

Precipitation Processing System (PPS) Product Format Description

Three Hour Surface Rainfall Accumulation (THP)

Change History Log		
Author	Date	Build
Kelley Miles	3/8/2005	8
Jihong Liu	3/17/2005	correction

Setting	Value	Comment
Product type	16-level	
Time generated	Once every volume scan	It generates the blank images before it reaches the first three hours. The image of Rainfall accumulation changes with every three hours
Product size	N/A	
Compression	None	
Resolution	1.1-Nmi x 1-deg	
Range	124	
AWIPS ID	WSRTHPxxx	xxx is site ID for originating WFO
Description/Purpose THP provides three-hour rainfall accumulation maps displayed as an image.		

The following table provides a detailed specification of the THP product.

Highlighted areas in the description below indicate changes since the previous Build

[Note: a Halfword is 16 bits]

MESSAGE HEADER

References

2620001F (Class I User ICD):
 Fig 3-3 "Message Header"

HALF WORD	FIELDNAME	TYPE	UNITS	VALUE	PRECISION/ ACCURACY	NOTES

01	Message Code	INT*2	N/A	79	N/A	
02	Date of Message	INT*2	Julian Date	1 to 32,767	1	
03-04	Time of Message	INT*4	Seconds	0 to 86,399	1	
05-06	Length of Message	INT*4	N/A	18 to 409856	1	
07	Source ID	INT*2	N/A	0 to 999	1	
08	Destination ID	INT*2	N/A	0 to 999	1	
09	Number of Blocks	INT*2	N/A	4	1	

PRODUCT DESCRIPTION BLOCK

References

2620001F (Class I Users ICD):

Fig 3-6 “Graphic Product Message” Sheet 2, Sheet 6, Sheet 7

Table III “Message Codes for Products”

Table V “Product Dependent Halfword Definition for Product Description Block”

2620003F (Product Spec ICD):

Section 28.2.2 “Color Level Code Table”

HALF WORD	FIELDNAME	TYPE	UNITS	VALUE	PRECISION/ ACCURACY	NOTES
10	Block Divider	INT*2	NA	-1	N/A	
11-12	Latitude of Radar	INT*4	Degrees	-90 to +90	0.001	
13-14	Longitude of Radar	INT*4	Degrees	-180 to +180	0.001	
15	Height of Radar	INT*2	Feet	-100 to +11000	1	
16	Product Code	INT*2	N/A	79	N/A	
17	Operational Mode	INT*2	N/A	0 to 2	N/A	
18	Volume Coverage Pattern	INT*2	N/A	1 to 767	N/A	
19	Sequence Number	INT*2	N/A	-13, 0 to 32767	1	
20	Volume Scan Number	INT*2	N/A	1 to 80	1	
21	Volume Scan Date	INT*2	Julian Date	1 to 32767	1	
22-23	Volume Scan Start Time	INT*4	Seconds GMT	0 to 86399	1	
24	Product Generation Date	INT*2	Julian Date	1 to 32767	1	
25-26	Product Generation Time	INT*4	Seconds	0 to 86399	1	

HALF WORD	FIELDNAME	TYPE	UNITS	VALUE	PRECISION/ ACCURACY	NOTES
27	Not used	INT*2		0	N/A	
28	Not used	INT*2		0	N/A	
29	Elevation Number	INT*2	N/A	0 to 20	1	
30	Not used	INT*2	N/A	0	N/A	
31	Data Level 1 Threshold	INT*2	Inches	Code for ND (i.e. 0)	1	
32	Data Level 2 Threshold	INT*2	Inches	Code for > 0.00	1	
33	Data Level 3 Threshold	INT*2	Inches	Code for > 0.10	1	
34	Data Level 4 Threshold	INT*2	Inches	Code for > 0.25	1	
35	Data Level 5 Threshold	INT*2	Inches	Code for > 0.50	1	
36	Data Level 6 Threshold	INT*2	Inches	Code for > 0.75	1	
37	Data Level 7 Threshold	INT*2	Inches	Code for > 1.00	1	
38	Data Level 8 Threshold	INT*2	Inches	Code for > 1.25	1	
39	Data Level 9 Threshold	INT*2	Inches	Code for > 1.50	1	
40	Data Level 10 Threshold	INT*2	Inches	Code for > 1.75	1	
41	Data Level 11 Threshold	INT*2	Inches	Code for > 2.00	1	
42	Data Level 12 Threshold	INT*2	Inches	Code for > 2.50	1	
43	Data Level 13 Threshold	INT*2	Inches	Code for > 3.00	1	
44	Data Level 14 Threshold	INT*2	Inches	Code for > 4.00	1	
45	Data Level 15 Threshold	INT*2	Inches	Code for > 6.00	1	
46	Data Level 16 Threshold	INT*2	Inches	Code for > 8.00	1	
47	Max rainfall	INT*2	Inches	0.0 to 189.0	0.1	
48	Mean-field Bias Three Hour Average	INT*2	N/A	0.01 to 99.99	0.01	
49	Effective No. G-R Pairs (Sample Size) Three Hour Average	INT*2	N/A	0.00 to 9999.99	0.01	
50	Rainfall End Date	INT*2	Julian	1 to 32767	1	

HALF WORD	FIELDNAME	TYPE	UNITS	VALUE	PRECISION/ ACCURACY	NOTES
			Date			
51	Rainfall End Time	INT*2	Minutes	0 to 1439	1	
52	Not used	INT*2	N/A	0	N/A	
53	Not used	INT*2	N/A	0	N/A	
54	Version	INT*1	N/A	1 to 2	1	
54	Spot Blank	INT*1	N/A	0 to 1	1	
55-56	Offset to Symbology	INT*4	Halfwords	60	1	
57-58	Offset to Graphic	INT*4	Halfwords	0	1	
59-60	Offset to Tabular	INT*4	Halfwords	0 to 400000	1	Varies, depending on size of Symbology Block

PRODUCT SYMBOLOGY BLOCK

References

2620001F (Class I User ICD):

Section 3.2.1.2 “Product Symbology Block”
 Fig 3-6 “Graphic Product Message” Sheet 3 and Sheet 8
 Fig 3-10 “Radial Data Packet”

HALF WORD	FIELDNAME	TYPE	UNITS	VALUE	PRECISION/ ACCURACY	NOTES
61	Block Divider	INT*2	N/A	-1	N/A	
62	Block ID	INT*2	N/A	1	N/A	
63-64	Length of Block	INT*4	Bytes	1 to 400000	1	
65	Number of Layers	INT*2	N/A	1	1	
66	Layer Divider	INT*2	N/A	-1	N/A	
67-68	Length of Data Layer	INT*4	N/A	1 to 400000	1	
69	Packet Code	INT*2	N/A	AF1F (Hex)	N/A	
70	Index of First Range Bin	INT*2	N/A	0	1	
71	Number of Range Bins	INT*2	N/A	115	1	
72	I Center of Sweep	INT*2	Km/4	256	1	
73	J Center of Sweep	INT*2	Km/4	280	1	
74	Scale Factor	Scaled Integer	Pixels	2.0	0.001	

HALF WORD	FIELDNAME	TYPE	UNITS	VALUE	PRECISION/ ACCURACY	NOTES
75	Number of Radials	INT*2	N/A	360	1	
76	Number of RLE Halfwords in Radial	INT*2	Halfword	1 to 116	1	}Repeat
77	Radial Start Angle	Scaled Integer (INT*2)	Degrees	0.0 to 359.0	0.1	} Each } of }
78	Radial Angle Delta	Scaled Integer (INT*2)	Degrees	1.0 to 2.0	0.1	} Radial } }
79	Run (0)	4 Bit INT	N/A	0 to 15	1	} }
79	Color Code (0)	4 Bit INT	N/A	0 to 15	1	} }
79	Run (1)	4 Bit INT	N/A	0 to 15	1	} }
79	Color Code (1)	4 Bit INT	N/A	0 to 15	1	} }
...	}
...	}
...	}
	Run (N)	4 Bit INT	N/A	0 to 15	1	} }
	Color Code (N)	4 Bit INT	N/A	0 to 15	1	}
	End of Block	4 Bit INT	N/A	0000	N/A	End of } block } marker }
	End of Block	4 Bit INT	N/A	0000	N/A	End of } block } marker }

[GRAPHIC ALPHANUMERIC BLOCK IS NOT APPLICABLE FOR THP]

TABULAR ALPHANUMERIC BLOCK – CONTAINS THP PAIRED ALPHANUMERIC PRODUCT

References

2620001F (Class 1 Users ICD):
 Section 3.2.1.4 “Tabular Alphanumeric Block”
 Fig 3-3 “Message Header”

Fig 3-6 “Graphic Product Message” Sheet 7 and Sheet 10
 Fig 3-10 “Radial Data Packet”
 Table V “Product Dependent Halfword Definition for Product Description Block”
 Fig 3-28 Sheet 7

26200003F (Product Spec ICD):

Appendix C, Format IX “Precipitation Adaptation Data”, Sheets 1-4

HALF WORD	FIELDNAME	TYPE	UNITS	VALUE	PRECISION/ ACCURACY	NOTES
Offset+ 1	Block Divider	INT*2	N/A	-1	N/A	
2	Block ID	INT*2	N/A	3	N/A	
3-4	Length of Block	INT*4	Bytes	1 to 65535	1	
5	Message Code	INT*2	N/A	108	N/A	
6	Date of Message	INT*2	Julian Date	1 to 32,767	1	
7-8	Time of Message	INT*4	Seconds	0 to 86,399	1	
9-10	Length of Message	INT*4	N/A	18 to 409856	1	
11	Source ID	INT*2	N/A	0 to 999	1	
12	Destination ID	INT*2	N/A	0 to 999	1	
13	Number of Blocks	INT*2	N/A	4	1	
14	Block Divider	INT*2	N/A	-1	N/A	
15-16	Latitude of Radar	INT*4	Degrees	-90 to +90	0.001	
17-18	Longitude of Radar	INT*4	Degrees	-180 to +180	0.001	
19	Height of Radar	INT*2	Feet	-100 to +11000	1	
20	Product Code	INT*2	N/A	79	N/A	
21	Operational Mode	INT*2	N/A	0 to 2	N/A	
22	Volume Coverage Pattern	INT*2	N/A	1 to 767	N/A	
23	Sequence Number	INT*2	N/A	-13, 0 to 32767	1	
24	Volume Scan Number	INT*2	N/A	1 to 80	1	
25	Volume Scan Date	INT*2	Julian Date	1 to 32767	1	
26-27	Volume Scan Start Time	INT*4	Seconds GMT	0 to 86399	1	
28	Product Generation Date	INT*2	Julian Date	1 to 32767	1	
29-30	Product Generation Time	INT*4	Seconds	0 to 86399	1	
31	Not Used	INT*2	N/A	0	N/A	

HALF WOR D	FIELDNAME	TYPE	UNITS	VALUE	PRECISION/ ACCURACY	NOTES
32	Not Used	INT*2	N/A	0	N/A	
33	Elevation Number	INT*2	N/A	0 to 20	1	
34	Not Used	INT*2		0	N/A	
35	Data Level 1 Threshold	INT*2	Inches	Code for ND (i.e. 0)	1	
36	Data Level 2 Threshold	INT*2	Inches	Code for >0.00	1	
37	Data Level 3 Threshold	INT*2	Inches	Code for >0.10	1	
38	Data Level 4 Threshold	INT*2	Inches	Code for >0.25	1	
39	Data Level 5 Threshold	INT*2	Inches	Code for >0.50	1	
40	Data Level 6 Threshold	INT*2	Inches	Code for >0.75	1	
41	Data Level 7 Threshold	INT*2	Inches	Code for >1.00	1	
42	Data Level 8 Threshold	INT*2	Inches	Code for >1.25	1	
43	Data Level 9 Threshold	INT*2	Inches	Code for >1.50	1	
44	Data Level 10 Threshold	INT*2	Inches	Code for >1.75	1	
45	Data Level 11 Threshold	INT*2	Inches	Code for >2.00	1	
46	Data Level 12 Threshold	INT*2	Inches	Code for >2.50	1	
47	Data Level 13 Threshold	INT*2	Inches	Code for >3.00	1	
48	Data Level 14 Threshold	INT*2	Inches	Code for > 4.00	1	
49	Data Level 15 Threshold	INT*2	Inches	Code for >6.00	1	
50	Data Level 16 Threshold	INT*2	Inches	Code for >8.00	1	
51	Max rainfall	INT*2	Inches	0.0 to 189.0	0.1	
52	Mean-field Bias	INT*2	N/A	0.01 to 99.99	0.01	
53	Effective No. G-R Pairs (Sample Size)	INT*2	N/A	0.00 to 9999.99	0.01	
54	Rainfall End Date	INT*2	Julian Date	1 to 32767	1	
55	Rainfall End Time	INT*2	Minutes	0 to 1439	1	

HALF WORD	FIELDNAME	TYPE	UNITS	VALUE	PRECISION/ ACCURACY	NOTES
56	Not Used	INT*2	N/A	0	N/A	
57	Not Used	INT*2	N/A	0	N/A	
58	Version	INT*1	N/A	1 to 2	1	
58	Spot Blank	INT*1	N/A	0 to 1	1	
59-60	Offset to Symbology	INT*4	Halfwords	60	1	
61-62	Offset to Graphic	INT*4	Halfwords	0	1	
63-64	Offset to Tabular	INT*4	Halfwords	0 to 400000	1	
65	Block Divider	INT*2	N/A	-1	N/A	
66	Number of Pages	INT*2	N/A	5	1	
67	Number of Characters	INT*2	N/A	80	1	
68-107	Title	CHAR* 80	8 Bit ASCII	3-HOUR PRECIPITAT ION ACCUMULA TION MM/DD/YY HH:MM (space padded)	N/A	
108	Number of Characters	INT*2	N/A	80	1	
109-148	Blank Line	CHAR* 80	8 Bit ASCII	‘ ‘	N/A	
149	Number of Characters	INT*2	N/A	80	1	
150-189	Blank Line	CHAR* 80	8 Bit ASCII	‘ ‘	N/A	
190	Number of Characters	INT*2	N/A	80	1	
191-230	Line 4	CHAR* 80	8 Bit ASCII	NUMBER OF CONTRIBUT ING HOURS : X (value range from 1 to 3) (space padded)	1	Correction to original description (no format change)
231	Number of Characters	INT*2	N/A	80	1	
232-271	Line 5	CHAR* 80	8 Bit ASCII	‘ ‘	N/A	
272	Number of	INT*2	N/A	80	1	

HALF WORD	FIELDNAME	TYPE	UNITS	VALUE	PRECISION/ ACCURACY	NOTES
	Characters					
273-312	Line 6	CHAR* 80	8 Bit ASCII	‘ ‘	N/A	
313	Number of Characters	INT*2	N/A	80	1	
314-353	Title1	CHAR* 80	8 Bit ASCII	DATE ENDING ADJUSTED BIAS SAMPLE SIZE MEM SPAN (space padded)	N/A	
354	Number of Characters	INT*2	N/A	80	1	
355-394	Title2	CHAR* 80	8 Bit ASCII HOUR (Y/N) (# G-R PAIRS) (HOURS) (space padded)	N/A	
395	Number of Characters	INT*2	N/A	80	1	
396----	Row 1: DATE_END_HOUR	CHAR* 14	8 Bit ASCII	MM/DD/YY HH:MM (7 space padded)	N/A	
	Row 1: ADJUSTED	CHAR* 1	8 Bit ASCII	X (range from Y/N) (7 space padded)	N/A	
	Row 1: BIAS	CHAR* 5	8 Bit ASCII	“XX.XX” Range:0.01 to 100.00 Default:1.25 (4 space padded)	0.01	Correction to original description (no format change)
	Row 1: SAMPLE SIZE (# G-R PAIRS)	CHAR* 8	8 Bit ASCII	“XXXXX.XX ” Range:0.00 to	0.01	Corrections to original description (no

HALF WORD	FIELDNAME	TYPE	UNITS	VALUE	PRECISION/ ACCURACY	NOTES
				9999.99 Default:13.49 (5 space padded)		format change)
435	Row1: MEMORY SPAN (HOURS)	CHAR* 8	8 Bit ASCII	”XXXXXX.XX” Range:0.01 to 10.**3 Default:168.01 (space padded)	0.01	Corrections to original description (no format change)
436	Number of Characters	INT*2	N/A	80	1	
437----	Row 2: DATE_END_HOUR	CHAR* 14	8 Bit ASCII	MM/DD/YY HH:MM (7 space padded)	N/A	
	Row 2: ADJUSTED	CHAR* 1	8 Bit ASCII	X (range from Y/N) (7 space padded)	N/A	
	Row 2: BIAS	CHAR* 5	8 Bit ASCII	“XX.XX” Range:0.01 to 100.00 Default:1.25 (4 space padded)	0.01	Correction to original description (no format change)
	Row 2: SAMPLE SIZE (# G-R PAIRS)	CHAR* 8	8 Bit ASCII	“XXXXXX.XX” Range:0.00 to 9999.99 Default:13.49 (5 space padded)	0.01	Corrections to original description (no format change)
476	Row2: MEMORY SPAN (HOURS)	CHAR* 8	8 Bit ASCII	”XXXXXX.XX” Range:0.01 to 10.**3 Default:168.01 (space	0.01	Corrections to original description (no format change)

HALF WORD	FIELDNAME	TYPE	UNITS	VALUE	PRECISION/ ACCURACY	NOTES
				padding)		
477	Number of Characters	INT*2	N/A	80	1	
478----	Row 3: DATE_END_HOUR	CHAR* 14	8 Bit ASCII	MM/DD/YY HH:MM (7 space padded)	N/A	
	Row 3: ADJUSTED	CHAR* 1	8 Bit ASCII	X (range from Y/N) (7 space padded)	N/A	Correction to original description (no format change)
	Row 3: BIAS	CHAR* 5	8 Bit ASCII	“XX.XX” Range:0.01 to 100.00 Default:1.25 (4 space padded)	0.01	Corrections to original description (no format change)
	Row 3: SAMPLE SIZE (# G-R PAIRS)	CHAR* 8	8 Bit ASCII	“XXXXX.XX” Range:0.00 to 9999.99 Default:13.49 (5 space padded)	0.01	Corrections to original description (no format change)
517	Row3: MEMORY SPAN (HOURS)	CHAR* 8	8 Bit ASCII	”XXXXX.XX” Range:0.01 to 10.**3 Default:168.0 1 (space padded)	0.01	Corrections to original description (no format change)
518	End of Page Flag	INT*2	N/A	-1	N/A	

The following is the tabular alphanumeric block coming from one of the products by the use of the CVG

Tabular Alphanumeric Block
 Block Divider = -1
 Block ID = 3
 Length of Block = 1036 bytes

new offset = 8314
Block Divider = -1
Number of Pages: 1 Current Page: 1
New page = 1

Tabular Alphanumeric Block - Page: 1
buf len=892, buf =

3-HOUR PRECIPITATION ACCUMULATION 08/21/98 16:17

NUMBER OF CONTRIBUTING HOURS : 3

DATE	ENDING	ADJUSTED	BIAS	SAMPLE SIZE	MEM SPAN
.....	HOUR	(Y/N)	(# G-R PAIRS)	(HOURS)
08/21/98	16:00	Y	1.25	13.49	168.01
08/21/98	15:00	Y	1.25	13.49	168.01
08/21/98	14:00	Y	1.25	13.49	168.01