

12-406 Homing Test Set



- Checks angular displacement and sensitivity of all current homing and DF equipment/systems
- Versatile operation for quick and easy systems
- Compact, lightweight instrument in portable shower-proof metal case
- Powered by fully rechargeable batteries

With access to the antennas for either homing or DF systems, the Homing Test Set Model 12-406 can quickly and easily check the correct functioning of the equipment.

By simply selecting any one of the relevant distress frequencies 121.5MHz, 156.8 MHz, 243MHz the Homing Test Set simulates a beacon at 0°, 22.5° or 45° both left and right.

Sundry test frequencies of 121.65, 156.3 and 243.3 MHz may also be selected together with varying input levels. Replaceable phase links ensure that systems with varying antenna spacing may also be checked and a look-up table of left/right sensitivity with channel frequency is provided. Battery recharging is by simple connection to a 28V DC line supply.

Specification

Output Power

-90dBm (10uv) divided equally between two antenna connectors.

Frequencies

| Distress | Test |
|----------|--------|
| 121.5 | 121.65 |
| 156.8 | 156.3 |
| 243 | 243.3 |

Angular Displacement Relative to 243 MHz Ahead

| | |
|------------|---------------------|
| 1/2 f.s.d. | 22.5° left or right |
| f.s.d. | 45° left or right |

Antenna spacings of 305mm or 508mm are selectable by appropriate phase link.

Battery Operating Life

5 hours

Battery Charger Supplies

Charge current 28V DC input <200mA

Portable 406 SAR Decoder 12-406-7



Portable 406 SAR Decoder

12-406-7

- Instantaneous 406 MHz detection and decoding
- Fully portable
- Self contained
- Full daylight readability NVG option
- Six hours battery life before re-charge

The need to detect and locate downed aircrew has always existed. Accurately pin-pointing both aircraft and crew can sometimes necessitate a lengthy search scenario. With the increased population of 406 MHz beacons worldwide, including those with embedded GPS, there exists a requirement for land or airborne search and rescue (SAR) forces to effect immediate rescue of their resources.

The Techtest 12-406-7 has been specifically designed to detect, locate and verify any 406 MHz beacon including ELT or CPI/ADELTA and EPIRBs.

The unit is a self-contained battery portable unit, encompassing a complete 406 MHz decoder, display and portable antenna. Housed within a ruggedised travelling case of a size suitable for lap top operation, the unit will receive and decode all types of search and rescue (SAR) 406 MHz messages.

Continuous monitoring of 406 MHz frequencies and display of beacon hexadecimal codes; and in the event of beacon incorporating GPS, the decoder will display the applicable lat/long co-ordinates. The unit will display up to a minimum of ten individual beacon codes, including ID numbers, on an LCD graphic display, black and white VGA, to enable rescue services to allocate resources accordingly.

Specification

Electrical Specification

| | |
|----------------|-----------------------|
| Lighting | Display backlighting |
| Display | Black and white ¼ VGA |
| Mains charging | IEC 220-240 Volts |

Connector Type

| | |
|-------------------------|------------------------|
| Internal battery supply | 12V |
| Antenna | 406MHz portable dipole |
| Receiver Sensitivity | -83dBm |
| RF Connector | BNC (Female) |

Mechanical Specification

| | |
|---------------------|--------------------------------------|
| Dimensions (closed) | 361×290×165mm (14.2×11.4×6.5 inches) |
| Weight | 6.0kg nominal |

Frequency of Operation

| | |
|----------|----------------------|
| Decoding | 406.025, 406.028 MHz |
|----------|----------------------|



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Full NVIS Compatibility S.A.R. Homing System Series 406-2-053

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**Techtest
Limited**

Advanced
test and
measuring
equipment



Full NVIS Compatibility S.A.R. Homing System

Series 406-2-053

Features

- Full compatibility with night vision systems.
- Unique frequency coverage.
- Continuously monitors distress frequencies.
- Requires only one pair of antennas.
- Modular construction.
- Lightweight.
- Self-contained.
- Low life cycle costs.

General Description

The 406 Series S.A.R. Homing System is a complete, self-contained unit interfacing with a single pair of antennas to provide 'left/right' steering information on a transmission source.

Designed to monitor four distress frequencies – 121.5, 156.8, 243.0 and 406.025 MHz – the unit processes the information and displays it on an analogue indicator. Should homing be selected against a particular frequency, monitoring of the other frequencies is maintained.

Construction of the unit is modular providing distinct advantages, whereby the receiver can be remotely mounted and operated via a cockpit mounted controller or via selected cockpit interfaces, allowing interface with external radio systems.

Electrical Specification

| | |
|-----------------------|---|
| Supply Voltage | 22/32V DC |
| Current Drain | Less than 300mA at 28V (continuous) |
| Lighting | 5V or 28V Green NVIS General services choice of white or red for non NVIS units. |
| C.C.S. Output | 1Vrms into 600 Ohms unbalanced |
| Sensitivity | VHF – 1.5 μ V FM – 1.5 μ V UHF – 2.5 μ V 406 – 4.0 μ V |
| VSWR | less than 2.0 : 1 |
| Full Scale Deflection | 150mV meter drive into 1000 Ohms |

Frequency of Operation

| | |
|----------------|---|
| Type 406-2-053 | 121.5, 156.8, 243.0, 406.025 MHz plus an additional channel at a frequency \pm 1 MHz of the above distress frequencies. |
|----------------|---|

Mechanical Specification

When close coupled, the unit will measure 147mm by 67mm by 155mm.

| | |
|--------------------|-------------------------------|
| RF Connectors | TNC (Female) |
| Multipin Connector | 10 way plug |
| Mating Connector | PX6-12-10SN-R/S or equivalent |
| Weight | 900gms nominal |



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Delivering real-time SAR 406 decode and position

Homer Decoder 406/407 series



Techtest
Limited

Emergency
Location
and Rescue
Equipment



Homer Decoder 406/407 Series

- ▣ Instantaneous 406 MHz detection and decoding
- ▣ Full homing and direction finding capability with display of bearing and distance
- ▣ NVG compatibility and full daylight readability
- ▣ Stand alone system
- ▣ Easy menu driven operation
- ▣ Flexible systems integration
- ▣ Lightweight
- ▣ Self-contained portable option
- ▣ Low life cycle costs

The need to detect and locate downed aircrew has always existed. Accurately pin-pointing both aircraft and crew can sometimes necessitate a lengthy search scenario. With the increased population of 406 MHz beacons worldwide, including those with embedded GPS, there exists a requirement for land or airborne search and rescue (SAR) forces to effect immediate rescue of their resources.

The Techttest 406/407 Series has been specifically designed to detect, locate and verify any 406 MHz beacon, ELT, or CPI/ADELT.

The 406/407 Series of homer decoders are designed to offer the maximum flexibility of systems installation whilst retaining overall operational integrity.

The homer decoder family consists of five differing options from the fully cockpit mounted real time homer through to a battery portable lap top decoder version for role fit operations. Options exist whereby the homer decoder or decoder can be remotely mounted within the aircraft, with output data displayed on a cockpit display or integrated into the aircrafts EFIS display.

Detection

Independent of the type of homer decoder or decoder selected, the equipment will continuously monitor all 406 MHz frequencies and display beacon hexadecimal codes. In the event of beacons incorporating GPS the homer decoder will display the applicable lat/long coordinates.

Beacon Code Display

The units will display up to a maximum of twelve individual beacon codes, including ID numbers, to enable rescue services to allocate resources accordingly.

Direction Finding

The 406-16 Homer Decoder offers users the opportunity of the addition of a direction finding (DF) facility whereby utilising the aircrafts on-board GPS navigation equipment the homer decoder will give both bearing direction and distance information.

Homing

In the homing mode the 406-16 sequentially scans the distress frequencies and enunciates the selection from 121.5, 243, 156.8, 406.025 MHz or 406.028 MHz. In both modes the unit gives left/right steer information.



The 406-16 is a self-contained receiver decoder designed to interface with a pair of antennas to provide left/right steering information together with additional bearing, steer and distance information being made available to the rescue craft.

In addition the unique decoder function is an enhancement to the already successful Techtest 406 Homing Systems and offers users real time 406 message decoding, with the ability to display up to ten individual beacon codes. If the beacon used incorporates GPS function, the homer decoder will display the applicable lat/long co-ordinates.



The 406-18 is a remotely mounted homing decoder utilising a pair of antennas for homing, and an additional stand alone 406 MHz antenna for the decoding function. This unit relies on the use of an additional cockpit display unit, 407-2, or requires integration with the aircraft's onboard EFIS to display the decoded message.



The Techtest 406-19 has been specifically designed to detect, locate and verify any 406 MHz beacon, ELT or CPI/ADELT. This remotely mounted, self-contained receiver decoder is designed to interface with an additional cockpit display unit, 407-2, or be integrated with the aircraft's onboard EFIS to display the decoded message. The unit utilises a single 406 MHz antenna, either a low speed whip antenna or a supersonic blade antenna for high speed military aircraft.



The Techtest 407-2 is a dual function display, which can be used with either the 406-18 remote homer decoder, or 406-19 remote decoder. The 407-2 is a low-profile light-weight unit with easy to use mode and scroll functions; incorporating an LCD graphic display (negative blue 128 x 64 pixels)



The Techtest 12-406-7 has been specifically designed to detect, locate and verify any 406 MHz beacon, ELT or CPI/ADELT. The unit is a self-contained battery portable unit, encompassing a complete decoder, display and portable antenna. Housed within a ruggedised traveling case of a size suitable for lap top operation, the unit will receive and decode all types of search and rescue (SAR) 406 MHz message.

The 12-406-7 provides continuous monitoring of 406 MHz frequencies and display of beacon hexadecimal codes; and in the event of beacons incorporating GPS, the decoder will display the applicable lat/long co-ordinates. The unit will display up to a maximum of ten individual beacon codes, including ID numbers, on an LCD graphic display, (black and white VGA), to enable rescue services to allocate resources accordingly.

406-16 Specification

Electrical Specification

| | |
|--------------------|---|
| Supply Voltage | 22/32V DC |
| Current Drain | Less than 500mA at 28V (continuous) |
| Lighting | 5V or 28V Green NVG, general service. Choice of white or red for non NVG units |
| CCS output | 1Vrms into 600Ω unbalanced |
| Homing Sensitivity | VHF 1.5μV FM 1.5μV UHF 2.5μV 406 0μV |
| Decode Sensitivity | 1.5μV |
| VSWR | Less than 2.0 : 1 |

Mechanical Specification

| | |
|--------------------|--------------------|
| Dimensions | 147×67×155mm |
| RF Connectors | TNC (Female) |
| Multiple Connector | 19 way plug |
| Mating Connector | MIL-C-26482-14-19S |
| Weight | 900g nominal |

Frequency of Operation

| | |
|----------|---|
| Homing | 121.5, 156.8, 243.0, 406.025, 406.28MHz, plus additional test channels |
| Decoding | 406.025, 406.028 MHz |

406-18 Specification

Electrical Specification

| | |
|--------------------|---|
| Supply Voltage | 22/32V DC |
| Current Drain | Less than 500mA at 28V (continuous) |
| CCS output | 1Vrms into 600Ω unbalanced |
| Homing Sensitivity | VHF 1.5μV FM 1.5μV UHF 2.5μV 406 0μV |
| Decode Sensitivity | -83dBm |
| VSWR | Less than 2.0 : 1 |

Mechanical Specification

| | |
|---------------------|--|
| Dimensions | Length 254mm (10 inches) Width 146.5mm (5.76 inches) Height 55mm (2.16 inches) |
| RF Connectors | TNC (Female) |
| Multipin Connectors | 19 way socket and 32 way plug |
| Mating Connectors | MIL-C-26482-14-19P and MIL-C-26482-14-32S |
| Weight | 1.6kg nominal |
| Homing | 121.5, 156.8, 243.0, 406.025, 406.28 MHz, plus additional test channels |
| Decoding | 406.025, 406.028 MHz |

406-19 Specification

Electrical Specification

| | |
|--------------------|-------------------------------------|
| Supply Voltage | 22/32V DC |
| Current Drain | Less than 500mA at 28V (continuous) |
| Decode Sensitivity | -83dBm |

Mechanical Specification

| | |
|---------------------|--|
| Dimensions | Length 254mm (10 inches) Width 146.5mm (5.76 inches) Height 55mm (2.16 inches) |
| RF Connector | TNC (Female) |
| Multipin Connectors | 19 way socket and 32 way plug |
| Mating Connectors | MIL-C-26482-14-19P and MIL-C-26482-14-32S |
| Weight | 1.1kg nominal |

Frequency of Operation

| | |
|----------|----------------------|
| Decoding | 406.025, 406.028 MHz |
|----------|----------------------|

407-2 Specification

Electrical Specification

| | |
|----------------|---|
| Supply Voltage | 22/32V DC |
| Current Drain | Less than 500mA at 28V (continuous) |
| Lighting | 5V or 28V Green NVG, general service. Choice of white or red for non NVG units |
| Slave Output | RS422 |

Display

| | |
|---------------------|---------------------------------|
| LCD graphic display | 128 × 64 pixels (negative blue) |
| Connector | 19 way plug |
| Mating Connector | MIL-C-26482-14-19S |

12-406-7 Specification

Electrical Specification

| | |
|-------------------------------|------------------------|
| Supply Voltage | 12volts |
| Lighting | Display backlighting |
| Display | Black and white ¼ VGA |
| Mains charging connector type | IEC 220-240 Volts |
| Antenna | 406MHz portable dipole |
| Receiver Sensitivity | -83dBm |
| RF Connector | BNC (Female) |

Mechanical Specification

| | |
|---------------------|--------------------------------------|
| Dimensions (closed) | 361×290×165mm (14.2×11.4×6.5 inches) |
| Weight | 6.0kg nominal |

Frequency of Operation

| | |
|----------|----------------------|
| Decoding | 406.025, 406.028 MHz |
|----------|----------------------|