

A. Serial Status Formats

Table A-1: Internal BITE Packet (RVP8 to Host)

The RVP8 can optionally generate this “internal” BITE packet. Most of these bits are copies of data available from the GPARM command. Those bits are labelled with “GP” followed by the word number and bit number. See section 6.9 for more details. The identification byte is selectable, so that conflicts with other BITE packets can be avoided. The 64 auxiliary status variables, labeled S[0:63], may optionally be assigned to electrical input pins on an I/O-62 card using the softplane.conf file.

Char	Function
1	SYNC Byte (C0 Hex)
2	Identification byte (User Choice)
3	Diagnostic Results 0–6 <ul style="list-style-type: none"> D6 = GP11,D6 = Error loading config/setup files D5 = GP11,D5 = IO62 card #2 failure D4 = GP11,D4 = IO62 card #1 failure D3 = GP11,D3 = Tx card #2 failure D2 = GP11,D2 = Tx card #1 failure D1 = GP11,D1 = Rx card #2 failure D0 = GP11,D0 = Rx card #1 failure
4	Diagnostic Results 7–13 <ul style="list-style-type: none"> D6 = GP11,D13 = <spare> D5 = GP11,D12 = <spare> D4 = GP11,D11 = RVP8 running without root privileges D3 = GP11,D10 = Signals raised during startup D2 = GP11,D9 = Error in softplane configuration D1 = GP11,D8 = Problem forking compute process D0 = GP11,D7 = Error attaching to antenna library
5	Diagnostic Results 14–20 <ul style="list-style-type: none"> D6 = GP12,D4 = <spare> D5 = GP12,D3 = <spare> D4 = GP12,D2 = <spare> D3 = GP12,D1 = <spare> D2 = GP12,D0 = <spare> D1 = GP11,D15 = <spare> D0 = GP11,D14 = <spare>
6	Diagnostic Results 21–27 <ul style="list-style-type: none"> D6 = GP12,D11 = <spare> D5 = GP12,D10 = <spare> D4 = GP12,D9 = <spare>

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- D3 = GP12,D8 = <spare>
D2 = GP12,D7 = <spare>
D1 = GP12,D6 = <spare>
D0 = GP12,D5 = <spare>
- 7 Shutdown Conditions 28–34
 D6 = <spare>
 D5 = <spare>
 D4 = <spare>
 D3 = GP12,D15 = <spare>
 D2 = GP12,D14 = <spare>
 D1 = GP12,D13 = <spare>
 D0 = GP12,D12 = <spare>
- 8 Immediate Status 0–7
 D6 = GP10,D6 = Angle sync not interruptible
 D5 = GP10,D5 = Angle sync enabled
 D4 = GP10,D4 = Angle sync on elevation
 D3 = GP10,D3 = Angle sync is BCD
 D2 = GP10,D2 = PWINFO command is disabled
 D1 = GP10,D1 = Error loading trigger angle table
 D0 = GP10,D0 = No trigger
- 9 Immediate Status 8–14
 D6 = GP10,D13 = # compute processes –1 (bit 1)
 D5 = GP10,D12 = # compute processes –1 (bit 0)
 D4 = GP10,D11 = Current unfolding mode (bit 1)
 D3 = GP10,D10 = Current unfolding mode (bit 0)
 D2 = GP10,D9 = DSP supports 16-bit floating time series
 D1 = GP10,D8 = DSP has full IAGC hardware support
 D0 = GP10,D7 = Angle sync is dynamic
- 10 Immediate Status 15–21
 D6 = GP18,D4 = IFD uplink cable failure
 D5 = GP18,D3 = DSP supports DPRT–1 algorithms
 D4 = GP18,D2 = <spare>
 D3 = GP18,D1 = DSP supports random phase algorithms
 D2 = GP18,D0 = DSP supports FFT algorithms
 D1 = GP10,D15 = <spare>
 D0 = GP10,D14 = DSP supports power spectrum output
- 11 Immediate Status 22–28
 D6 = GP18,D11 = IFD test switches are not in normal position
 D5 = GP18,D10 = AFC status (bit 2)
 D4 = GP18,D9 = AFC status (bit 1)
 D3 = GP18,D8 = AFC status (bit 0)
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D2 = GP18,D7 = IFD PLL is not locked to external reference
D1 = GP18,D6 = <spare>
D0 = GP18,D5 = IFD downlink cable failure

12 Immediate Status 29–35

D6 = GP55,D2 = Burst pulse hunting is enabled
D5 = GP55,D1 = Burst pulse frequency changes can be made
D4 = GP55,D0 = Burst pulse timing changes can be made
D3 = GP18,D15 = Burst at incorrect range
D2 = GP18,D14 = <spare>
D1 = GP18,D13 = Missing signal at IFD #1 burst
D0 = GP18,D12 = Trigger blanking is enabled

13 Immediate Status 36–42

D6 = GP55,D9 = User-defined Major mode #2 supported
D5 = GP55,D8 = User-defined Major mode #1 supported
D4 = GP55,D7 = Problem with digital transmitter clock
D3 = GP55,D6 = Count not generate the requested phases
D2 = GP55,D5 = DSP supports DPRT-2 algorithms
D1 = GP55,D4 = Last burst pulse hunt was unsuccessful
D0 = GP55,D3 = Burst pulse hunt is running now

14 Immediate Status 43–49

D6 = GP59,D0 = Power spectra size matches sample size
D5 = GP55,D15 = <spare>
D4 = GP55,D14 = <spare>
D3 = GP55,D13 = <spare>
D2 = GP55,D12 = <spare>
D1 = GP55,D11 = User-defined Major mode #4 supported
D0 = GP55,D10 = User-defined Major mode #3 supported

15 Immediate Status 50–56

D6 = GP59,D7 = WSR88D Batch mode is supported
D5 = GP59,D6 = Time series data source is external to RVP8
D4 = GP59,D5 = Trigger sequence truncated
D3 = GP59,D4 = Using High-SNR packed (I,Q) format
D2 = GP59,D3 = PRT altered to fit trigger pattern
D1 = GP59,D2 = Trigger pattern altered to fit PRT
D0 = GP59,D1 = PROC spectra size matches sample size

16 Immediate Status 57–63

D6 = GP59,D14 = <spare>
D5 = GP59,D13 = <spare>
D4 = GP59,D12 = <spare>
D3 = GP59,D11 = <spare>

D2 = GP59, D10 = Receiver protection fault
D1 = GP59, D9 = GP outputs #7&8 use Hi-SNR format
D0 = GP59, D8 = Major mode refused to use external trigger

17 Immediate Status 64–70

D6 =
D5 =
D4 =
D3 =
D2 =
D1 =
D0 = GP59, D15 = <spare>

18 Latched Status 0–6

D6 = GP9, D6 = Command received while FIFO full
D5 = GP9, D5 = FIFO overflow during last PROC command
D4 = GP9, D4 = <spare>
D3 = GP9, D3 = PRT varied by more than 10 microseconds
D2 = GP9, D2 = No trigger during PROC command
D1 = GP9, D1 = Trigger too fast during noise measurement
D0 = GP9, D0 = No trigger during noise measurement

19 Latched Status 7–14

D6 = GP9, D13 = <spare>
D5 = GP9, D12 = <spare>
D4 = GP9, D11 = Measured phase sequence is invalid
D3 = GP9, D10 = Error in LSIMUL command protocol
D2 = GP9, D9 = Error in last LRMSK command
D1 = GP9, D8 = <spare>
D0 = GP9, D7 = Error detected during last SNOISE command

20 Latched Status 15–21

D6 = <spare>
D5 = <spare>
D4 = <spare>
D3 = <spare>
D2 = <spare>
D1 = GP9, D15 = Invalid processor configuration
D0 = GP9, D14 = <spare>

21 SOPRMS Status 0–6

D6 = GP31, D6 = <spare>
D5 = GP31, D5 = 3x3 filtering enabled
D4 = GP31, D4 = <spare>
D3 = GP31, D3 = <spare>

		D2 = GP31,D2 = Reflectivity speckle remover on
		D1 = GP31,D1 = Doppler speckle remover on
		D0 = GP31,D0 = Reflectivity is range normalized, else SNR
22	SOPRMS Status 7–13	
		D6 = GP31,D13 = Polarization bit 1: 0=Horiz, 1=Vert
		D5 = GP31,D12 = Polarization bit 0: 2=Alternating, 3=Dual
		D4 = GP31,D11 = Disables header output
		D3 = GP31,D10 = Use any spectrum size
		D2 = GP31,D9 = Output is in 16-bit format
		D1 = GP31,D8 = Enable clutter microsupression
		D0 = GP31,D7 = Use 3-lag processing for widths
23	SOPRMS Status 14–21	
		D6 = <spare>
		D5 = <spare>
		D4 = <spare>
		D3 = <spare>
		D2 = <spare>
		D1 = GP31,D15 = <spare>
		D0 = GP31,D14 = <spare>
24	Status Bits	6 5 4 3 2 1 0
25	Status Bits	13 12 11 10 9 8 7
26	Status Bits	20 19 18 17 16 15 14
27	Status Bits	27 26 25 24 23 22 21
28	Status Bits	34 33 32 31 30 29 28
29	Status Bits	41 40 39 38 37 36 35
30	Status Bits	48 47 46 45 44 43 42
31	Status Bits	55 54 53 52 51 50 49
32	Status Bits	62 61 60 59 58 57 56
33	Status Bit	63
34–43	<spare>	
44	END OF MESSAGE (FF Hex)	

Table A–2: Internal QBITE Packet (RVP8 to Host)

The RVP8 can optionally generate this “internal” QBITE packet. These values are copies of data available from the GPARM command. Regular GPARM values are labelled with “GP” followed by the word number. Those in the dspExParmIO structure are labelled with “EX” followed by the word number. See section 6.9 for more details.

Char	Function
1	SYNC Byte (AF Hex)
2	Identification byte (User Choice)

3-4	Burst pulse frequency, IFD #1
5-6	Burst pulse frequency, IFD #2
7-8	Burst pulse power, IFD #1
9-10	Burst pulse power, IFD #2
11-12	Noise level, IFD #1
13-14	Noise level, IFD #2
15-16	Chassis temperature, IFD#1
17-18	Chassis temperature, IFD#2
19-20	FPGA temperature, IFD#1
21-22	FPGA temperature, IFD#2
23-24	AFC setting
25-26	Burst timing slew
27-28	Current PRF
29-30	Current pulse width
31-62	<spare>
63	END OF MESSAGE (FF Hex)