

# ENVI<sup>®</sup> Pocket Guide Volume 2 Intermediate



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In association with the U.S. Army TWI Program.

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The ENVI® Pocket Guide is a quick reference booklet not intended to be read from cover to cover although it can be. The intent is to provide users with succinct steps on how to accomplish common tasks in ENVI.

If you need or desire comprehensive explanations of tasks from this guide refer to the following resources:

**ENVI Documentation Center** nv5geospatialsoftware.com/docs

#### **ENVI Tutorials**

nv5geospatialsoftware.com/docs/tutorials.html

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### **GETTING STARTED**

#### **OPENING ENVI**

1. Please reference ENVI Pocket Guide Volume 1 | BASIC if you need instructions on how to open ENVI, load and remove data, descriptions of the interface components, and basic data preparation procedures.

#### ENVI Pocket Guide Volume 1 | BASIC

provides an introduction to familiarize users with common methods for opening ENVI, loading data, navigating, and performing stretches.

## You are currently referencing ENVI Pocket Guide Volume 2 | INTERMEDIATE

which expounds a step further on intermediate procedures using ENVI, IDL and ENVI LiDAR, assuming you have already mastered the basics.

### **GRID REFERENCE**

1. Load an image (nadir, Feature Counting Too File Options Help off-nadir, referenced 🗮 🗮 🗮 Feature 1 - -- 19 or unreferenced) into Symbol Label Count Grid 4 x 4 Feature Grid Count Description ENVI, then right-click Sort by Original Order the image in the Layer Sort by Selected Column Reverse File (x,y) Manager and select Man (x v) Lat/Lon Zoom to Layer Extent. MGRS Acquisition Time - • × III Feature Counting Tool File Options Help ✓ Grid 4 x 4 E Feature 1 - 🔳 - 😤 MGRS Symbol Label Description Count Coordinates Grid Count MGBS Description Feature

If your image is georeferenced, you will not be able to record coordinates. However, you will still be able to count features and record the File (x,y) values. Toggle the check boxes next to Symbol, Label, Description, Count or Coordinates to determine which attributes will be labeled.

- 2. Click the Feature Counting Tool button **1** to open the Feature Counting dialog. Right-click on Description to turn on coordinates or File (x,y) values for unreferenced images.
- 3. Enable the Grid check box. By default, the Grid is set to 4 x 4. You can adjust the grid size by entering different values in the fields provided.

e		Fea	ture 1					
r			(255,0,0)					V
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Name		EN	/I Symbols					1
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Opti	ons	Help						
<b>I</b>	<b>"</b>	Boat	~	<b>-</b> - 😤	Grid Grid	4 x 4		
vmbol	F	Label		tion Cou	nt 🖾 Co	ordinates	File (x.y)	~
								_
Grid	Cour	nt File X	File Y	MGRS	Des	cription		
A3	1	604.04	1402.70	54SUE87956	Boat		_	^
B2	1	662.79	1259.49	54SUE88074	Boat			_
B3	1	975.83	1813.96	54SUE88700	Building			
B4	1	1063.95	1975.53	54SUE88876	Building			
B1	1	1078.64	370.87	54SUE88905	Building			
								~
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- 4. Click the Feature Counting Properties button 🚰 to edit the feature properties such as the Feature Name, Font Size, Symbol, Label Position, Show Label, and Show Count.
- Close the Feature Counting Properties dialog. Add more features by clicking the Add Feature button
   Change the default Feature Name (Feature1) in the name field.



- 6. Select the Feature Name of the feature you want to count using the drop-down arrow in the Feature Name field. Begin counting by clicking on the features in your image.
- 7. As you count the features, click Description and enter in the attribute and associated information.
- 8. You can delete mistakes by highlighting the feature row(s) and clicking the Delete Point button X to delete individually or the Delete All Points button 👯 to delete all.
- 9. To add a geographic grid, click the Annotations button Annotations then select Add Grid Lines. The new grid often defaults to WGS 1984 Web Mercator Projection.

10. You can edit the grid in the Grid Edit Properties that is located directly underneath the ENVI Toolbox. Here, you can change the Coordinate System, Text and Line Color, XY Spacing and other grid properties as shown in the following example:

🚰 Edit Properties		_	$\times$
		Grid	
Coordinate System	UTM_Zone_17N		
X Spacing	1000		
Y Spacing	1000		
Show Grid Lines	True		
Show Intersections	True		
Show Bounding Box	True		
Show Text	True		
Text Font Name	Calibri		
Text Font Style	Bold		
Text Font Size	14		
Text Color	(255,29,29)		
Background Method	Outline		
Background Color	(0.0.0)		-
Text Orientation X-Axis	Horizontal		
Text Orientation Y-Axis	Vertical		
Text Offset	0		
Geographic Format	Degrees, Minutes,	Seconds	
Geographic Precision	4		
Grid Color	(255,29,29)		
Grid Thickness	1		 
Grid Linestyle			 
Intersection Symbol Size	5		

 Go to the ENVI main menu and click File > Chip View To > PowerPoint or PDF for a finished product. Also known as the Report Generation Tool, chipping to PowerPoint allows you to utilize a variety of ENVI's built-in product briefing templates.



#### Example NADIR with Reference and Off NADIR without Reference:



### **BAND MATH**

- Load a multispectral or hyperspectral image into ENVI, then select Band Algebra > Band Math from the Toolbox. The Band Math dialog appears.
- 2. Enter a simple or complex mathematical expression using b# variables to represent the bands you want to manipulate. Replace # with the band number as shown in the example.

💽 Band Math	×
Previous Band Math Expressions:	
Curry Bratan Claus Datas	
Save Restore Clear Delete	
Enter an expression:	
b4 + b3 + b2	
Add to List	
	_
OK Cancel Help	

Band Math is a method used to create new raster data by performing complex or simple mathematical functions on existing bands available in one or more geographically referenced images. Analysts will be able to compress data into isolated values of interest such as NDVI (Normalized Difference Vegetation Index).

# NV5 GEOSPATIAL

### Thank you for your interest in ENVI®

To continue reading the remaining chapters of the ENVI Pocket Guide Volume 2 | Intermediate please click the following button.

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#### For more information:

#### nv5geospatialsoftware.com

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