## **GBT Spectrometer**

## **SPEAD Packet Format for High-Bandwidth Modes**

0x53	0x04	0x03	0x05	0x0000	0x000A
1	0x001		Counter		
1	0x002		Heap size		
1	0x003		Ottset		
1	0x004		packet payload length		
1	0x020		Time stamp		
1	0x021		Spectrum counter		
1	0x022		Integration size		
1	0x023		mode		
1	0x024		Status bits (4bits)		
0	0x025		Payload data offset		
payload data packet					
Y 8 bytes					
o bytes					

## Notes:

- 1. A single spectrum may be split over multiple SPEAD packets.
- 2. Within the *Payload Data* field, the data is stored as follows: Ch0\_XX\*, Ch0\_YY\*, Re(Ch0\_X\*Y), Im(Ch0\_X\*Y),

Ch2047\_XX\*, Ch2047\_YY\*, Re(Ch2047\_X\*Y), Im(Ch2047\_X\*Y)

- 3. Each value is a 32-bit signed integer.
- 4. Ch[0-2047] is the spectral channel. For modes where only 1024 spectral channels are used, the packet will only be 4kB long.
- 5. XX\* is a real number and represents the power in X plane. YY\* is a real number and represents the power in Y plane. X\*Y is a complex number and represents the cross-correlation. XY\* is not transmitted.