meets preferred specifications | 20% |
| 4. | Technical support, Service, Repair response time, and upgradeability | 5% |
| 5. | Warranty Coverage | 5% |

Price quoted is to include delivery to Sheriff=s Department in Williamson County, installation, minimum three (3) year full parts and labor warranty, complete set of operating instructions and specifications manual, and operator/instructor training and certification.

DESCRIPTION	PURCHASE QUANTITY	PURCHASE PRICE INCLUDES WARRANTY	RENTAL QUANTITY	36 MONTH RENTAL INCLUDES WARRANTY
RADAR	1 - 10	\$2,124.00	1	TOTAL \$2,124.00
				PER YEAR \$ 708.00
				PER MONTH \$59.00
	11 - 20	\$2,124.00		
	Additional purchase any quantity from 1 - 20	\$2,124.00		
WATERPROOF RADAR	1 - 10	\$2,424.00	1	TOTAL \$2,424.00
				PER YEAR \$808.08
				PER MONTH \$67.34
	11 - 20			
	Additional purchase any quantity from 1 - 20	\$2,424.00		

ALTERNATE BID

Price quoted is to include delivery to Sheriff=s Department in Williamson County, installation, minimum three (3) year full parts and labor warranty, complete set of operating instructions and specifications manual, and operator/instructor training and certification.

DESCRIPTION	PURCHASE QUANTITY	PURCHASE PRICE INCLUDES WARRANTY	RENTAL QUANTITY	36 MONTH RENTAL INCLUDES WARRANTY
RADAR	1 - 10	\$3,195.00	1	TOTAL \$3,195.00
				PER YEAR \$1,065.00
				PER MONTH \$88.75
	11 - 20	\$3,195.00		
	Additional purchase any quantity from 1 - 20	\$3,195.00		
WATERPROOF RADAR	1 - 10	\$3,495.00	1	TOTAL \$3,495.00
				PER YEAR \$1,165.08
				PER MONTH \$97.09
	11 - 20	\$3,495.00		
	Additional purchase any quantity from 1 - 20	\$3,495.00		

This bid is for the Directional Sensing Radar unit. It also complies with all Specifications plus many more enhancements. See literature and specification sheets.

WILLIAMSON COUNTY BID FORM

ONE OR MORE Ka BAND RADAR UNITS FOR THE WILLIAMSON COUNTY LAW ENFORCEMENT DEPARTMENTS

BID NUMBER: 01WC314 BID OPENING DATE & TIME: MARCH 6, 2001 - 2:00 PM

The undersigned, by his/her signature, represents that he/she is authorized to bind the bidder to fully comply with the terms and conditions of the attached Invitation for Bid, Specifications, and Special Provisions for the amount(s) shown on the accompanying bid sheet(s). By signing below, you have read the entire document and agreed to the terms therein.

NAME OF BIDDER: DECATUR ELECTRONICS, INC.

Mailing Address: 715 BRIGHT STREET

City: DECATUR **State:** IL **Zip:** 62522

Email Address: cjaschob@decaturelectronics.com

Telephone: (217) 428-4315 **Fax:** (217) 428-5302

Craig Sanchez Date of BID: MARCH 6, 2001
Signature of Person Authorized to Sign BID

Name and Title of Signer: CRAIG JASCHOB REGIONAL SALES MANAGER
(Please Print or Type)

PLEASE COMPLETE THE FOLLOWING:

Prompt Payment Discount: _____ % _____ days. (If no discount is offered, Net 30 will apply.)

[] "all or none" basis. (Will accept award of "all" items only. If left blank, low item will apply.)

☒ low item basis. (Will accept award on "any or all" items.)

List Additional Limitations if applicable:

DO NOT SIGN OR SUBMIT THIS FORM
WITHOUT READING ENTIRE DOCUMENT

THIS FORM MUST BE COMPLETED, SIGNED AND RETURNED WITH BID

**WILLIAMSON COUNTY
BID SPECIFICATIONS/BID SHEETS**

ONE OR MORE Ka BAND RADAR UNITS

ALL radars shall conform to the National Highway Traffic Safety Administration (NHTSA) "Model Minimum Performance Specifications for Police Traffic Radar Devices", shall be on the latest published Consumer Products List (CPL) of the International Association of Chiefs of Police (IACP), and shall operate on a frequency of 33.4 to 36.0 GHz, Ka band.

The design of the radar unit shall use state-of-the-art technology including Ka-band operation with all signal processing performed by a Digital Signal Processing microprocessor allowing future software upgrades by replacing a plug-in memory module.

The specifications provide for a Doppler radar that shall operate either in stationary or moving mode.

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In same lane moving mode, the radar shall measure, compute, and display the speed of

1. A rearward same lane approaching target,
2. A rearward same lane receding target,
3. A forward same lane approaching target, or
4. A forward same lane receding target.

The basic design of all equipment offered shall have been in full commercial production. No "brand new" or prototype models will be considered.

Upon request by Williamson County bidder shall furnish a complete sample unit for examination and testing within ten (10) calendar days.

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All radar units furnished under any resulting contract shall be factory certified as to their accuracy with test procedures in conformance with the National Bureau of Standards.

BID STALKER DUAL SL RADAR OR EQUAL.

RADAR SPECIFICATIONS

BRAND AND MODEL BEING BID: GENESIS II DUAL KA

SPEC #	RADAR SPECIFICATION DESCRIPTION	CHECK APPROPRIATE BOX	
		YES ON RADAR	NO NOT ON RADAR
1	Shall have a front antenna and a 4-foot antenna cable with connectors at both ends	X	
2	Shall have a rear antenna and a 16-foot antenna cable with connectors at both ends	X	
3	Display/Counting unit with a removable cigarette power cord	X	
4	Cordless hand controller		X
5	Two (2) tuning forks	X	
6	Required mounting hardware	X	
7	Upon operator demand, the display shall have the ability to display installed software version and transmitter frequency in the LED windows.	X	
8	Upon operator demand, the display shall indicate power input voltage and internal <u>operating temperature</u> in the LED windows.		X
9	The radar shall provide a minimum range of 1 mile on a straight open 2 lane road with an average sized car.	X	
10	The radar shall operate within the Ka band at a frequency between 33.4 and 36.0 GHz.	X	
11	The antenna type will be a circular polarized conical horn.	X	
12	To minimize noise and maximize reliability, the antenna mixer shall be of the double balanced type using beamlead diodes. Waveguide cartridge diodes are not acceptable.	X	
13	The maximum antenna beam width shall not exceed 13 degrees between the -3 dB power points of the main lobe of the microwave beam, relative to maximum power at the center of the beam. The minimum beam width shall be approximately 11 degrees. The side lobes shall be approximately -25 dB below the main beam.	X	
14	Maximum dimensions for the antenna are: 2.50" diameter x 4.60" length	X	

15	The antenna shall be designed to be waterproof by using O-ring seals at all external joints such as lens/housing, connector/housing, or cable/housing. Silicone rubber sealing is not acceptable due to aging break down.	X	
16	The antenna shall be of modular construction to facilitate repair of the integrated circuits and transistors mounted on circuit boards.	X	
17	For ease of installation and repair, the antenna cable shall have a removable locking connector at both ends.	X	
18	The antenna shall receive the reflected radar signal and convert the radar signal to a Doppler analog signal. The antenna shall then convert the Doppler analog signal to a Doppler digital signal prior to sending it to the counting unit for processing. The transmission of a digital Doppler signal is not as susceptible to noise induced by the auto ignition and 2-way radio transmission.	X	
19	Each antenna shall independently perform its own Doppler analog-to-digital-conversion prior to sending the digital Doppler signal to the counting unit.	X	
20	The display shall include a digital readout system of the LED type. The digital readout shall have the capability of simultaneously displaying patrol speed, target speed, and locked target (or fastest target) speed.	X	
21	All legends on the waterproof display/control unit must be backlit to allow night viewing of the switch function in the absence of ambient light SWITCHES REMOVED FROM DISPLAY TO REDUCE SIZE OF UNIT		X
22	The display LED brightness must be adjustable by an accessible operator control. Because operator tastes vary, automatic LED brightness controls are not acceptable. OBSOLETE TECHNOLOGY		X
23	The display unit shall be of modular construction to facilitate repair of the integrated circuits and transistors mounted on circuit boards.	X	
24	Maximum dimensions for the display/counting unit are: 2.3" height x 5" depth x 7" width.	X	
25	For ease of installation and repair, the display/counting unit shall have removable locking connectors at all cable entry points.	X	
26	The speaker for the Doppler audio should be located in the display unit and shall have an adjustable level control located on the front of the display unit. SPEAKER MOVED TO REMOTE FOR BETTER AUDIBILITY-CLOSER TO OPERATOR		X
27	Operator validation of target Doppler audio versus noise shall be by square wave audio whose pitch does not vary with patrol speed. Since audio tones do not vary with patrol speed, the operator learns to correlate this true Doppler audio with target speed, eliminating the need of constantly watching the display to determine target speed.	X	

28	The operator should be able to easily determine that the target is approaching or retreating by listening to the Doppler audio increase or decrease in loudness. The Doppler audio loudness shall be directly proportional to the target size and the target range.	X	
29	To verify all displays are in working order, the display unit shall momentarily light all LED segments upon power-up.	X	
30	An operator initiated self-test shall perform accuracy verification of all counting unit internal time bases used for speed computation. Any detected malfunction will result in a "FAIL" indication.	X	
31	An operator initiated self-test shall perform a diagnostic self test of the digital signal processor (DSP), random access memory (RAM), and associated processor logic. Any detected malfunction will result in a "FAIL" indication.	X	
32	An operator initiated self-test shall perform a comprehensive test on the selected antenna by the counting unit to ensure the integrity of the antenna cable and antenna electronics. Any detected malfunction will result in a "FAIL" indication.	X	
33	An automatic self-test should be performed not less than every 3 minutes and not more than every 15 minutes with either a visual or audible indication of successful completion of the test. However, it is not acceptable for a visual self-test operation to replace or to interfere with a target speed on the readout.	X	
34	To prevent obsolescence, the display/counting unit shall have a replaceable plug-in memory module to allow future model improvements to be incorporated into existing units.	X	
35	The display/counting unit uses Fast Fourier Transforms to process the digital Doppler signal to determine speed and acceptable signal-to-noise ratio before digitally displaying the target speed and/or patrol speed and/or lock speed on the LED's of the display unit.	X	
36	The radar shall be accurate through its range within ± 1 mph in stationary mode and ± 2 mph in moving mode. The system will truncate or round down the target speed to the nearest whole number.	EXCEEDS X ± 1 MPH IN STATIONARY MODE	
37	The radar must have sufficient processing ability to track and display speeds to at least 200 mph.	X	
38	In stationary mode, the display unit shall normally read from 12 mph to 200 mph. A stationary mode display from 2 mph to 200 mph is optional and field selectable.	X	
39	In opposite lane moving mode, the display unit shall have the capability of acquiring patrol speed from 5 mph to 70 mph. For 5 mph patrol speed, target speed may be displayed from 20 mph to 195 mph. For 70 mph patrol speed, target speed may be displayed from 35 mph to 130 mph.	X	

40	In same lane moving mode, the display unit shall have the capability of acquiring patrol speed from 5 mph to 70 mph. The same lane target speed is $\pm 70\%$ of patrol speed to within 5 mph of patrol speed, i.e., for a patrol speed 50 mph, a target between 15 mph to 45 mph and 55 mph to 85 mph can be measured.	X	
41	Once the patrol speed is acquired, the radar shall have the ability to track patrol speed up to 200 mph.	X	
42	The radar shall come standard with the ability to display a fastest target in addition to the conventional strongest target. Operation where the fastest display replaces the strongest display is not acceptable. Both the strongest and the fastest targets must be displayed simultaneously. Locking of the fastest target cannot be accomplished until it becomes the strongest target. The fastest feature can be field enabled/disabled.	X	
43	The fastest control shall consist of a momentary switch on the hand controller that allows the operator to alternately toggle fastest on or off by momentarily pressing the FASTEST switch. A FASTEST switch that must be constantly held depressed is not acceptable.	X	
44	The radar shall come standard with a patrol speed harmonic LED indicator. The harmonic LED indicator can be field enabled/disabled.	X	
45	The radar shall come standard with the ability to display speeds in either English or Metric units. This feature can be easily changed in the field.	X	
46	To eliminate hand controller cable breakdown, the radar shall come standard with a hand controller that is cordless and uses infra-red light for transmission of switch closures to the display/counting unit.		X
47	The following controls shall be located in the cordless hand controller:		
	REQUIRED		
	Lock/Release		
	Antenna select ALL CONTROLS LISTED ARE ON THE GENESIS II		
	Fastest target on/off HAND REMOTE		
	Test		
	Same/opposite select		
	PREFERRED		
	xmit/hold select		
	moving/stationary select ALL CONTROLS LISTED ARE ON THE GENESIS II		
	range adjust HAND REMOTE		
	squelch open/close		
	low end patrol speed select		
	speaker volume adjust		

	Patrol speed blanking - the hand controller and/or the switched display shall incorporate a dual purpose P.S. Blank key. The P.S. Blank key can be used to blank a locked patrol speed or blank the patrol speed window to acquire a new patrol speed.	X	
	Display brightness adjust <i>MANUAL P.S. OBSOLETE TECHNOLOGY (WE USE AMERICAN LIGHT CHANGES)</i>		X
	Slower target select - the target slower control shall consist of a momentary switch on the hand control that allows the operator to alternately toggle target slower on or off by momentarily pressing the SLOWER switch. A SLOWER switch that must be constantly held depressed is not acceptable.	X	
48	All radar components shall be designed to operate and maintain calibration when operated in ambient temperatures from -30 degrees C to + 70 degrees C and in conditions of 0 to 90% relative humidity.	X	
49	The power cord shall be completely flexible neoprene and will not be over 1/4" in diameter. It will be terminated in a suitable plug whereby the power input is made by means of plugging into the conventional cigarette lighter receptacle of a vehicle. The end of the cord terminating at the display/counting unit will be a removable locking connector.	X	
50	All electrical connections shall be completely enclosed to prevent shocks and reduce shock hazard.	X	
51	Each radar unit shall be provided with two (2) tuning forks that are permanently marked with a serial number, the radar transmitter frequency, the associated radar speed in mph, and the corresponding radar speed in kph. The tuning forks shall have factory certification as to accuracy and be accurate to within ± 1 mph of the calibrated frequency.	X	
52	Each radar unit provided shall respond to the signal from the tuning fork within ± 1 mph.	X	
53	Each radar unit must be capable of interfacing with all major brands of in-car video systems. Interfacing to the video system will not effect or void radar warranty. Radar manufacturer must be willing to provide all required data to the purchasing agency and/or video manufacturer to accomplish proper interfacing.	X	

A full and complete set of operating instructions and specifications manual with case law history in the use of traffic radar shall be furnished by the contractor at no additional cost with each unit.

Operator/Instructor training and certification shall be furnished by the contractor at no additional cost with each unit.

The manufacturer agrees to repair or replace (at its discretion) each unit that falls due to defective materials or workmanship for a period of three (3) years from the date of purchase. Bid shall include routine maintenance and repair services for each unit provided for thirty-six (36) months. Indicate name, address, phone number, and the name of a contact person of the nearest repair facility for the radar unit being offered below:

<u>JOE CURRY & SONS ELECTRONICS</u>	<u>NITEK ELECTRONICS</u>
<u>1511 WOOD BERRY STREET</u>	<u>4706 NORTH MIDKIFF #22</u>
<u>LUFKIN, TX 75904</u>	<u>PMB 174</u>
<u>936-637-0918</u>	<u>MIDLAND, TX 79705</u>
	<u>915-697-7960</u>

Indicate the average number of days required to perform repairs: 2 DAYS FROM
TIME RECEIVED

ADDITIONAL SPECIFICATIONS FOR TOTALLY WATERPROOF RADARS

BRAND AND MODEL BEING BID:

In addition to ALL of the above stated specifications the following apply to the waterproof radars.

SPEC #	RADAR SPECIFICATION DESCRIPTION	CHECK APPROPRIATE BOX	
		YES ON RADAR	NO NOT ON RADAR
1	Display/counting unit must be totally waterproof.		
2	Waterproof Display/counting unit shall have front mounted switches.		
3	The waterproof radar must have either or both:		
	cordless hand controller		
	sealed remote control		
4	The waterproof display/counting unit shall include a digital readout system of the LED type. The digital readout will have the capability of simultaneously displaying patrol speed, target speed, and locked target (or fastest target) speed.		
5	The front of the waterproof display/counting unit shall contain waterproof switches used for radar set up and operation.		
6	The display/counting unit must be waterproof and shall allow operation in direct rain. The controls shall be waterproof and will be located on the front panel. These controls should include the following functions:		
	lock/release		

RADARS

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VENDOR NAME: DECATUR ELECTRONICS, INC.

	xmit/hold select		
	antenna select		
	moving/stationary select		
	range adjust		
	squelch open/close		
	low end patrol speed select		
	test		
	speaker volume		
	patrol speed blanking		
	display brightness adjust		
7	The following controls shall be located in the cordless hand controller:		
	REQUIRED		
	Lock/Release		
	Antenna select		
	Fastest target on/off		
	Test		
	Same/opposite select		
	PREFERRED		
	xmit/hold select		
	moving/stationary select		
	range adjust		
	squelch open/close		
	low end patrol speed select		
	speaker volume adjust		
	Patrol speed blanking - the hand controller and/or the switched display shall incorporate a dual purpose P.S. Blank key. The P.S. Blank key can be used to blank a locked patrol speed or blank the patrol speed window to acquire a new patrol speed.		
	display brightness adjust		
	Slower target select - the target slower control shall consist of a momentary switch on the hand control that allows the operator to alternately toggle target slower on or off by momentarily pressing the SLOWER switch. A SLOWER switch that must be constantly held depressed is not acceptable.		

8	The following controls shall be located on the waterproof sealed remote:		
	lock/release		
	xmit/hold select		
	antenna select		
	fastest target on/off		
	same/opposite select		
	slower target select		

These bid specifications are non-restrictive and do not include any proprietary items, components, circuits, or devices which would preclude any radar manufacturer from producing radar to meet these specifications. All technical tolerances and other specified criteria contained within these specifications are considered to be state-of-the-art and are currently being met by commercially available radar components. The fact that a manufacturer chooses not to produce radar meeting these specifications should not be sufficient cause to adjudge these specifications restrictive.

Bid Evaluation: To insure that this department is able to maintain a speed enforcement program using traffic radar of the highest quality that is supported by a reputable company and to guarantee that this department will get the best value for its money, bids will be evaluated according to the grading scale below. The categories and percentages assigned to each category are as follows:

- | | | |
|----|--|-----|
| 1. | Cost | 45% |
| 2. | Meets required specifications | 25% |
| 3. | Meets preferred specifications | 20% |
| 4. | Technical support, Service, Repair response time, and upgradeability | 5% |
| 5. | Warranty Coverage | 5% |

Price quoted is to include delivery to Sheriff's Department in Williamson County, Installation, minimum three (3) year full parts and labor warranty, complete set of operating instructions and specifications manual, and operator/instructor training and certification.

DESCRIPTION	PURCHASE QUANTITY	PURCHASE PRICE INCLUDES WARRANTY	RENTAL QUANTITY	36 MONTH RENTAL INCLUDES WARRANTY
RADAR	1 - 10	\$1,875.00	1	TOTAL \$1,606.00
				PER YEAR \$ 535.50
				PER MONTH \$44.63
	11 - 20	\$1,850.00		
	Additional purchase any quantity from 1 - 20	\$1,850.00		
WATERPROOF RADAR	1 - 10	NO BID	1	TOTAL NO BID
				PER YEAR NO BID
				PER MONTH NO BID
	11 - 20	NO BID		
	Additional purchase any quantity from 1 - 20	NO BID		

WILLIAMSON COUNTY BID FORM**ONE OR MORE Ka BAND RADAR UNITS FOR
THE WILLIAMSON COUNTY LAW ENFORCEMENT DEPARTMENTS****BID NUMBER:** 01WC314 **BID OPENING DATE & TIME:** MARCH 6, 2001 - 2:00 PM

The undersigned, by his/her signature, represents that he/she is authorized to bind the bidder to fully comply with the terms and conditions of the attached Invitation for Bid, Specifications, and Special Provisions for the amount(s) shown on the accompanying bid sheet(s). By signing below, you have read the entire document and agreed to the terms therein.

NAME OF BIDDER: Kustom Signals, Inc.**Mailing Address:** 9325 Pflumm Road**City:** Lenexa**State:** Kansas**Zip:** 66215-3347**Email Address:** mpeine@kustomsignals.com**Telephone:** (800) 852-1270 Ext 3029 / (913) 492-1400 **Fax:** (913) 492-1703
Signature of Person Authorized to Sign BID**Date of BID:** March 2, 2001**Name and Title of Signer:** Mike Peine, Bids and Proposals Supervisor

(Please Print or Type)

PLEASE COMPLETE THE FOLLOWING:**Prompt Payment Discount:** N/A % Net 30 days. (If no discount is offered, Net 30 will apply.)☐ "all or none" basis. (Will accept award of "all" items only. If left blank, low item will apply.)☐ low item basis. (Will accept award on "any or all" items.)**List Additional Limitations if applicable:** _____

DO NOT SIGN OR SUBMIT THIS FORM
WITHOUT READING ENTIRE DOCUMENT

THIS FORM MUST BE COMPLETED, SIGNED AND RETURNED WITH BID

**WILLIAMSON COUNTY
BID SPECIFICATIONS/BID SHEETS**

ONE OR MORE Ka BAND RADAR UNITS

ALL radars shall conform to the National Highway Traffic Safety Administration (NHTSA) "Model Minimum Performance Specifications for Police Traffic Radar Devices", shall be on the latest published Consumer Products List (CPL) of the International Association of Chiefs of Police (IACP), and shall operate on a frequency of 33.4 to 36.0 GHz, Ka band.

The design of the radar unit shall use state-of-the-art technology including Ka-band operation with all signal processing performed by a Digital Signal Processing microprocessor allowing future software upgrades by replacing a plug-in memory module.

The specifications provide for a Doppler radar that shall operate either in stationary or moving mode.

In stationary mode, the radar shall measure, compute, and display the speed of either an approaching or receding target vehicle from a stationary position.

In opposite lane moving mode, the radar shall measure, compute, and display the speed of either an opposite lane approaching target or an opposite lane receding target.

In same lane moving mode, the radar shall measure, compute, and display the speed of

1. A rearward same lane approaching target,
2. A rearward same lane receding target,
3. A forward same lane approaching target, or
4. A forward same lane receding target.

The basic design of all equipment offered shall have been in full commercial production. No "brand new" or prototype models will be considered.

Upon request by Williamson County bidder shall furnish a complete sample unit for examination and testing within ten (10) calendar days.

The radar may be field and laboratory tested to determine its level of performance and conformity to specifications. Emphasis will be given to the radar's ability to maintain a stable target speed reading, without displaying extraneous false readings while subjected to interference from the following: high powered television stations, other radio frequency interference sources including UHF, VHF, and HF transmitters, automobile alternators, ignition and electrical systems, automobile air conditioners, fan motors, high voltage power lines, traffic signals, neon lights, etc.

All radar units furnished under any resulting contract shall be factory certified as to their accuracy with test procedures in conformance with the National Bureau of Standards.

BID STALKER DUAL SL RADAR OR EQUAL.

RADAR SPECIFICATIONS

BRAND AND MODEL BEING BID: Kustom Signals Golden Eagle Radar System with Dual Ka Band Antennas, Cordless Remote Three Year Warranty, and Shipping

SPEC #	RADAR SPECIFICATION DESCRIPTION	CHECK APPROPRIATE BOX	
		YES ON RADAR	NO NOT ON RADAR
1	Shall have a front antenna and a 4-foot antenna cable with connectors at both ends	XX	
2	Shall have a rear antenna and a 16-foot antenna cable with connectors at both ends	XX	
3	Display/Counting unit with a removable cigarette power cord	See Attached	
4	Cordless hand controller	XX	
5	Two (2) tuning forks	XX	
6	Required mounting hardware	XX	
7	Upon operator demand, the display shall have the ability to display installed software version and transmitter frequency in the LED windows.	XX	
8	Upon operator demand, the display shall indicate power input voltage and internal operating temperature in the LED windows.	XX	
9	The radar shall provide a minimum range of 1 mile on a straight open 2 lane road with an average sized car.	XX	
10	The radar shall operate within the Ka band at a frequency between 33.4 and 36.0 GHz.	XX	
11	The antenna type will be a circular polarized conical horn.	XX	
12	To minimize noise and maximize reliability, the antenna mixer shall be of the double balanced type using beamlead diodes. Waveguide cartridge diodes are not acceptable.	XX	
13	The maximum antenna beam width shall not exceed 13 degrees between the -3 dB power points of the main lobe of the microwave beam, relative to maximum power at the center of the beam. The minimum beam width shall be approximately 11 degrees. The side lobes shall be approximately -25 dB below the main beam.	XX	
14	Maximum dimensions for the antenna are: 2.50" diameter x 4.60" length	XX	

15	The antenna shall be designed to be waterproof by using O-ring seals at all external joints such as lens/housing, connector/housing, or cable/housing. Silicone rubber sealing is not acceptable due to aging break down.	XX	
16	The antenna shall be of modular construction to facilitate repair of the integrated circuits and transistors mounted on circuit boards.	XX	
17	For ease of installation and repair, the antenna cable shall have a removable locking connector at both ends.	XX	
18	The antenna shall receive the reflected radar signal and convert the radar signal to a Doppler analog signal. The antenna shall then convert the Doppler analog signal to a Doppler digital signal prior to sending it to the counting unit for processing. The transmission of a digital Doppler signal is not as susceptible to noise induced by the auto ignition and 2-way radio transmission.	XX	
19	Each antenna shall independently perform its own Doppler analog-to-digital-conversion prior to sending the digital Doppler signal to the counting unit.	XX	
20	The display shall include a digital readout system of the LED type. The digital readout shall have the capability of simultaneously displaying patrol speed, target speed, and locked target (or fastest target) speed.	XX	
21	All legends on the waterproof display/control unit must be backlit to allow night viewing of the switch function in the absence of ambient light	See Attached	
22	The display LED brightness must be adjustable by an accessible operator control. Because operator tastes vary, automatic LED brightness controls are not acceptable.	See Attached	
23	The display unit shall be of modular construction to facilitate repair of the integrated circuits and transistors mounted on circuit boards.	XX	
24	Maximum dimensions for the display/counting unit are: 2.3" height x 5" depth x 7" width.	XX	
25	For ease of installation and repair, the display/counting unit shall have removable locking connectors at all cable entry points.	XX	
26	The speaker for the Doppler audio should be located in the display unit and shall have an adjustable level control located on the front of the display unit.	XX	
27	Operator validation of target Doppler audio versus noise shall be by square wave audio whose pitch does not vary with patrol speed. Since audio tones do not vary with patrol speed, the operator learns to correlate this true Doppler audio with target speed, eliminating the need of constantly watching the display to determine target speed.	XX	

28	The operator should be able to easily determine that the target is approaching or retreating by listening to the Doppler audio increase or decrease in loudness. The Doppler audio loudness shall be directly proportional to the target size and the target range.	See Attached	
29	To verify all displays are in working order, the display unit shall momentarily light all LED segments upon power-up.	XX	
30	An operator initiated self-test shall perform accuracy verification of all counting unit internal time bases used for speed computation. Any detected malfunction will result in a "FAIL" indication.	XX	
31	An operator initiated self-test shall perform a diagnostic self test of the digital signal processor (DSP), random access memory (RAM), and associated processor logic. Any detected malfunction will result in a "FAIL" indication.	XX	
32	An operator initiated self-test shall perform a comprehensive test on the selected antenna by the counting unit to ensure the integrity of the antenna cable and antenna electronics. Any detected malfunction will result in a "FAIL" indication.	XX	
33	An automatic self-test should be performed not less than every 3 minutes and not more than every 15 minutes with either a visual or audible indication of successful completion of the test. However, it is not acceptable for a visual self-test operation to replace or to interfere with a target speed on the readout.	XX	
34	To prevent obsolescence, the display/counting unit shall have a replaceable plug-in memory module to allow future model improvements to be incorporated into existing units.	XX	
35	The display/counting unit uses Fast Fourier Transforms to process the digital Doppler signal to determine speed and acceptable signal-to-noise ratio before digitally displaying the target speed and/or patrol speed and/or lock speed on the LED's of the display unit.	XX	
36	The radar shall be accurate through its range within ± 1 mph in stationary mode and ± 2 mph in moving mode. The system will truncate or round down the target speed to the nearest whole number.	XX	
37	The radar must have sufficient processing ability to track and display speeds to at least 200 mph.	See Attached	
38	In stationary mode, the display unit shall normally read from 12 mph to 200 mph. A stationary mode display from 2 mph to 200 mph is optional and field selectable.	See Attached	
39	In opposite lane moving mode, the display unit shall have the capability of acquiring patrol speed from 5 mph to 70 mph. For 5 mph patrol speed, target speed may be displayed from 20 mph to 195 mph. For 70 mph patrol speed, target speed may be displayed from 35 mph to 130 mph.	See Attached	

40	In same lane moving mode, the display unit shall have the capability of acquiring patrol speed from 5 mph to 70 mph. The same lane target speed is $\pm 70\%$ of patrol speed to within 5 mph of patrol speed, i.e., for a patrol speed 50 mph, a target between 15 mph to 45 mph and 55 mph to 85 mph can be measured.	See Attached	
41	Once the patrol speed is acquired, the radar shall have the ability to track patrol speed up to 200 mph.	See Attached	
42	The radar shall come standard with the ability to display a fastest target in addition to the conventional strongest target. Operation where the fastest display replaces the strongest display is not acceptable. Both the strongest and the fastest targets must be displayed simultaneously. Locking of the fastest target cannot be accomplished until it becomes the strongest target. The fastest feature can be field enabled/disabled.	See Attached	
43	The fastest control shall consist of a momentary switch on the hand controller that allows the operator to alternately toggle fastest on or off by momentarily pressing the FASTEST switch. A FASTEST switch that must be constantly held depressed is not acceptable.	See Attached	
44	The radar shall come standard with a patrol speed harmonic LED indicator. The harmonic LED indicator can be field enabled/disabled.	XX	
45	The radar shall come standard with the ability to display speeds in either English or Metric units. This feature can be easily changed in the field.	XX	
46	To eliminate hand controller cable breakdown, the radar shall come standard with a hand controller that is cordless and uses Infra-red light for transmission of switch closures to the display/counting unit.	XX	
47	The following controls shall be located in the cordless hand controller:		
	REQUIRED		
	Lock/Release	XX	
	Antenna select	XX	
	Fastest target on/off	XX	
	Test	See Attached	
	Same/opposite select	XX	
	PREFERRED		
	xmit/hold select	XX	
	moving/stationary select	See Attached	
	range adjust	See Attached	
	squelch open/close	See Attached	
	low end patrol speed select	XX	
	speaker volume adjust	See Attached	

	Patrol speed blanking - the hand controller and/or the switched display shall incorporate a dual purpose P.S. Blank key. The P.S. Blank key can be used to blank a locked patrol speed or blank the patrol speed window to acquire a new patrol speed.	XX	
	Display brightness adjust	See Attached	
	Slower target select - the target slower control shall consist of a momentary switch on the hand control that allows the operator to alternately toggle target slower on or off by momentarily pressing the SLOWER switch. A SLOWER switch that must be constantly held depressed is not acceptable.	See Attached	
48	All radar components shall be designed to operate and maintain calibration when operated in ambient temperatures from -30 degrees C to + 70 degrees C and in conditions of 0 to 90% relative humidity.	XX	
49	The power cord shall be completely flexible neoprene and will not be over 1/4" in diameter. It will be terminated in a suitable plug whereby the power input is made by means of plugging into the conventional cigarette lighter receptacle of a vehicle. The end of the cord terminating at the display/counting unit will be a removable locking connector.	XX	
50	All electrical connections shall be completely enclosed to prevent shocks and reduce shock hazard.	XX	
51	Each radar unit shall be provided with two (2) tuning forks that are permanently marked with a serial number, the radar transmitter frequency, the associated radar speed in mph, and the corresponding radar speed in kph. The tuning forks shall have factory certification as to accuracy and be accurate to within ± 1 mph of the calibrated frequency.	XX	
52	Each radar unit provided shall respond to the signal from the tuning fork within ± 1 mph.	XX	
53	Each radar unit must be capable of interfacing with all major brands of in-car video systems. Interfacing to the video system will not effect or void radar warranty. Radar manufacturer must be willing to provide all required data to the purchasing agency and/or video manufacturer to accomplish proper interfacing.	XX	

A full and complete set of operating instructions and specifications manual with case law history in the use of traffic radar shall be furnished by the contractor at no additional cost with each unit.

Operator/Instructor training and certification shall be furnished by the contractor at no additional cost with each unit.

The manufacturer agrees to repair or replace (at its discretion) each unit that fails due to defective materials or workmanship for a period of three (3) years from the date of purchase. Bid shall include routine maintenance and repair services for each unit provided for thirty-six (36) months. Indicate name, address, phone number, and the name of a contact person of the nearest repair facility for the radar unit being offered below:

Electronics Unlimited

1345D Blalock

Houston, TX 77065

Contact: Larry Edwards (713) 467-2346

Indicate the average number of days required to perform repairs: 10 Days

ADDITIONAL SPECIFICATIONS FOR TOTALLY WATERPROOF RADARS

BRAND AND MODEL BEING BID: Kustom Signals Golden Eagle Radar System with Dual Ka Band Antennas, Cordless Remote Control, Motorcycle Mount Package, Three Year Warranty and Shipping

In addition to ALL of the above stated specifications the following apply to the waterproof radars.

SPEC #	RADAR SPECIFICATION DESCRIPTION	CHECK APPROPRIATE BOX	
		YES ON RADAR	NO NOT ON RADAR
1	Display/counting unit must be totally waterproof.	See Attached	
2	Waterproof Display/counting unit shall have front mounted switches.	XX	
3	The waterproof radar must have either or both:		
	cordless hand controller	See Attached	
	sealed remote control	XX	
4	The waterproof display/counting unit shall include a digital readout system of the LED type. The digital readout will have the capability of simultaneously displaying patrol speed, target speed, and locked target (or fastest target) speed.	XX	
5	The front of the waterproof display/counting unit shall contain waterproof switches used for radar set up and operation.	See Attached	
6	The display/counting unit must be waterproof and shall allow operation in direct rain. The controls shall be waterproof and will be located on the front panel. These controls should include the following functions:		
	lock/release	XX See Attached	

RADARS

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VENDOR NAME:

Kustom Signals, Inc.

	xmit/hold select	XX	
	antenna select	XX	
	moving/stationary select	XX	
	range adjust	XX	
	squelch open/close	XX	
	low end patrol speed select	See Attached	
	test	XX	
	speaker volume	XX	
	patrol speed blanking	See Attached	
	display brightness adjust	See Attached	
7	The following controls shall be located in the cordless hand controller:	See Attached	
	REQUIRED		
	Lock/Release	N/A	
	Antenna select	N/A	
	Fastest target on/off	N/A	
	Test	N/A	
	Same/opposite select	N/A	
	PREFERRED		
	xmit/hold select	N/A	
	moving/stationary select	N/A	
	range adjust	N/A	
	squelch open/close	N/A	
	low end patrol speed select	N/A	
	speaker volume adjust	N/A	
	Patrol speed blanking - the hand controller and/or the switched display shall incorporate a dual purpose P.S. Blank key. The P.S. Blank key can be used to blank a locked patrol speed or blank the patrol speed window to acquire a new patrol speed.	N/A	
	display brightness adjust	N/A	
	Slower target select - the target slower control shall consist of a momentary switch on the hand control that allows the operator to alternately toggle target slower on or off by momentarily pressing the SLOWER switch. A SLOWER switch that must be constantly held depressed is not acceptable.	N/A	

8	The following controls shall be located on the waterproof sealed remote:	
	lock/release	XX
	xmit/hold select	XX
	antenna select	XX
	fastest target on/off	XX
	same/opposite select	XX
	slower target select	XX

These bid specifications are non-restrictive and do not include any proprietary items, components, circuits, or devices which would preclude any radar manufacturer from producing radar to meet these specifications. All technical tolerances and other specified criteria contained within these specifications are considered to be state-of-the-art and are currently being met by commercially available radar components. The fact that a manufacturer chooses not to produce radar meeting these specifications should not be sufficient cause to adjudge these specifications restrictive.

Bid Evaluation: To insure that this department is able to maintain a speed enforcement program using traffic radar of the highest quality that is supported by a reputable company and to guarantee that this department will get the best value for its money, bids will be evaluated according to the grading scale below. The categories and percentages assigned to each category are as follows:

- | | | |
|----|--|-----|
| 1. | Cost | 45% |
| 2. | Meets required specifications | 25% |
| 3. | Meets preferred specifications | 20% |
| 4. | Technical support, Service, Repair response time, and upgradeability | 5% |
| 5. | Warranty Coverage | 5% |

Price quoted is to include delivery to Sheriff's Department in Williamson County, installation, minimum three (3) year full parts and labor warranty, complete set of operating instructions and specifications manual, and operator/instructor training and certification.


DESCRIPTION	PURCHASE QUANTITY	PURCHASE PRICE INCLUDES WARRANTY	RENTAL QUANTITY	36 MONTH RENTAL INCLUDES WARRANTY
RADAR	1 - 10	\$1,979.00 EA *	1	TOTAL 36 Monthly Pmts \$2,436.48 Total 3 Yearly Pmts \$2,259.69 PER YEAR \$753.23 PER MONTH \$67.68
	11 - 20	\$1,949.00 EA *		
	Additional purchase any quantity from 1 - 20	\$1,929.00 EA *		
WATERPROOF RADAR	1 - 10	\$2,345.00 EA *	1	Total 36 Monthly Pmts \$2,887.20 TOTAL 3Yearly Pmts \$2,677.59 PER YEAR \$892.53 PER MONTH \$80.20
	11 - 20	\$2,245.00 EA *		
	Additional purchase any quantity from 1 - 20	\$2,215.00 EA *		

* Purchase and lease prices above do not include installation. Installation service is available for \$200.00 per system.

WILLIAMSON COUNTY BID FORM**ONE OR MORE Ka BAND RADAR UNITS FOR
THE WILLIAMSON COUNTY LAW ENFORCEMENT DEPARTMENTS****BID NUMBER: 01WC314 BID OPENING DATE & TIME: MARCH 6, 2001 - 2:00 PM**

The undersigned, by his/her signature, represents that he/she is authorized to bind the bidder to fully comply with the terms and conditions of the attached Invitation for Bid, Specifications, and Special Provisions for the amount(s) shown on the accompanying bid sheet(s). By signing below, you have read the entire document and agreed to the terms therein.

NAME OF BIDDER: MPH Industries, Inc.**Mailing Address:** 316 East 9th Street**City:** Owensboro **State:** KY **Zip:** 42303**Email Address:** info@mphindustries.com**Telephone:** (800) 835-0690 **Fax:** (270) 685-6288

 **Date of BID:** 3-5-01
Signature of Person Authorized to Sign BID

Name and Title of Signer: Clyde Potts, Operations Manager
(Please Print or Type)**PLEASE COMPLETE THE FOLLOWING:**

Prompt Payment Discount: 0 % 0 days. (If no discount is offered, Net 30 will apply.)
[] "all or none" basis. (Will accept award of "all" items only. If left blank, low item will apply.)
[x] low item basis. (Will accept award on "any or all" items.)
List Additional Limitations if applicable: _____

DO NOT SIGN OR SUBMIT THIS FORM
WITHOUT READING ENTIRE DOCUMENT

THIS FORM MUST BE COMPLETED, SIGNED AND RETURNED WITH BID

**WILLIAMSON COUNTY
BID SPECIFICATIONS/BID SHEETS**

ONE OR MORE Ka BAND RADAR UNITS

ALL radars shall conform to the National Highway Traffic Safety Administration (NHTSA) "Model Minimum Performance Specifications for Police Traffic Radar Devices", shall be on the latest published Consumer Products List (CPL) of the International Association of Chiefs of Police (IACP), and shall operate on a frequency of 33.4 to 36.0 GHz, Ka band.

The design of the radar unit shall use state-of-the-art technology including Ka-band operation with all signal processing performed by a Digital Signal Processing microprocessor allowing future software upgrades by replacing a plug-in memory module.

The specifications provide for a Doppler radar that shall operate either in stationary or moving mode.

In stationary mode, the radar shall measure, compute, and display the speed of either an approaching or receding target vehicle from a stationary position.

In opposite lane moving mode, the radar shall measure, compute, and display the speed of either an opposite lane approaching target or an opposite lane receding target.

In same lane moving mode, the radar shall measure, compute, and display the speed of

1. A rearward same lane approaching target,
2. A rearward same lane receding target,
3. A forward same lane approaching target, or
4. A forward same lane receding target.

The basic design of all equipment offered shall have been in full commercial production. No "brand new" or prototype models will be considered.

Upon request by Williamson County bidder shall furnish a complete sample unit for examination and testing within ten (10) calendar days.

The radar may be field and laboratory tested to determine its level of performance and conformity to specifications. Emphasis will be given to the radar's ability to maintain a stable target speed reading, without displaying extraneous false readings while subjected to interference from the following: high powered television stations, other radio frequency interference sources including UHF, VHF, and HF transmitters, automobile alternators, ignition and electrical systems, automobile air conditioners, fan motors, high voltage power lines, traffic signals, neon lights, etc.

All radar units furnished under any resulting contract shall be factory certified as to their accuracy with test procedures in conformance with the National Bureau of Standards.

BID STALKER DUAL SL RADAR OR EQUAL.

RADAR SPECIFICATIONS**BRAND AND MODEL BEING BID:** MPH Industries Python Series II FS with two waterproof

Ka-band antennas

SPEC #	RADAR SPECIFICATION DESCRIPTION	CHECK APPROPRIATE BOX	
		YES ON RADAR	NO NOT ON RADAR
1	Shall have a front antenna and a 4-foot antenna cable with connectors at both ends	X	
2	Shall have a rear antenna and a 16-foot antenna cable with connectors at both ends	X	
3	Display/Counting unit with a removable cigarette power cord		X
4	Cordless hand controller		X
5	Two (2) tuning forks	X	
6	Required mounting hardware	X	
7	Upon operator demand, the display shall have the ability to display installed software version and transmitter frequency in the LED windows.		X
8	Upon operator demand, the display shall indicate power input voltage and internal operating temperature in the LED windows.		X
9	The radar shall provide a minimum range of 1 mile on a straight open 2 lane road with an average sized car.	X	
10	The radar shall operate within the Ka band at a frequency between 33.4 and 36.0 GHz.	X	
11	The antenna type will be a circular polarized conical horn.	X	
12	To minimize noise and maximize reliability, the antenna mixer shall be of the double balanced type using beamlead diodes. Waveguide cartridge diodes are not acceptable.		X
13	The maximum antenna beam width shall not exceed 13 degrees between the -3 dB power points of the main lobe of the microwave beam, relative to maximum power at the center of the beam. The minimum beam width shall be approximately 11 degrees. The side lobes shall be approximately -25 dB below the main beam.	X	
14	Maximum dimensions for the antenna are: 2.50" diameter x 4.60" length	X	

15	The antenna shall be designed to be waterproof by using O-ring seals at all external joints such as lens/housing, connector/housing, or cable/housing. Silicone rubber sealing is not acceptable due to aging break down.	X	
16	The antenna shall be of modular construction to facilitate repair of the integrated circuits and transistors mounted on circuit boards.	X	
17	For ease of installation and repair, the antenna cable shall have a removable locking connector at both ends.	X	
18	The antenna shall receive the reflected radar signal and convert the radar signal to a Doppler analog signal. The antenna shall then convert the Doppler analog signal to a Doppler digital signal prior to sending it to the counting unit for processing. The transmission of a digital Doppler signal is not as susceptible to noise induced by the auto ignition and 2-way radio transmission.		X
19	Each antenna shall independently perform its own Doppler analog-to-digital-conversion prior to sending the digital Doppler signal to the counting unit.		X
20	The display shall include a digital readout system of the LED type. The digital readout shall have the capability of simultaneously displaying patrol speed, target speed, and locked target (or fastest target) speed.	X	
21	All legends on the waterproof display/control unit must be backlit to allow night viewing of the switch function in the absence of ambient light	X	
22	The display LED brightness must be adjustable by an accessible operator control. Because operator tastes vary, automatic LED brightness controls are not acceptable.	X	
23	The display unit shall be of modular construction to facilitate repair of the integrated circuits and transistors mounted on circuit boards.	X	
24	Maximum dimensions for the display/counting unit are: 2.3" height x 5" depth x 7" width.	X	
25	For ease of installation and repair, the display/counting unit shall have removable locking connectors at all cable entry points.	X	
26	The speaker for the Doppler audio should be located in the display unit and shall have an adjustable level control located on the front of the display unit.	X	
27	Operator validation of target Doppler audio versus noise shall be by square wave audio whose pitch does not vary with patrol speed. Since audio tones do not vary with patrol speed, the operator learns to correlate this true Doppler audio with target speed, eliminating the need of constantly watching the display to determine target speed.		X

28	The operator should be able to easily determine that the target is approaching or retreating by listening to the Doppler audio increase or decrease in loudness. The Doppler audio loudness shall be directly proportional to the target size and the target range.	X	
29	To verify all displays are in working order, the display unit shall momentarily light all LED segments upon power-up.	X	
30	An operator initiated self-test shall perform accuracy verification of all counting unit internal time bases used for speed computation. Any detected malfunction will result in a "FAIL" indication.	X	
31	An operator initiated self-test shall perform a diagnostic self test of the digital signal processor (DSP), random access memory (RAM), and associated processor logic. Any detected malfunction will result in a "FAIL" indication.	X	
32	An operator initiated self-test shall perform a comprehensive test on the selected antenna by the counting unit to ensure the integrity of the antenna cable and antenna electronics. Any detected malfunction will result in a "FAIL" indication.		X
33	An automatic self-test should be performed not less than every 3 minutes and not more than every 15 minutes with either a visual or audible indication of successful completion of the test. However, it is not acceptable for a visual self-test operation to replace or to interfere with a target speed on the readout.	X	
34	To prevent obsolescence, the display/counting unit shall have a replaceable plug-in memory module to allow future model improvements to be incorporated into existing units.	X	
35	The display/counting unit uses Fast Fourier Transforms to process the digital Doppler signal to determine speed and acceptable signal-to-noise ratio before digitally displaying the target speed and/or patrol speed and/or lock speed on the LED's of the display unit.	X	
36	The radar shall be accurate through its range within ± 1 mph in stationary mode and ± 2 mph in moving mode. The system will truncate or round down the target speed to the nearest whole number.	X	
37	The radar must have sufficient processing ability to track and display speeds to at least 200 mph.	X	
38	In stationary mode, the display unit shall normally read from 12 mph to 200 mph. A stationary mode display from 2 mph to 200 mph is optional and field selectable.		X
39	In opposite lane moving mode, the display unit shall have the capability of acquiring patrol speed from 5 mph to 70 mph. For 5 mph patrol speed, target speed may be displayed from 20 mph to 195 mph. For 70 mph patrol speed, target speed may be displayed from 35 mph to 130 mph.		X

40	In same lane moving mode, the display unit shall have the capability of acquiring patrol speed from 5 mph to 70 mph. The same lane target speed is $\pm 70\%$ of patrol speed to within 5 mph of patrol speed, i.e., for a patrol speed 50 mph, a target between 15 mph to 45 mph and 55 mph to 85 mph can be measured.		X
41	Once the patrol speed is acquired, the radar shall have the ability to track patrol speed up to 200 mph.		X
42	The radar shall come standard with the ability to display a fastest target in addition to the conventional strongest target. Operation where the fastest display replaces the strongest display is not acceptable. Both the strongest and the fastest targets must be displayed simultaneously. Locking of the fastest target cannot be accomplished until it becomes the strongest target. The fastest feature can be field enabled/disabled.	X	
43	The fastest control shall consist of a momentary switch on the hand controller that allows the operator to alternately toggle fastest on or off by momentarily pressing the FASTEST switch. A FASTEST switch that must be constantly held depressed is not acceptable.		X
44	The radar shall come standard with a patrol speed harmonic LED indicator. The harmonic LED indicator can be field enabled/disabled.		X
45	The radar shall come standard with the ability to display speeds in either English or Metric units. This feature can be easily changed in the field.	X	
46	To eliminate hand controller cable breakdown, the radar shall come standard with a hand controller that is cordless and uses infra-red light for transmission of switch closures to the display/counting unit.		X
47	The following controls shall be located in the cordless hand controller:		
	REQUIRED		
	Lock/Release	X	
	Antenna select	X	
	Fastest target on/off	X	
	Test		X
	Same/opposite select	X	
	PREFERRED		
	xmit/hold select	X	
	moving/stationary select		X
	range adjust		X
	squelch open/close		X
	low end patrol speed select		X
	speaker volume adjust		X

	Patrol speed blanking - the hand controller and/or the switched display shall incorporate a dual purpose P.S. Blank key. The P.S. Blank key can be used to blank a locked patrol speed or blank the patrol speed window to acquire a new patrol speed.		X
	Display brightness adjust		X
	Slower target select - the target slower control shall consist of a momentary switch on the hand control that allows the operator to alternately toggle target slower on or off by momentarily pressing the SLOWER switch. A SLOWER switch that must be constantly held depressed is not acceptable.	X	
48	All radar components shall be designed to operate and maintain calibration when operated in ambient temperatures from -30 degrees C to + 70 degrees C and in conditions of 0 to 90% relative humidity.	X	
49	The power cord shall be completely flexible neoprene and will not be over 1/4" in diameter. It will be terminated in a suitable plug whereby the power input is made by means of plugging into the conventional cigarette lighter receptacle of a vehicle. The end of the cord terminating at the display/counting unit will be a removable locking connector.		X
50	All electrical connections shall be completely enclosed to prevent shocks and reduce shock hazard.	X	
51	Each radar unit shall be provided with two (2) tuning forks that are permanently marked with a serial number, the radar transmitter frequency, the associated radar speed in mph, and the corresponding radar speed in kph. The tuning forks shall have factory certification as to accuracy and be accurate to within ± 1 mph of the calibrated frequency.		X
52	Each radar unit provided shall respond to the signal from the tuning fork within ± 1 mph.	X	
53	Each radar unit must be capable of interfacing with all major brands of in-car video systems. Interfacing to the video system will not effect or void radar warranty. Radar manufacturer must be willing to provide all required data to the purchasing agency and/or video manufacturer to accomplish proper interfacing.	X	

A full and complete set of operating instructions and specifications manual with case law history in the use of traffic radar shall be furnished by the contractor at no additional cost with each unit.

Operator/Instructor training and certification shall be furnished by the contractor at no additional cost with each unit.

The manufacturer agrees to repair or replace (at its discretion) each unit that fails due to defective materials or workmanship for a period of three (3) years from the date of purchase. Bid shall include routine maintenance and repair services for each unit provided for thirty-six (36) months. Indicate name, address, phone number, and the name of a contact person of the nearest repair facility for the radar unit being offered below:

Indicate the average number of days required to perform repairs: 5 Business Days

ADDITIONAL SPECIFICATIONS FOR TOTALLY WATERPROOF RADARS

BRAND AND MODEL BEING BID:

In addition to ALL of the above stated specifications the following apply to the waterproof radars.

SPEC #	RADAR SPECIFICATION DESCRIPTION	CHECK APPROPRIATE BOX	
		YES ON RADAR	NO NOT ON RADAR
1	Display/counting unit must be totally waterproof.		X
2	Waterproof Display/counting unit shall have front mounted switches.	X	
3	The waterproof radar must have either or both:		
	cordless hand controller		X
	sealed remote control		X
4	The waterproof display/counting unit shall include a digital readout system of the LED type. The digital readout will have the capability of simultaneously displaying patrol speed, target speed, and locked target (or fastest target) speed.	X	
5	The front of the waterproof display/counting unit shall contain waterproof switches used for radar set up and operation.		X
6	The display/counting unit must be waterproof and shall allow operation in direct rain. The controls shall be waterproof and will be located on the front panel. These controls should include the following functions:		
	lock/release		X

	xmit/hold select		X
	antenna select		X
	moving/stationary select	X	
	range adjust	X	
	squelch open/close	X	
	low end patrol speed select		X
	test	X	
	speaker volume	X	
	patrol speed blanking	X	
	display brightness adjust		X
7	The following controls shall be located in the cordless hand controller:		
	REQUIRED		
	Lock/Release	X	
	Antenna select	X	
	Fastest target on/off	X	
	Test		X
	Same/opposite select	X	
	PREFERRED		
	xmit/hold select	X	
	moving/stationary select		X
	range adjust		X
	squelch open/close		X
	low end patrol speed select		X
	speaker volume adjust		X
	Patrol speed blanking - the hand controller and/or the switched display shall incorporate a dual purpose P.S. Blank key. The P.S. Blank key can be used to blank a locked patrol speed or blank the patrol speed window to acquire a new patrol speed.		X
	display brightness adjust		X
	Slower target select - the target slower control shall consist of a momentary switch on the hand control that allows the operator to alternately toggle target slower on or off by momentarily pressing the SLOWER switch. A SLOWER switch that must be constantly held depressed is not acceptable.	X	

8	The following controls shall be located on the waterproof sealed remote:	
	lock/release	X
	xmit/hold select	X
	antenna select	X
	fastest target on/off	X
	same/opposite select	X
	slower target select	X

These bid specifications are non-restrictive and do not include any proprietary items, components, circuits, or devices which would preclude any radar manufacturer from producing radar to meet these specifications. All technical tolerances and other specified criteria contained within these specifications are considered to be state-of-the-art and are currently being met by commercially available radar components. The fact that a manufacturer chooses not to produce radar meeting these specifications should not be sufficient cause to adjudge these specifications restrictive.

Bid Evaluation: To insure that this department is able to maintain a speed enforcement program using traffic radar of the highest quality that is supported by a reputable company and to guarantee that this department will get the best value for its money, bids will be evaluated according to the grading scale below. The categories and percentages assigned to each category are as follows:

- | | | |
|----|--|-----|
| 1. | Cost | 45% |
| 2. | Meets required specifications | 25% |
| 3. | Meets preferred specifications | 20% |
| 4. | Technical support, Service, Repair response time, and upgradeability | 5% |
| 5. | Warranty Coverage | 5% |

Price quoted is to include delivery to Sheriff's Department in Williamson County, installation, minimum three (3) year full parts and labor warranty, complete set of operating instructions and specifications manual, and operator/instructor training and certification.

DESCRIPTION	PURCHASE QUANTITY	PURCHASE PRICE INCLUDES WARRANTY	RENTAL QUANTITY	36 MONTH RENTAL INCLUDES WARRANTY
RADAR	1 - 10	\$1995.00	1	TOTAL
				PER YEAR
				PER MONTH
	11 - 20	\$1945.00		
	Additional purchase any quantity from 1 - 20	\$1995.00		
WATERPROOF RADAR	1 - 10	\$2195.00	1	TOTAL
				PER YEAR
				PER MONTH
	11 - 20	\$2145.00		
	Additional purchase any quantity from 1 - 20	\$2195.00		

*Monthly lease payment at \$1995.00 each = \$72.12 per month/per unit

*Monthly lease payment at \$2195.00 each = \$79.35 per month/per unit

REFERENCES

1. Gentry Police Department, 100 East Main, Gentry, AR 72734
Contact: Chief Keith Smith phone: 501-736-8400
2. Purvis Police Department, 136 Shelby Sprights, Purvis, MS 39475
Contact: James Delk phone: 601-794-6512
3. Pittman Center Police Department, Sevierville, TN 37862
Contact: David Carver phone: 865-436-5499

AGENDA ITEM 24

Consider approving proposed final construction budget for Juvenile Facility.

Sonne Person and Mike Mason with FTWOODS Construction discussed the construction budget for the Juvenile Facility.

Moved: **Commissioner Livamer**

Seconded: **Judge Doerfler**

Motion: To approve the proposed final construction budget for Juvenile Facility.

Vote: **5 - 0**

< Attachment >