

# 1. Introduction to IRIS Products

IRIS is an advanced hardware and software product for either Doppler or non-Doppler weather radar applications. IRIS was developed by SIGMET, Inc., to provide virtually all of the features required for the operation of a radar network and distribution of radar products, including local and remote radar control, signal processing, product generation and display. For a detailed system level description of how IRIS works, please review chapters 1–5 of the *IRIS Radar Manual*.

The Product and Display manual focuses on the following concepts:

- Configuring products (meteorological images)
- Scheduling products
- Viewing products using the Quick Look Window (QLW)
- Sending the products to different destinations (Product Output)
- Archiving products
- Managing product inventory
- IRIS Overlay configuration

**In this chapter:**

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*IRIS Product Overview*

**Section 1.1**

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## 1.1 IRIS Product Overview

The following table provides a brief overview of the products supported in IRIS. The optional products require an additional level of licensing.

**Table 1–1: IRIS Products**

Product	Description
<b>BASE</b> Echo Base	Used for determining the base of echoes
<b>BEAM</b> Antenna Beam Pattern	A full screen cross-section format image showing range-averaged intensity in azimuth and elevation coordinates. Used for calibration and alignment purposes and for verifying antenna pattern.
<b>CAPPI</b> Constant Altitude PPI	A horizontal “cut” at a selected altitude used for surveillance and severe storm identification. This product is also useful for monitoring the weather at specific flight levels for air traffic applications.
<b>FCAST</b> Forecast	An array of direction and intensity vectors used to shift a current weather display interactively.
<b>HMAX</b>	Displays the height of the maximum reflectivity above each output pixel. This product requires a volume scan.
<b>MAX</b> Maximum Reflectivity	Shows the maximum reflectivity over each pixel as well as the East–West and North–South maximum projects in side panels.
<b>PPI</b> Plan Position Indicator	A full screen image used primarily for weather surveillance purposes.
<b>RAIN1</b> Hourly Rain Accumulation	Hourly rainfall accumulation. The user can select the Z–R relationship.
<b>RAIN–N</b> N–Hour Rain Accumulation	Rainfall accumulation of the last <i>N</i> hours, where <i>N</i> is selected by the user.
<b>RAW</b> Raw Data Product	A data files that contains the raw signal processor output parameters (Z, ZT, V, W, ZDR, etc) in polar coordinates. This cannot be displayed, but it is useful for recording on tape/disk/dvd or transferring to another IRIS network computer for product generation purposes.
<b>RTI</b> Range Time Indicator	Displays time along the horizontal axis and the vertical axis displays range from the radar. This is most often used for manual scans when observing a fixed target.
<b>RHI</b> Range Height Indicator	A full screen image showing the detailed cross-sectional structure of a storm, used for identifying severe storms, hail and bright band.

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<b>Product</b>	<b>Description</b>
<b>SRI</b> Surface Rainfall Intensity	This product is mainly used as input for the RAIN1 product in order to obtain the best possible estimates of accumulated precipitation even at longer ranges from the radar.
<b>STAT</b> Radar System Status	A file containing a report indicating the state of all key components of the radar software.
<b>TOPS</b> Echo Tops Map	A color-coded contour map of the top of a selected dBZ level. Either Z or ZT can be used as the basis for the top measurement.
<b>TRACK</b> Interactive Storm Tracking & Forecasting	An overlay product created in the Quick Look Window.
<b>VIL</b> Vertically Integrated Liquid	A color-coded map of the estimated depth of water (in mm) contained in a selectable atmospheric layer. This is an excellent indicator of severe storms. Either Z or ZT can be used as the basis for the estimate
<b>VVP</b> Velocity Volume Processing	Line graphs or time vs. height cross-sections of wind speed, wind direction and divergence vs. height. The user can select the range of influence and the maximum height.
<b>Warn</b> Warning/Centroid	Automatic warning and centroid plotting. Automatic warnings can be set for protected areas and user-selectable warning criteria. Output is a warning message and a situation overlay showing the centroid locations of storm features, such as high VIL or reflectivity.
<b>Wind</b> Wind Speed and Direction	Displays wind speed and direction with either wind bards or wind strings. The user can specify the range and height of the data, and the range and azimuth spacing of the lines that are displayed.
<b>XSECT</b> Cross Section	A volume scan product that shows the height cross section along a user-definable line.
<b>OPTIONAL IRIS Products</b>	
<b>CATCH</b> Cross Section	Calculates the precipitation accumulation in subcatchment areas such as watershed areas. This product requires the Hydromet option.
<b>COMP</b> Multi-Radar Site Composite	Produces a single composite image of radar data from many different radar sites.
<b>DWELL</b> Composite in Time	The DWELL product is a product of a product and composites successive images of a product in time. Moving targets will show a “streak” on the display.

**Table 1–1: IRIS Products**

<b>Product</b>	<b>Description</b>
<b>NDOP</b> Multiple Doppler	Provides a mechanism for including velocity (Doppler) data from another radar site now enabling the measurement of horizontal wind in addition to vertical wind.
<b>SHEAR</b> Wind Shear	This product detects wind shear in the atmosphere, allowing the detection of microbursts, gust fronts, mesocyclones, cold fronts, and atmospheric waves.
<b>SLINE</b> Shear Line	A shear line (frontal boundary), marks the transition between two air masses on the image.