SHL-031
BSP Message Types

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6/7/2005

Basic Serial Protocol (BSP) messages are used in the entraNET 220 product for payload communication between RCL vendor equipment and the entraNET 220 Packaged Radio Module (PRM) within the LCU, as well as for repeater logging. At the Repeater and LCU, agglomerated logging frames are output to the logging server each second. The BSP log agglomeration consists of a variable number of records depending on how many messages were sent and received by a given Repeater or LCU Unit for the given second. In addition, the BSP format is used when a PRM is put into "Sniffer" mode. In this mode, an agglomeration of type 0x42 BSP messages are output from the PRM's COM1 serial port for all messages received over the air each second.

The following message types are possible:

Type	Description
0x02	Standard RCL Data Message
0x12	Survey RCL Data Message
0x22	RCL Log Message with Timeslot
0x32	RCL Log Message with RSSI and Timeslot
0x42	RCL Log Message with RSSI and Extra Info
0x52	RCL Log Message with Extra Info

Each record consists of the following format, with the type indicating which fields are present/absent from the record.

Type 0x02

Bytes	Bits	Description	Size
0	7-0	Sync (0xa5)	1 byte
1	7-0	Type (0x02)	1 byte
2-3	15-0	Size	2 bytes
4-7	23-0	Destination Address	4 bytes
8-11	23-0	Source Address	4 bytes
12	7-0	Flags	1 byte
13-17	39-0	Payload Data	5 bytes
18-19	15-0	RCL Vendor Checksum	2 bytes

Type 0x12

Bytes	Bits	Description	Size
0	7-0	Sync (0xa5)	1 byte
1	7-0	Type (0x12)	1 byte
2-3	15-0	Size	2 bytes
4-7	23-0	Destination Address	4 bytes
8-11	23-0	Source Address	4 bytes
12	7-0	Flags	1 byte
13-17	39-0	Payload Data	5 bytes
18-19	15-0	RCL Vendor Checksum	2 bytes
20	7-0	RSSI[1]	1 byte

Type 0x22

Bytes	Bits	Description	Size
0	7-0	Sync (0xa5)	1 byte
1	7-0	Type (0x22)	1 byte
2-3	15-0	Size	2 bytes
4-7	23-0	Destination Address	4 bytes
8-11	23-0	Source Address	4 bytes
12	7-0	Flags	1 byte
13-17	39-0	Payload Data	5 bytes
18-19	15-0	RCL Vendor Checksum	2 bytes
20	7-0	Time Slot[2]	1 byte

Type 0x32

Bytes	Bits	Description	Size
0	7-0	Sync (0xa5)	1 byte
1	7-0	Type (0x32)	1 byte
2-3	15-0	Size	2 bytes
4-7	23-0	Destination Address	4 bytes
8-11	23-0	Source Address	4 bytes
12	7-0	Flags	1 byte
13-17	39-0	Payload Data	5 bytes
18-19	15-0	RCL Vendor Checksum	2 bytes
20	7-0	RSSI[1]	1 byte
21	7-0	Time Slot[2]	1 byte

Type 0x42

Bytes	Bits	Description	Size
0	7-0	Sync (0xa5)	1 byte
1	7-0	Type (0x42)	1 byte
2-3	15-0	Size	2 bytes
4-7	23-0	Destination Address	4 bytes
8-11	23-0	Source Address	4 bytes
12	7-0	Flags	1 byte
13-17	39-0	Payload Data	5 bytes
18-19	15-0	RCL Vendor Checksum	2 bytes
20	7-0	RSSI[1]	1 byte
21-23	23-0	Extra Info	2 bytes
21	7	Direct or Infrastructure Mode	1 bit
21	6	Direct or Repeater Path	1 bit
21	5-0	Absolute Time Slot[2]	6 bits
22	7	External Alarm I/O	1 bit
22	6-4	Sequence Number	3 bits
22	3-0	Time Slot Group	4 bits
23	7-1	Not used	7 bits
23	0	Internal Alarm	1 bit

Type 0x52

Bytes	Bits	Description	Size
0	**7-0**	**Sync (0xa5)**	**1 byte**
1	**7-0**	**Type (0x52)**	**1 byte**
2-3	**15-0**	**Size**	**2 bytes**
4-7	**23-0**	**Destination Address**	**4 bytes**
8-11	**23-0**	**Source Address**	**4 bytes**
12	**7-0**	**Flags**	**1 byte**
13-17	**39-0**	**Payload Data**	**5 bytes**
18-19	**15-0**	**RCL Vendor Checksum**	**2 bytes**
20-22	**23-0**	**Extra Info**	**2 bytes**
20	7	Direct or Infrastructure Mode	1 bit
20	6	Direct or Repeater Path	1 bit
20	5-0	Absolute Time Slot[2]	6 bits
21	7	External Alarm I/O	1 bit
21	6-4	Sequence Number	3 bits
21	3-0	Time Slot Group	4 bits
22	7-1	Not used	7 bits
22	0	Internal Alarm	1 bit

[1] Repeater: Negative = Primary RX, Positive = Diversity RX; LCU: Negative = Direct Path, Positive = Repeated Path.

[2] Absolute number from 0 to 46.