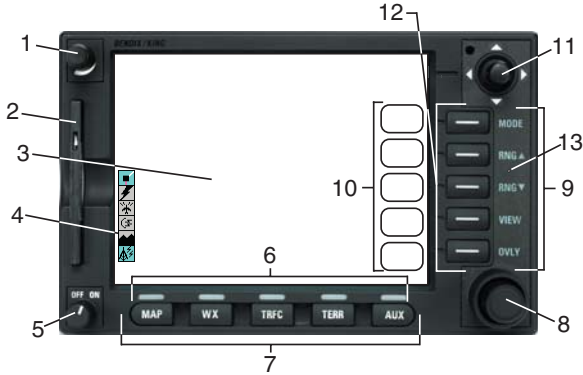# Honeywell

# BENDIX/KING®

# KMD 550/850 Multi-Function Display
# Quick Reference
## For Software Version 02/02 and Later



1. Brightness Control
2. Data Card
3. Display
4. Available Functions Legend
5. On/Off Control
6. Selected Function Indicators
7. Function Select Keys
8. Control Knobs (Inner and Outer Knob)
9. Power Labels
10. Soft Labels
11. Joystick
12. Power Keys
13. Fault Indicator

## FUNCTION SELECT KEYS



| Topo On Map | WX Radar* | TAS/TCAS | EGPWS | Setup Pages |
| Topo Off Map | Stormscope | | | External NTSC Video |
| | Datalink Wx Graphical Products | | | |
| | Datalink Wx Textual Products | | | |

## AVAILABLE FUNCTIONS ICONS

| Icon | Description |
|------|-------------|
| | Flight plan information being received and displayed. |
| | Flight plan information being received but not displayed. |
| | Stormscope® info being received and displayed. |
| | Stormscope® info being received and displayed. Strikes have occurred within 25 nm. |
| | Stormscope® info being received but not displayed. |
| | Stormscope® info being received but not displayed. Strikes have occurred within 25 nm. |
| | Stormscope® info not being received / data invalid. |
| | Standby weather radar being displayed. |
| | Active weather radar being displayed. |
| | Weather radar in standby mode, not being displayed. |
| | Weather radar in active mode, not being displayed. |
| | Weather radar data invalid / not being received. Previously in standby. |
| | Weather radar data invalid / not being received. Previously active. |
| | Standby traffic sensor being displayed. |
| | Active traffic information being displayed. |
| | Traffic sensor in standby mode, not being displayed. |
| | TIS service not available. |
| | Traffic sensor active, not being displayed. |
| | Traffic sensor data invalid / not being displayed. |
| | EGPWS with warnings are enabled, being displayed. |
| | EGPWS with warnings are disabled, being displayed. |
| | EGPWS with warnings are enabled, not being displayed. |
| | EGPWS with warnings are disabled, not being displayed. |
| | EGPWS data invalid / not being received. |
| | Severe Weather Storm track information being received and displayed. |
| | Severe Weather Storm track information being received but not displayed. |
| | Severe Weather Storm track information not being received / data invalid. |

| VDL | XM | Description |
|---|---|---|
| | | No Wx data is currently being received but previously received data is being displayed. |
| | | Wx data is currently being received from a signal and displayed. XM signal is weak. |
| | | Wx data is currently being received from a signal and displayed. XM signal is marginal. |
| | | Wx data is currently being received from a signal and displayed. XM signal is good. |
| | | Wx data not being received nor displayed on present page. |
| | | Wx data is currently being received from a signal but not displayed on present page. |
| | | Fault with connection or data link radio. |
| | | Graphical METAR overlay is available but not displayed. |
| | | Graphical METAR overlay is enabled and displayed. |
| | | Wx data not being received. Graphical METAR overlay is available but not displayed. |
| | | Wx data not being received. Graphical METAR overlay is enabled and displayed. |
| | | Radio Fault. Graphical METAR overlay is available but not displayed. |
| | | Radio Fault. Graphical METAR overlay is enabled and displayed. |
| N/A | No TFR Icon present. | TFR data is not being received. |
| N/A | | TFR data is being received but is not currently being displayed. |
| N/A | | TFR data is being received and displayed. |

| Icon | | Description |
|---|---|---|
| | 0 min – 15 min | Datalink lightning information received and displayed. |
| | 0 min – 15 min | Datalink lightning Information received but not displayed. |
| | 15 min – 30 min | Datalink lightning information received and displayed but data is more than 15 minutes old. |
| | 15 min – 30 min | Datalink lightning information received but not displayed and data is more than 15 minutes old. |
| | Unavailable | Datalink lightning is not being received. |

## INTERACTION OF CONTROLS

| | MAP | WX - Radar | WX - Stormscope® | WX - VDL/XM | TRFC | TERR | AUX |
|---|---|---|---|---|---|---|---|
| **JOYSTICK** | Used to point at any item on map. | Controls **Tilt** and **Track Line.** | Clears Strikes | Used to point at items on map. | Not Active | Not Active | Not Active |
| **MODE** | *Soft Key* labeled **RESET STICK** when joystick is active. | Sequence through **WX, WX/ARL*** and **GND Mapping** modes. | Sequence through **Cell** and **Strike** modes. | Displays **SELECT FIS PRODUCT** Menu. | Sequence through **Relative** and **Absolute** modes. | Selects Terrain Warnings **Inhibited*** or **Enabled*.** | *Soft Key* |
| **RNG ▲** | Active | Active | Active | Active | Active | Active | *Soft Key* |
| **RNG ▼** | Active | Active | Active | Active | Active | Active | *Soft Key* |
| **VIEW** | *Soft Key* labeled **MORE INFO** when joystick is active to get more info about items pointed to on the map. | Sequence through **Horizontal** and **Vertical Profile*** views. | Sequence through **120°** and **360°** views. | Not Active | Sequence through **Normal, Above** and **Below** views. | Sequence through **120°** and **360°** views (Default = **360°**). | *Soft Key* |
| **OVLY** | Active when overlays available. Brings up overlay select *Soft Keys.* | Active when overlays available. Brings up overlay select *Soft Keys.* | Active when overlays available. Brings up overlay select *Soft Keys.* | Active when overlays available. Brings up overlay select *Soft Keys.* | Active when overlays available. Brings up overlay select *Soft Keys.* | Active when overlays available. Brings up overlay select *Soft Keys.* | *Soft Key* |
| **OUTER KNOB** | Rotate to bring up Airport More Info page and select the airport identifier. | Rotate to select **Sby, Tst, On, Set** (Default = **Sby**). | Not Active | Rotate to select report identifier. Also, sequences Graphical Weather Pages. | Rotate to select **Sby, Tst, On, Off.** | Rotate to select **Tst, Nrm, Set** (Default = **Nrm**). | Not Active |
| **INNER KNOB** | Rotate to bring up Airport More Info page and select the airport identifier. | Gain control* | Not Active | Rotate to select report identifier. Also, sequences Graphical Weather Pages. | Rotate to select **Mute On, Mute Off.** | Not Active | Not Active |

* Not available in all configurations

# MAP FUNCTION
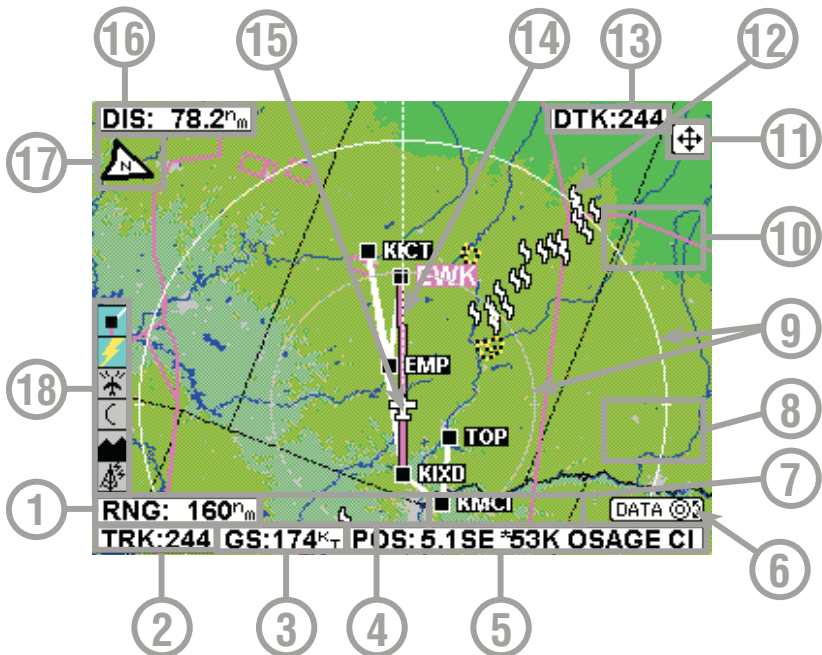


1. **Display Range** - **RNG:####nm**
2. **Current Track** - **TRK:###**
3. **Current Ground Speed** - **GS:###kt**
4. **Distance to Pointer** - **PDIS: ###.#nm**
5. **Position Readout** - Current aircraft position
6. **Control Knob Label** - Indicates Control Knob is active for data entry
7. **Bearing to Pointer** - **PBRG: ###**
8. **MORE INFO Soft Label**
9. **Range Rings** - Outer ring radius is selected range, inner ring radius is one half the selected range
10. **RESET STICK Soft Label**
11. **Joystick Label**
12. **Lightning Overlay**
13. **Desired Track** - Active leg oriented to magnetic desired track (magenta)
14. **GPS Flight Plan Overlay** - Current GPS flight plan
15. **Aircraft Symbol** - Indicates present position. Stylized airplane when heading input is present, a plus symbol with no heading.
16. **Distance to Waypoint - DIS:###.#nm**
17. **North Pointer**
18. **Available Functions** - Displays icons representing data available (black) and displayed (color)

## MAP ICONS

| Feature | Conditions | Map Icons | | Other Characteristics |
|---------|-----------|-----------|---|----------------------|
| | | **TOPO on** | **TOPO off** | |
| Political Boundary | | ▰▰▰ | Not displayed | |
| Railway | | | Not displayed | |
| Roads | Major | 70 | Not displayed | |
| | Prime | 40 | Not displayed | |
| | Other | 35 | Not displayed | |
| Victor Airways | | V261 | V4 | |
| Heliroutes | | CREEK | CREEK | |
| Airspace Boundary | FIR/UIR | UIR | UIR | Boundary label will be **FIR**, **UIR**, or **F/U** per airspace type. |
| | Class A/B/C | B | B | Boundary label will be **A**, **B**, or **C** per airspace type. |
| | Class D/E/F/G | D | D | Boundary label will be **D**, **E**, **F** or **G** per airspace type. |
| | Class Unknown | | | |
| | Danger | DGR | DGR | Boundary label will be **DGR**. |
| | Restricted | RES | RES | Boundary label will be **RES**. |
| | Prohibited | PHB | PHB | Boundary label will be **PHB**. |
| | Temporary Flight Restrictions | TFR | TFR | Boundary label will be **TFR**. |
| | MOA/MATZ | MOA | MOA | Boundary label will be **MOA** or **MATZ** per airspace type. |
| | Other SUA (Radar Area, Alert, Caution, Training, Warning or Unspecified/ Unknown) | ALT | ALT | Boundary label will be **ALT**, **CTN**, **DGR**, **MOA**, **PHB**, **RES**, **TNG**, **WNG**, **ADV**, **CBA**, **TRA**, **TSA**, or **UNK**. |
| Cities | | ◉ | Not displayed | |
| Intersections (INTs) | | ▲ | ▲ | |
| Obstacles | Lighted - Tall | ⚒ | ⚒ | Label will indicate MSL elevation followed by AGL elevation in parentheses [e.g. "1546 (590)"]. Tall is defined as over 1,000 ft. AGL. |
| | Lighted - Short | ⚒ | ⚒ | |
| | Unlighted - Tall | ⚑ | ⚑ | |
| | Unlighted - Short | ⚑ | ⚑ | |
| NDBs | | ◉ | ◉ | |

| Feature | Conditions | Map Icons | | Other Characteristics |
|---|---|---|---|---|
| | | TOPO on | TOPO off | |
| VORs | With DME | | | |
| | Without DME | | | |
| Airports | Hard runway + IFR approach | Line represents primary runway | Line represents primary runway | If the database does not have runways for the airport, then the icon will not indicate a runway (no line will be displayed). |
| | Hard runway, no IFR approach | Line represents primary runway | Line represents primary runway | |
| | IFR approach available | Line represents primary runway | Line represents primary runway | |
| | Soft or unknown runways | Line represents primary runway | Line represents primary runway | |
| Airport Runways | Primary, hard surface | | | Runways are shown for airports within 5 nm of current position and selected range is 10 nm or less. Runway ends are labeled with the proper runway identifier if selected range is 1 nm. |
| | Other hard surface | | | |
| | Primary soft surface | | | |
| | Other soft surface | | | |
| Helipads | | | | |
| VRPs | | | Not displayed | |

## OVERLAYING DATA

### OVERLAY TYPE

| MODE | FLIGHT PLAN | STORMSCOPE® | TRAFFIC | METAR | DATA LINK LIGHTNING | SCIT | TFR |
|---|---|---|---|---|---|---|---|
| MAP - TOPO ON | Yes | Yes[1] | Yes[2] | Yes | No | No | Yes[5] |
| MAP - TOPO OFF | Yes | Yes[1] | Yes[2] | Yes | No | No | Yes[5] |
| WX - Weather Radar | Yes[1] | Yes | Yes[3] | No | No | No | No |
| WX - Stormscope® | Yes[1] | N/A | No | No | No | No | No |
| WX - NEXRAD | Yes | Yes[1] | Yes | No | Yes | Yes | No |
| WX - Precipitation Type[5] | Yes | No | No | No | Yes | Yes | No |
| WX - Freezing Levels[5] | Yes | No | No | No | No | No | No |
| WX - Winds Aloft[5] | Yes | No | No | No | No | No | No |
| WX - Graphical METAR | Yes | No | No | N/A | No | No | No |
| WX - Graphical AIRMET | Yes | Yes[1] | No | No | No | No | No |
| WX - Graphical SIGMET | Yes | Yes[1] | No | No | No | No | No |
| WX - Graphical Convective SIGMET | Yes | Yes[1] | No | No | No | No | No |
| WX - Graphical Wx Watches | Yes[4] | Yes[1, 4] | No | No | No | No | No |
| TERR | Yes | Yes[1] | Yes[2] | No | No | No | No |
| TRFC | Yes[1] | No | N/A | No | No | No | No |

1  Requires remote heading input
2  TCAS/TAS requires remote heading input
3  TIS requires remote heading input
4  Not available with XM
5  Not available with VHF Datalink FIS

# WEATHER RADAR
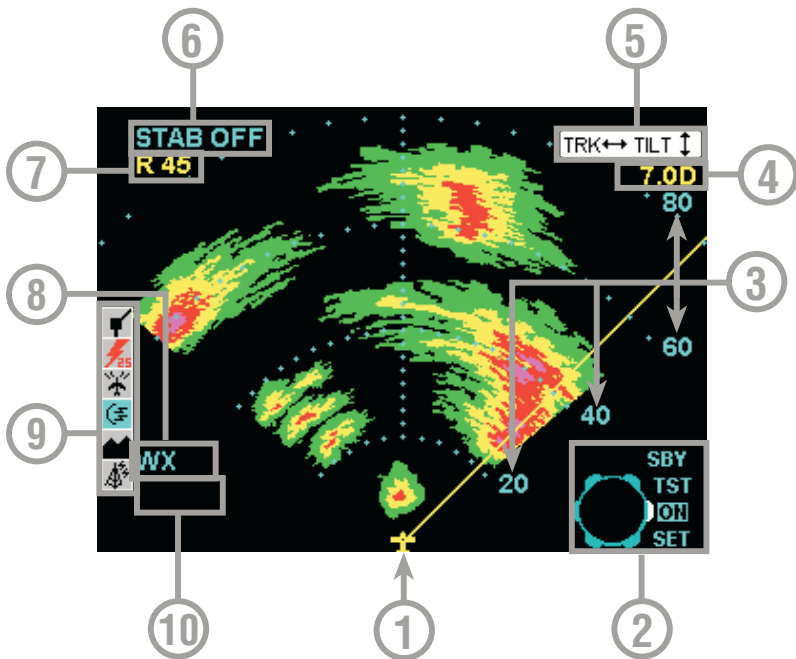


1 **Aircraft Symbol**
2 **Knob Function Label** - Rotating the outer knob selects between Standby (**SBY**), Test (**TST**), **ON** and **SET** modes.
3 **Display Range Indications**
4 **Tilt Angle** - XX.X Degrees up (U) or down (D).
5 **Joystick Function Label** - Moving the joystick up and down adjusts the radar tilt. Moving the joystick left and right adjusts the location of the yellow track line.
6 **Stabilization Indication**
7 **Track Angle**
8 **WX Radar Mode Indication** - **TEST**, **WX**, **WX/ARL** (Auto Range Limiting or **MAP** (Ground Mapping Mode)
9 **Available Functions** - Displays icons representing data available (black) and displayed (color)
10 **Fault Message Window** - See Error and Fault Messages

## AVAILABLE WEATHER RADAR FUNCTION ICONS

| Icon | Description |
|------|-------------|
|  | Standby weather radar being displayed. |
|  | Active weather radar being displayed. |
|  | Weather radar in standby mode, not being displayed. |
|  | Weather radar in active mode, not being displayed. |
|  | Weather radar data invalid / not being received. Previously in standby. |
|  | Weather radar data invalid / not being received. Previously active. |

# STORMSCOPE

## AVAILABLE STORMSCOPE FUNCTION ICONS

| Icon | Description |
|------|-------------|
|  | Stormscope® information being received and displayed. |
|  | Stormscope® information being received and displayed. Strikes have occurred within 25 nm. |
|  | Stormscope® information being received but not displayed. |
|  | Stormscope® information being received but not displayed. Strikes have occurred within 25 nm. |
|  | Stormscope® information not being received / data invalid. |

## LIGHTNING ICONS

### WX-500

| Lightning Icon | Color | Used on Pages | Additional Requirements |
|----------------|-------|---------------|-------------------------|
|  | White | MAP (TOPO-ON or TOPO-OFF) | The small solid icon is used when the display selected range is 25 nm or greater. |
|  | White | WX, TRFC, TERR | |
|  | White Outline | MAP (TOPO-ON or TOPO-OFF) | The large outlined icon is used when the display selected range is less than 25 nm. |
|  | White Outline | WX, TRFC, TERR | |

### WX-1000E

| Lightning Icon | Intensity Level | Color | Used on Pages | Comments |
|----------------|-----------------|-------|---------------|----------|
|  | 1 (Light) | White with black border | MAP, WX, TERR | The small solid icon is used when the display selected range is 25 nm or greater. |
|  | 2 (Moderate) | | | *The WX-1000E indicates areas of lightning detected (not individual discharges). Light activity (level 1) is an area with up to 8 strikes/minute; moderate (level 2) is an area with 9-25 strikes/minute and heavy (level 3) is an area with 26 or more strikes/minute.* |
|  | 3 (Heavy) | | | |
|  | 1 (Light) | White with black border | MAP, WX, TERR | The large outlined icon is used when the display selected range is less than 25 nm. |
|  | 2 (Moderate) | | | *The larger icon reminds the user that the accuracy of lightning placement is not as good as that suggested by the map scale.* |
|  | 3 (Heavy) | | | |

# FIS VDL AND XM
# DATALINK WEATHER



No AWWs for XM

** NEXRAD Composite with XM
NEXRAD Base with VDL



** NEXRAD Composite with XM
NEXRAD Base with VDL

No AWWs for XM

## SUBSCRIBING TO VDL SERVICES

*NOTE: The following details require selection of a KDR-510 as the source for datalink weather data.*

```
┌─────────────────────┐      ┌─────────────────────┐      ┌─────────────────────────┐
│ Get Display ID      │ ───► │ Go to Bendixking.com│ ───► │ Enter Display ID during │
│ from unit in airplane│      │ or call 1-800-247-0230│    │ registration            │
│                     │      │ to subscribe to FIS Services│ (This is only required first│
│                     │      │                     │      │ time you subscribe)     │
└─────────────────────┘      └─────────────────────┘      └─────────────────────────┘
```

```
┌─────────────────────┐      ┌─────────────────────┐      ┌─────────────────────────┐
│ Select the desired  │ ───► │ Receive Subscription│ ───► │ Take printed out code(s)│
│ services            │      │ Code(s) and print them│    │ to the airplane and enter│
│                     │      │ out                 │      │ code(s) on the FIS Subscription│
│                     │      │                     │      │ Status Page             │
└─────────────────────┘      └─────────────────────┘      └─────────────────────────┘
```

```
┌─────────────────────────┐      ┌─────────────────────┐
│ Update Data Card if needed.│ ─► │ Enjoy flying with FIS│
│ Update at least once per year│   │ Services!           │
│ to ensure continued FIS Services│ │                   │
└─────────────────────────┘      └─────────────────────┘
```

## SETTING UP A VDL SUBSCRIPTION
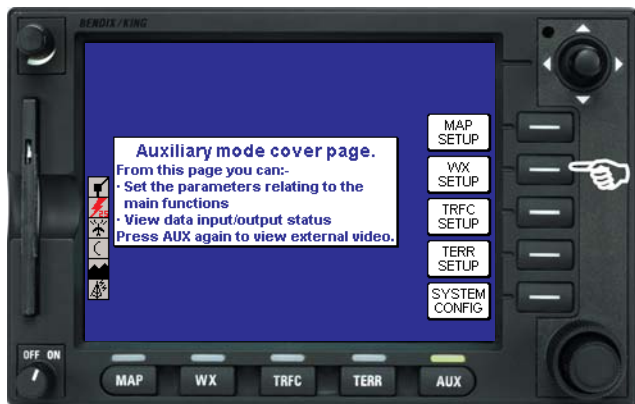
Note the FIS Display ID and contact Wingman Services at www.bendixking.com or call 1-800-247-0230. This ID is used to obtain the Subscription Code. After obtaining the Subscription Code press the **ADD SUBSCR** Key.
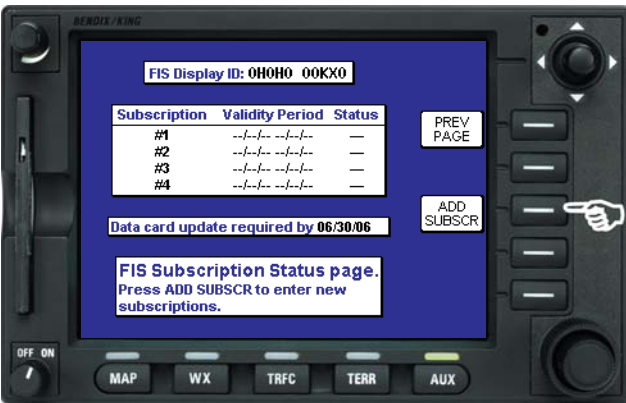
Use the inner knob to enter characters and the outer knob to move to the next field.



After the last character is entered, press the **ENTER** Key. After the subscription is accepted it will be displayed.
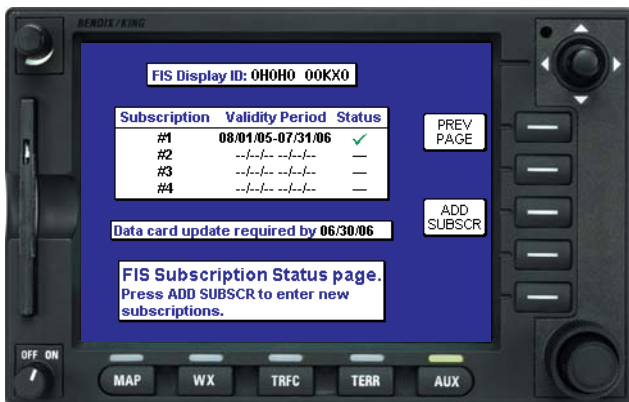
## CHECKING VDL SUBSCRIPTIONS



| Symbol | Status | Description |
|--------|--------|-------------|
| — | Unknown | The system time is not known or no subscription is programed. |
| 🔴 | Future | The current system time is prior to the displayed starting date. This subscription is not valid for enabling access to FIS today but it will become valid at some point in the future. |
| ✓ | Valid | The current system time is after the displayed starting date and before the displayed ending date. |
| ✓ | Almost Expired | The current system time is within seven (7) days of the displayed ending date. |
| ✗ | Expired | The current system time is beyond the displayed ending date. |

*NOTE: Only the validity period for subscriptions is shown on the display. To determine which products are available with each subscription, access the account on Wingman Services at www.bendixking.com.*

## XM WX SUBSCRIPTIONS

An XM subscription must be set up to receive XM WX services. This process involves accessing the XM Radio website and a toll-free phone call to XM Radio.

### SETTING UP AN XM WX SUBSCRIPTION

*NOTE: The following details require selection of an XM receiver (such as a KDR-610) as the source for datalink weather data.*

Setting up an XM WX subsrcription can be accomplished by following these steps:

1a. Retrieve the 8-digit ID from the KDR 610 label (should be attached to the opposite end of the receiver from the connectors)

OR

1b. Apply power to the display and receiver, select the AUX key, the WX Setup softkey, the FIS softkey, and finally the FIS Subscription softkey. Record the 8-digit receiver ID displayed at the bottom of the FIS Subscription Status page.
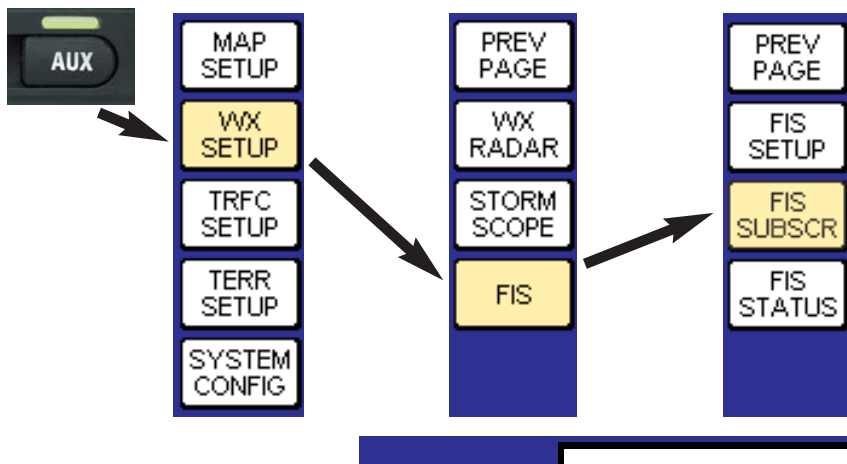


2. Go to the website *www.xmradio.com/weather* to select your weather subscription package.

3. Apply power to the XM receiver, and place the receiver's antenna where the signal can be received from the XM satellites. Make certain the antenna has a good view of the southern horizon.

4. With the Receiver ID and desired subscription package in hand, contact XM Radio at 1-800-985-9200 for assistance in activating your receiver and setting up a weather product subscription. The receiver should remain in view of the satellites during the subscription process.

5. Verify the activation of the receiver and the subscription validity by selecting and viewing the "FIS Subscription Status Page" on the KMD screen.

If for any reason the receiver was not exposed to the XM signal within the initial 24 hour broadcast period, or is not successfully authorized for some other reason, a subsequent 15 minute resend of the subscription information can be obtained. Get the receiver ID (instructions in step 1a or 1b above), go to the website *http://www.xmradio.com/refresh/*, and follow the instructions.

## CHECKING XM WX SUBSCRIPTIONS

To check the FIS XM subscription and receiver status, apply power to the display and receiver, select the **AUX** key, then the **WX SETUP** softkey, the **FIS** softkey, and finally the **FIS SUBSCR** softkey, as in step 1b previously.

The Application IDs are displayed along with the receiver activation and subscription status. The Application IDs provide the groupings of products that are part of the subscription package. Green checkmarks indicate those App IDs or product groups that are contained in the subscription package for the XM receiver. Contact XM Radio at 1-800-985-9200 with the App ID information if the subscribed products are not received and displayed.
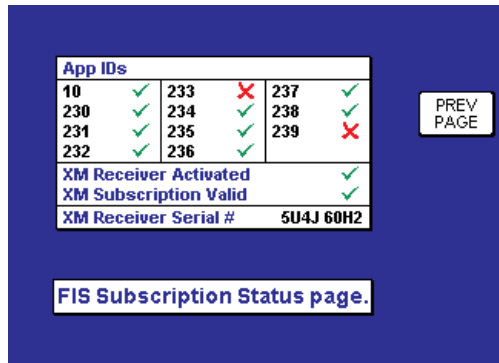
| Symbol | Subscription Status | Description |
|:------:|:-------------------:|:------------|
| —<br>(white) | No Information | The XM FIS receiver subscription information message has not been received. |
| ✘ | Not Subscribed | The user is not authorized for the Application ID. |
| ✔ | Subscribed | The user is authorized for the Application ID. |

| App ID | Product |
|---|---|
| App ID 10 | **Radar Coverage**, **METARs**, County Warnings, City Forecasts |
| App ID 231 | **NEXRAD Radar**, **TAFs, Freezing Level, TFRs** |
| App ID 232 | **SCITs, Lightning**, Storm (Echo) Tops, **Surface Precipitation**, **Winds Aloft**, **AIRMETs**, **SIGMETs**, Cloud Tops |

## AVAILABLE FIS FUNCTION ICONS

| VDL | XM | Description |
|---|---|---|
| | | No Wx data is currently being received but previously received data is being displayed. |
| | | Wx data is currently being received from a signal and displayed. XM signal is weak. |
| | | Wx data is currently being received from a signal and displayed. XM signal is marginal. |
| | | Wx data is currently being received from a signal and displayed. XM signal is good. |
| | | Wx data not being received nor displayed on present page. |
| | | Wx data is currently being received from a signal but not displayed on present page. |
| | | Fault with connection or data link radio. |
| | | Graphical METAR overlay is available but not displayed. |
| | | Graphical METAR overlay is enabled and displayed. |
| | | Wx data not being received. Graphical METAR overlay is available but not displayed. |
| | | Wx data not being received. Graphical METAR overlay is enabled and displayed. |
| | | Radio Fault. Graphical METAR overlay is available but not displayed. |
| | | Radio Fault. Graphical METAR overlay is enabled and displayed. |
| N/A | No TFR Icon present. | TFR data is not being received. |
| N/A | | TFR data is being received but is not currently being displayed. |
| N/A | | TFR data is being received and displayed. |

## NEXRAD PAGE
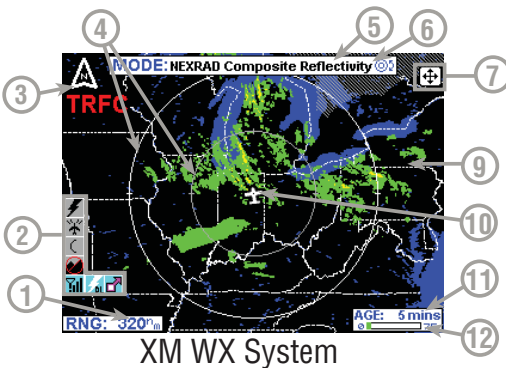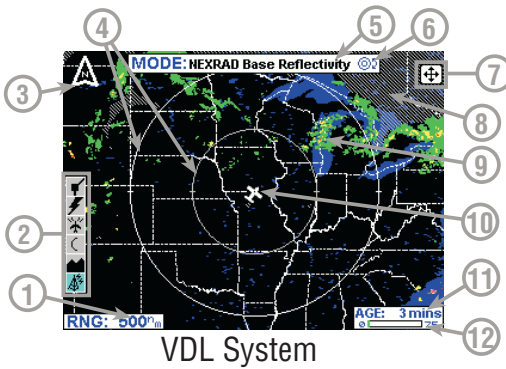


VDL System



XM WX System

1 **Range Scale** - Indicates selected range.

2 **Available Functions** - Displays icons representing data available (black) and displayed (color).

3 **North Pointer** - Indicates north.

4 **Range Rings** - Outer ring radius is selected range and inner ring radius is one half the selected range.

5 **MODE** - Indicates the weather product being displayed.

6 **Control Knob Icon** - Displayed when the Control Knobs are available for cycling through the graphical weather products.

7 **Joystick Label** - Indicates joystick is active and can be used to pan map.

8 **No Coverage Area** - Crosshatch pattern indicates area of no coverage.

9 **Precipitation** - NEXRAD precipitation returns.

10 **Aircraft Symbol** - Indicates present aircraft position and heading (if available) or track.

11 **Age of Data** - Age of the data based on current time minus NEXRAD issue time.

12 **Age Status Bar** - Indicates percentage of age versus elapsed time before expiration. The bar will be green the first 50% then turn yellow.

## NEXRAD INTENSITY

Precipitation intensity is depicted using colors as follows:

| Color | Intensity | Level | dBz |
|-------|-----------|-------|-----|
| Magenta | Intense | Level 5-8 | 50+ dBz |
| Red | Heavy | Level 3-4 | 40-50 dBz |
| Yellow | Moderate | Level 2 | 30-40 dBz |
| Green | Light | Level 1 | 15-30 dBz (VDL) 10-30 dBz (XM) |

| NEXRAD LEGEND | | |
|---------------|-----|-------|
| Intensity | dBZ | Level |
| Intense | 50+ | 5-8 |
| Heavy | 40-50 | 3-4 |
| Moderate | 30-40 | 2 |
| Light | 15-30 | 1 |
| | 0-15 | 0 |
| No Data | | |

## PRECIPITATION TYPE



1. **Range Scale** - Indicates selected range.
2. **Available Functions** - Displays icons representing data available (black) and displayed (color).
3. **Age Status Bar** - Indicates percentage of age versus elapsed time before expiration. The bar will be green the first 50% then turn yellow.
4. **North Pointer** - Indicates north.
5. **MODE** - Indicates the weather product being displayed.
6. **Control Knob Icon** - Displayed when the Control Knobs are available for cycling through the graphical weather products.
7. **Joystick Label** - Indicates joystick is active and can be used to pan map.
8. **Range Rings** - Outer ring radius is selected range and inner ring radius is one half the selected range.
9. **Aircraft Symbol** - Indicates present aircraft position and heading (if available) or track.
10. **No Coverage Data Available** - Indicates there is not any Freezing Levels available in that area.

## PRECIPITATION TYPE COLOR CODING



PRECIP MASK LEGEND

| Light | Heavy |
|-------|-------|

Snow

| Light | Heavy |
|-------|-------|

Mix

| Light | Heavy |
|-------|-------|

Rain

No Data

## FREEZING LEVELS



1 **Range Scale** - Indicates selected range.
2 **Available Functions** - Displays icons representing data available (black) and displayed (color).
3 **Age Status Bar** - Indicates percentage of age versus elapsed time before expiration. The bar will be green the first 50% then turn yellow.
4 **North Pointer** - Indicates north.
5 **MODE** - Indicates the weather product being displayed.
6 **Control Knob Icon** - Displayed when the Control Knobs are available for cycling through the graphical weather products.
7 **Joystick Label** - Indicates joystick is active and can be used to pan map.
8 **Range Rings** - Outer ring radius is selected range and inner ring radius is one half the selected range.
9 **Aircraft Symbol** - Indicates present aircraft position and heading (if available) or track.
10 **Freezing Level Color Key** - Colors indicating Freezing Levels at the height shown.

## FREEZING LEVELS COLOR CODING



| FREEZING LEVELS LEGEND |
|---|
| **100s of feet MSL** |
| **170+** |
| **150-170** |
| **130-150** |
| **110-130** |
| **090-110** |
| **070-090** |
| **050-070** |
| **030-050** |
| **010-030** |
| **Sfc-010** |
| **No Data** |

## WINDS ALOFT



**1 Range Scale** - Indicates selected range.

**2 Available Functions** - Displays icons representing data available (black) and displayed (color).

**3 Age Status Bar** - Indicates percentage of age versus elapsed time before expiration. The bar will be green the first 50% then turn yellow.

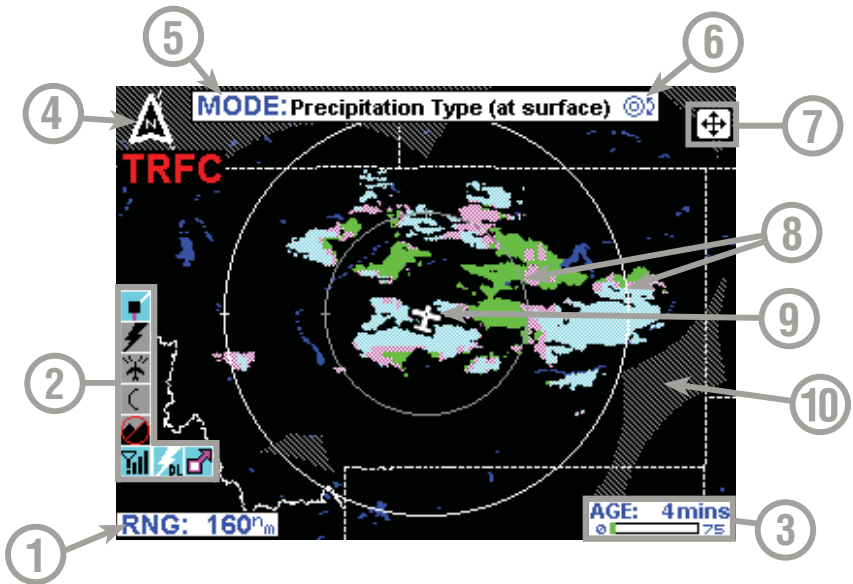**4 North Pointer** - Indicates north.

**5 MODE** - Indicates the weather product being displayed.

**6 Control Knob Icon** - Displayed when the Control Knobs are available for cycling through the graphical weather products.

**7 Joystick Label** - Indicates joystick is active and can be used to pan map.

**8 Range Rings** - Outer ring radius is selected range and inner ring radius is one half the selected range.

**9 Aircraft Symbol** - Indicates present aircraft position and heading (if available) or track.

**10 FL UP and FL DN** – Increments the Winds Aloft flight level that is being played.

## WINDS ALOFT SCALE

| WINDS ALOFT LEGEND | |
|---|---|
| ○ | CALM |
| | 10 KTS |
| | 20 KTS |
| | 30 KTS |
| | 40 KTS |
| | 50 KTS |
| | 100 KTS |
| No Data | |

# GRAPHICAL METAR PAGE
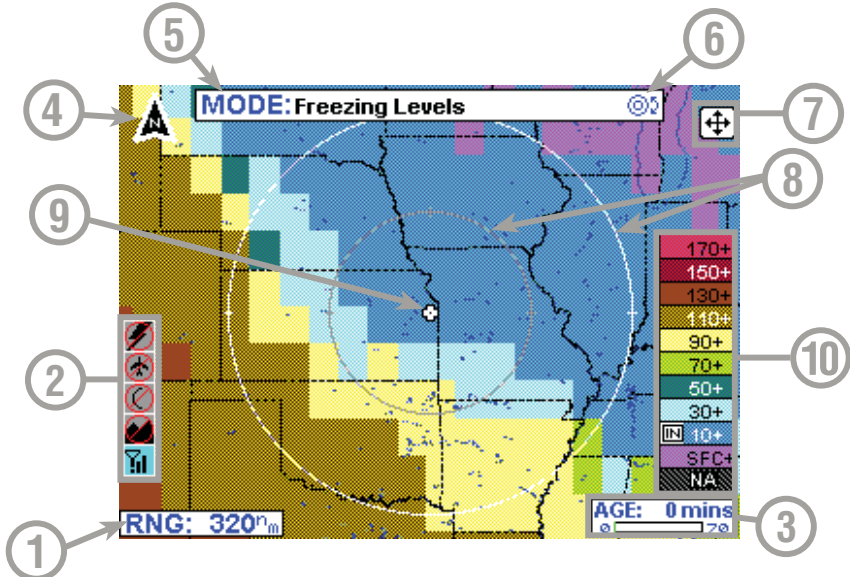


1 **Range Scale** - Indicates selected range.
2 **Available Functions** - Displays icons representing data available (black) and displayed (color).
3 **Graphical METAR Icon** - Ceiling indicated in top box, visibility in the bottom box and ICAO identifier of issuing airport. Note that ICAO identifiers are not displayed on all range settings.
4 **North Pointer** - Indicates north.
5 **MODE** - Indicates the weather product being displayed.
6 **Control Knob Icon** - Displayed when the Control Knobs are available for cycling through the graphical weather products.
7 **Joystick Label** - Indicates joystick is active and can be used to pan map.
8 **Range Rings** - Outer ring radius is selected range and inner ring radius is one half the selected range.
9 **Aircraft Symbol** - Indicates present aircraft position and heading (if available) or track.
10 **METAR Color Key** - Colors indicating flight rules pertaining to ceiling and visibility.

## GRAPHICAL METAR COLOR CODING



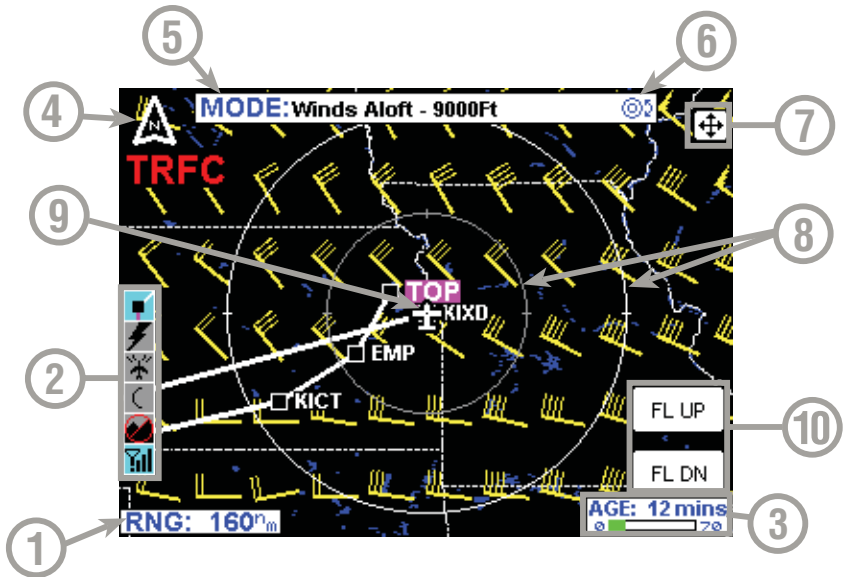| METAR LEGEND | Ceiling (Ft) | Visibility Statute Mi |
|---|---|---|
| VFR | >3000 | >5 |
| MVFR | 1000 to 3000 | 3 to 5 |
| IFR | 500 to <1000 | 1 to <3 |
| LIFR | <500 | <1 |
| Age >75min see Text Report | | |
| NOT REPORTED | | |

## GRAPHICAL AIRMET PAGE



1. **Range Scale** - Indicates selected range.
2. **Available Functions** - Displays icons representing data available (black) and displayed (color).
3. **North Pointer** - Indicates north.
4. **MODE** - Indicates the weather product being displayed.
5. **Control Knob Icon** - Displayed when the Control Knobs are available for cycling through the graphical weather products.
6. **Joystick Label** - Indicates joystick is active and can be used to pan map.
7. **Range Rings** - Outer ring radius is selected range and inner ring radius is one half the selected range.
8. **Aircraft Symbol** - Indicates present aircraft position and heading (if available) or track.
9. **AIRMET Boundary** - Color coded line indicating the boundaries of an AIRMET.
10. **AIRMET Color Key** - Colors indicating AIRMET type.
11. **IN** - Indicates the current aircraft position is IN " an IFR AIRMET.
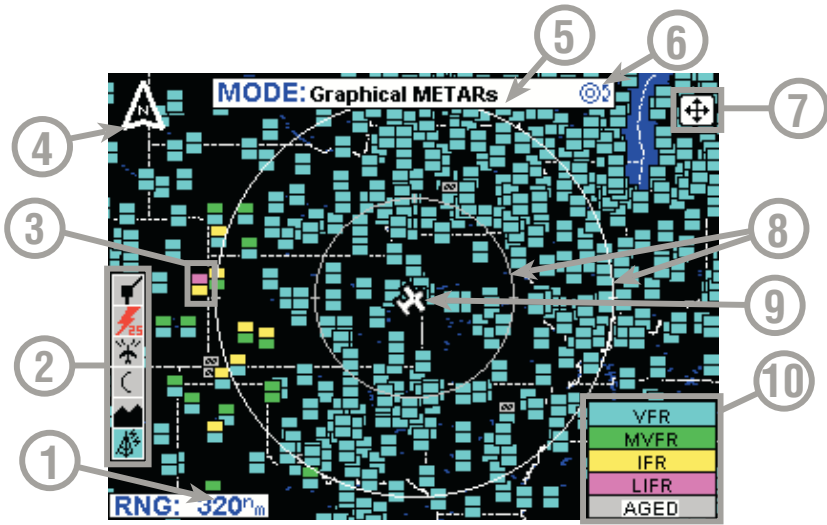
## GRAPHICAL SIGMET PAGE
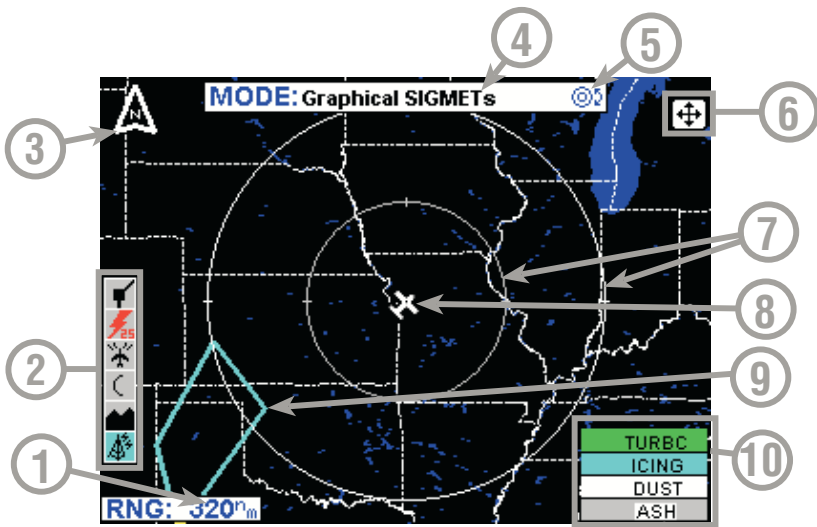


1  **Range Scale** - Indicates selected range.
2  **Available Functions** - Displays icons representing data available (black) and displayed (color).
3  **North Pointer** -  Indicates north.
4  **MODE** - Indicates the weather product being displayed.
5  **Control Knob Icon** - Displayed when the Control Knobs are available for cycling through the graphical weather products.
6  **Joystick Label** - Indicates joystick is active and can be used to pan map.
7  **Range Rings** - Outer ring radius is selected range and inner ring radius is one half the selected range.
8  **Aircraft Symbol** - Indicates present aircraft position and heading (if available) or track.
9  **SIGMET Boundary** - Color coded line indicating the boundaries of a SIGMET.
10 **SIGMET Color Key** - Colors indicating SIGMET type.
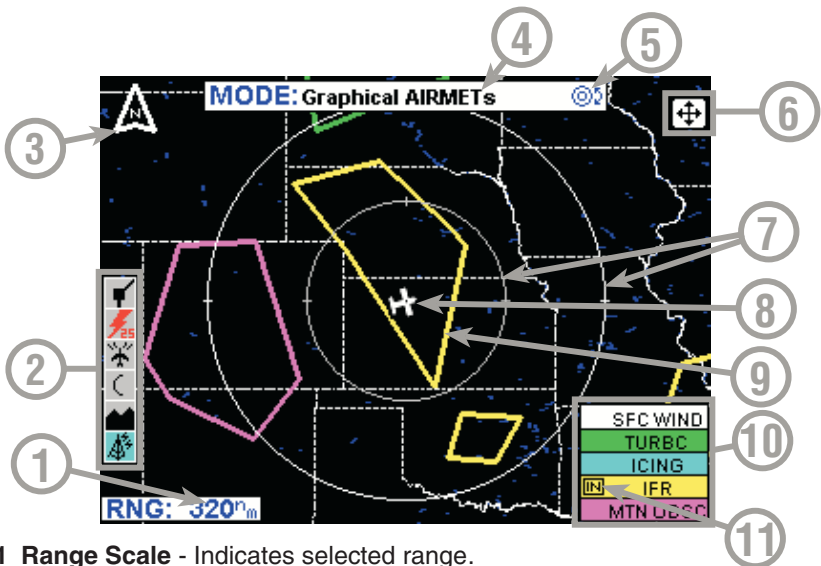
## GRAPHICAL CONVECTIVE SIGMET PAGE



1. **Range Scale** - Indicates selected range.
2. **Available Functions** - Displays icons representing data available (black) and displayed (color).
3. **North Pointer** - Indicates north.
4. **MODE** - Indicates the weather product being displayed.
5. **Control Knob Icon** - Displayed when the Control Knobs are available for cycling through the graphical weather products.
6. **Joystick Label** - Indicates joystick is active and can be used to pan map.
7. **Range Rings** - Outer ring radius is selected range and inner ring radius is one half the selected range.
8. **Aircraft Symbol** - Indicates present aircraft position and heading (if available) or track.
9. **Convective SIGMET Boundary** - Color coded line indicating the boundaries of a Convective SIGMET.
10. **IN** - Indicates the current aircraft position is "IN" a thunderstorm Convective SIGMET.
11. **Convective SIGMET Color Key** - Colors indicating Convective SIGMET type.

## GRAPHICAL ALERT WEATHER WATCHES PAGE (AWW) (VDL ONLY)
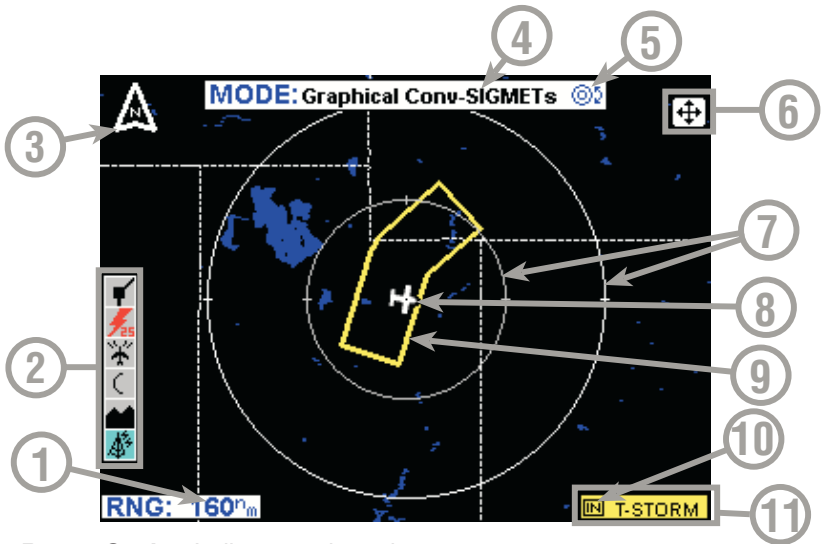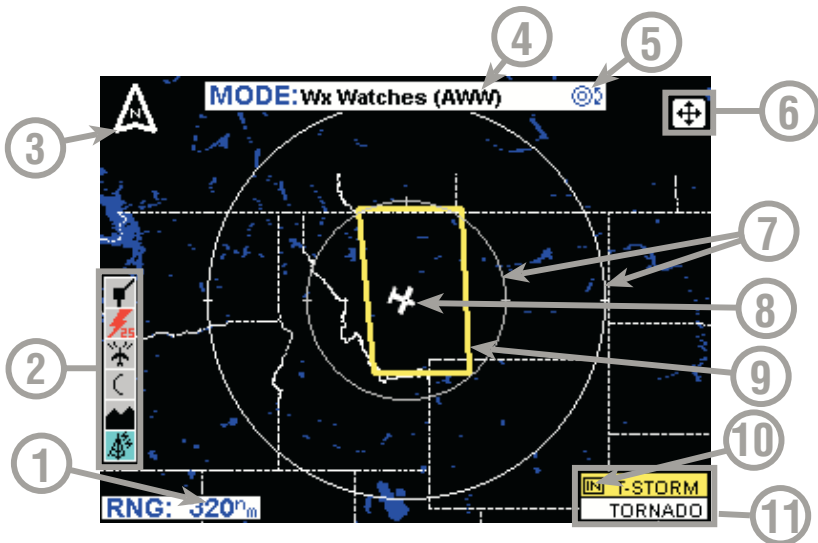


1 **Range Scale** - Indicates selected range.
2 **Available Functions** - Displays icons representing data available (black) and displayed (color).
3 **North Pointer** - Indicates north.
4 **MODE** - Indicates the weather product being displayed.
5 **Control Knob Icon** - Displayed when the Control Knobs are available for cycling through the graphical weather products.
6 **Joystick Label** - Indicates joystick is active and can be used to pan map.
7 **Range Rings** - Outer ring radius is selected range and inner ring radius is one half the selected range.
8 **Aircraft Symbol** - Indicates present aircraft position and heading (if available) or track.
9 **Weather Watch Boundary** - Color coded line indicating the boundaries of an Alert Weather Watch.
10 **IN** - Indicates the current aircraft position is "IN" a severe thunderstorm watch area.
11 **Weather Watch Color Key** - Colors indicating Alert Weather Watch type.

## FIS TEXT PAGE
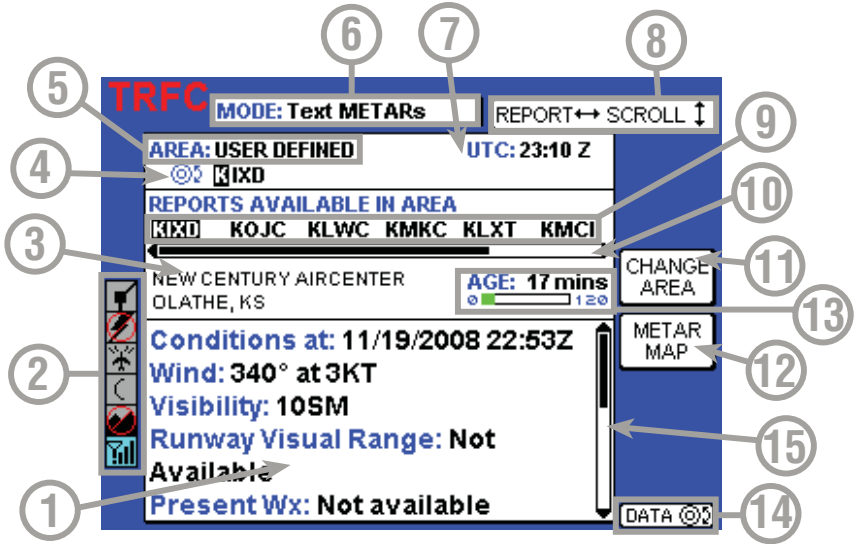


1. **Text Field** - The translated METARS data is displayed first in this window followed by the encoded weather report is displayed in this field.
2. **Available Functions** - Displays icons representing data available (black) and displayed (color).
3. **Selected Report Info** - Displays name, city and state of selected report.
4. **Selected Area Identifier** - Displays the identifier of the area selection.
5. **Area Selection** - Pressing the CHANGE AREA soft key cycles between Destination, Flightplan WPT, Nearest and User Defined.
6. **Mode** - Pressing the MODE key will display the SELECT FIS PRODUCT Menu.
7. **UTC** - Current UTC time.
8. **Report** - Each horizontal movement of the joystick will move the cursor over the next report in the AVAILABLE REPORTS field.
9. **Available Reports** - Shows available reports based on the selection in the AREA field. Special, urgent or amended reports are highlighted in yellow.
10. **Scroll Bar Left/Right** - Indicates there are more available reports than can be displayed on the screen. Move the joystick left/right to cycle through the reports.
11. **Change Area Soft Key** - Cycles the AREA field between Destination, Flightplan Waypoint (FLPN WPT), Nearest and User Defined.
12. **METAR Map Soft Key** - When this key is pressed the graphical METAR page is displayed with the map centered on the selected METAR. This is only available when valid data for graphical METARs is being received.
13. **Age of Report** - Age of report based on UTC time minus time of report. The bar indicates percentage of age versus elapsed time before expiration. The bar will be green the first 50% then turn yellow.
14. **Knob Function Label** - Indicates the knob function is set to DATA input (USER DEFINED) or SCAN data (FLPN WPT).
15. **Scroll Bar Up/Down** - Indicates there is more available data in this report than can be displayed on the screen. Move the joystick Up/Down to cycle through the reports.

MODE: Text METARs — REPORT↔
AREA: FPLN WPT — UTC: 16:21 Z
KMCI TBC
REPORTS AVAILABLE IN AREA
KMCI KMKC KSTJ
KANSAS CITY INTL
KANSAS CITY, MO
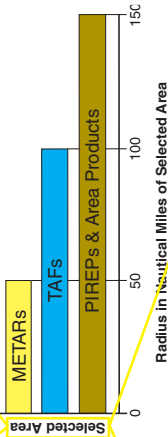AGE: 27 mins
METAR KMCI 081145Z 35005KT
4SM HZ OVC022 09/06 A2975 RMK
AO2 SLP073 T00890061 51012
CHANGE AREA / METAR MAP / SCAN

MODE: Text METARs — REPORT↔
AREA: DESTINATION KOSH — UTC: 16:37 Z
REPORTS AVAILABLE IN AREA
KOSH KFLD KATW KSBM KUNU KGRB
WITTMAN REGL
OSHKOSH, WI
AGE: 53 mins
METAR KOSH 241553Z
20020G24KT 10SM FEW060 18/12
A2974 RMK AO2 SLP070
T01780117
CHANGE AREA / METAR MAP

MODE: TAFs — REPORT↔ SCROLL↕
AREA: USER DEFINED — UTC: 19:19 Z
KMTJ TBC
REPORTS AVAILABLE IN AREA
KMTJ KGUC KALS
FOUR CORNERS REGL
FARMINGTON, NM
AGE: 7 hrs
TAF KFMN 241125Z 241212
08007KT P6SM SCT250
FM1600 VRB03KT P6SM FEW250
BECMG 2022 25013G21KT
SCT120 SCT250
FM0200 29008KT P6SM SCT150
CHANGE AREA / DATA

MODE: TAFs — REPORT↔ SCROLL↕
AREA: NEAREST — UTC: 19:20 Z
REPORTS AVAILABLE IN AREA
KOTM KDSM KBRL KCID KUIN
OTTUMWA INDUSTRIAL
OTTUMWA, IA
AGE: 1 hour
TAF KOTM 241725Z 241818
30015KT P6SM SCT015 BKN060
TEMPO 1819 5SM -TSRA
BKN012CB
FM2000 31024G34KT P6SM
SCT020 BKN080
CHANGE AREA

CHANGE AREA

METARs
TAFs
PIREPs & Area Products
Selected Area
Radius in Nautical Miles of Selected Area
0   50   100   150

# TRAFFIC AVOIDANCE

## AVAILABLE TRAFFIC FUNCTION ICONS

| Icon | Description |
|------|-------------|
| | Standby traffic sensor being displayed. |
| | Active traffic information being displayed. |
| | Traffic sensor in standby mode, not being displayed. |
| | TIS service not available. |
| | Traffic sensor active, not being displayed. |
| | Traffic sensor data invalid / not being displayed. |

## TCAS/TAS SYMBOLOGY



**NON-THREAT TRAFFIC**



**PROXIMITY INTRUDER TRAFFIC**



**TRAFFIC ADVISORY (TA)**



**RESOLUTION ADVISORY (RA)**



**"NO-BEARING" TRAFFIC**

1  **Display Range** - **RNG:##nm**
2  **TAS (TCAS) Operating Mode** - **TAS (TCAS) TST**, **TAS (TCAS) SBY**, **TA Only**, **TA/RA** or **TAS (TCAS) Fail**
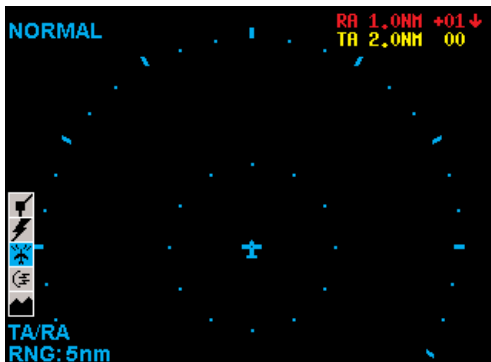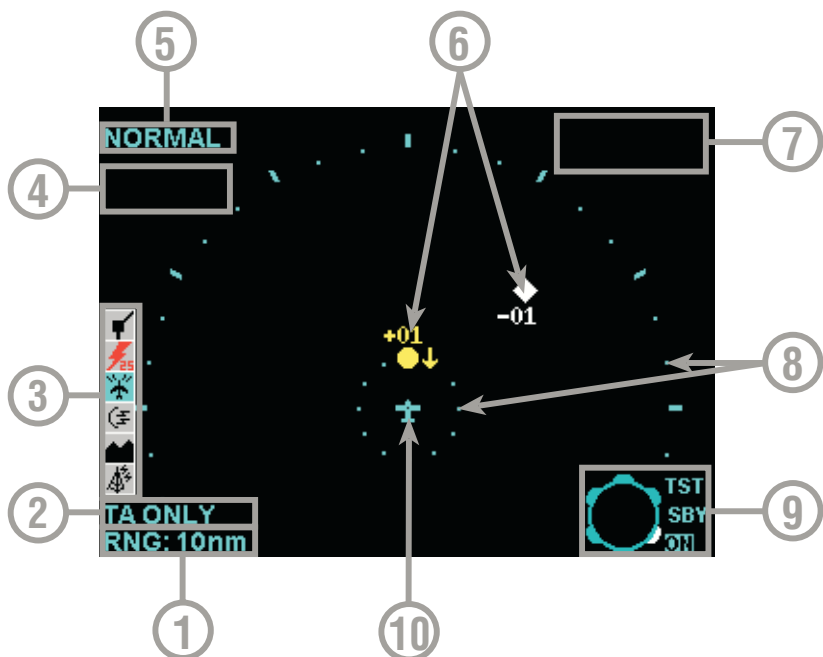3  **Available Functions** - Displays icons representing data available (black) and displayed (color)
4  **Current Flight Level** -  **FL:###**
5  **Altitude Volume** - **NORMAL**, **ABOVE**, **BELOW or UNRESTRICTED** (not available in all configurations)
6  **Traffic Intruder Symbols** - Indicates type of traffic, altitude of traffic and vertical trend of traffic.
7  **"No Bearing" Intruder Dispay Area** - **AA #.#NM ±XX↕ (Where AA is TA or RA)**
8  **Range Rings** - Outer ring radius is selected range, inner ring radius is always two nautical miles
9  **Outer Knob Icon** - Shows current knob selection
10 **Aircraft Symbol** - Stylized airplane indicating aircraft position

## TIS SYMBOLOGY

 **PROXIMITY INTRUDER TRAFFIC**
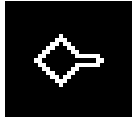
 **PROXIMITY INTRUDER NON-ALTITUDE REPORTING (NAR) TRAFFIC**

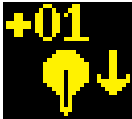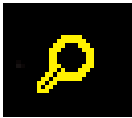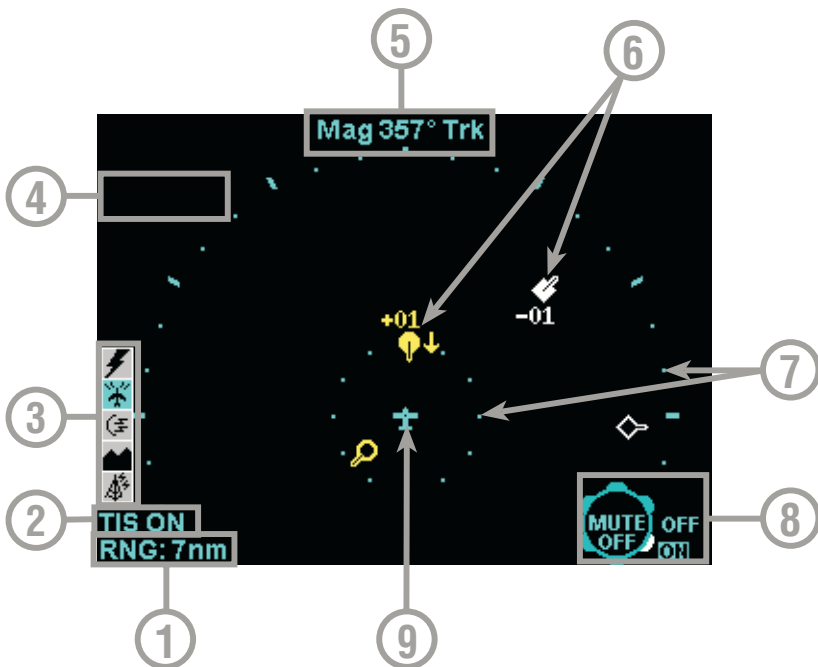 **TRAFFIC ADVISORY (TA)**

 **TRAFFIC ADVISORY NON-ALTITUDE REPORTING (NAR)**



*TIS Capable Mode S Radar Sensor Sites*

**Covered by US Pat. 6512975**

1. **Display Range** - **RNG:##nm**
2. **TIS Operating Mode** - **TIS ON, TIS OFF** or **TIS FAIL**
3. **Available Functions** - Displays icons representing data available (black) and displayed (color).
4. **Current Flight Level** - **FL:###**
5. **Display Orientation** - When in magnetic heading-up orientation, **Mag###° Hdg**; when in magnetic track-up orientation, **Mag###° Trk**; when heading or track is not available from the system, **No Hdg or Trk**. The received traffic bearing and ground track is corrected when the system has heading or track.
6. **Traffic Intruder Symbols** - Indicates type of traffic, altitude of traffic, vertical trend of traffic and ground track of traffic.
7. **Range Rings** - Outer ring radius is selected range, inner ring radius is always two nautical miles.
8. **Knob Icon** - Outer knob selects TIS **ON** or **OFF**.  Inner knob selects **MUTE ON** or **MUTE OFF** for muting of "TIS Unavailable" audio message.
9. **Aircraft Symbol** - Stylized airplane indicating aircraft position.

# TERRAIN AVOIDANCE

## AVAILABLE TERRAIN FUNCTION ICON

| Icon | Description |
|------|-------------|
| | EGPWS with warnings enabled, being displayed. |
| | EGPWS with warnings disabled, being displayed. |
| | EGPWS with warnings enabled, not being displayed. |
| | EGPWS with warnings disabled, not being displayed. |
| | EGPWS data invalid / not being received. |
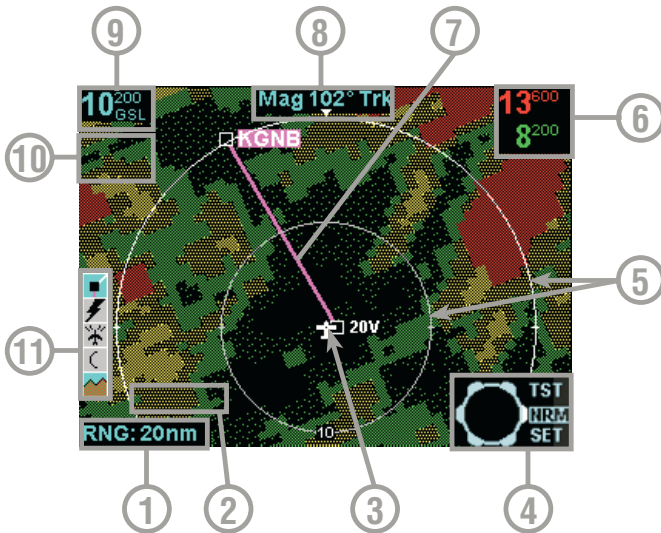


1  **Display Range** - **RNG:###nm**

2  **Terrain Awareness State** - Displays **EGPWS TEST** when self-test is active, **TERR FAIL** when terrain is INOP due to a fault, **TERR N/A** when terrain is not available (no fault) and  **TERR INHBT** when Terrain Awareness Warnings have been manually inhibited. The terrain picture will be blacked out if the state is **TERR FAIL** or **TERR N/A** (Some installations will also be blacked out for **TERR INHBT**).

3  **Aircraft Symbol** - Stylized airplane except in north-up mode when it is a plus symbol. Indicates present position.

4  **Outer Rotary Knob** (not present for all installations) - Allows selection of Normal (**NRM**), Test (**TST**) or Settings (**SET**) mode. Default is Normal.

5  **Range Rings** - Outer ring radius is selected range, inner ring radius is one half the selected range. Value of inner ring displayed at bottom of inner ring in 360° views and at the left edge of the inner ring in 120° views.

6  **EGPWS Peaks Elevation** (not present for all installations) - Maximum peaks elevation displayed over Minimum peaks elevation, **#####**

7  **GPS Flight Plan Overlay** - Current GPS flight plan.

8  **Display Orientation** - When in magnetic heading-up orientation, **Mag###° Hdg**; when in true heading-up orientation, **Tru###° Hdg**; when in magnetic track-up orientation, **Mag###° Trk**; when in true track-up orientation, **Tru###° Trk**; when in north- up orientation, **NORTH**

9  **EGPWS Geometric Altitude** (not present for all installations) - **##### MSL** (Mean Sea Level) or **##### GSL** (Geodetic Sea Level) depending on system configuration.

10 **Check Altitude Flag Window** - **CHECK ALT**

11 **Icon Bar** - Icons representing data available (black) and displayed (color).

**Honeywell**

006-18223-0000
Rev. 8  02/09