

S-Band Encode Method

1 Data Format and Encode: The transmitting data are consisted of following parts:

(1) Preamble Part

This is simple 0b01010101... (0x555...) binary code for carrier synchronisation at the demodulator.

(2) Data Packet Part

This part (Frame) includes a packet synchronisation code (4 Byte) and data payload (256 Byte), and this combined 260 Bytes.

The data payload are scrambled by PN11 based KEY code and NRZ-S. The following procedure is the data encode method at the transmitter side:

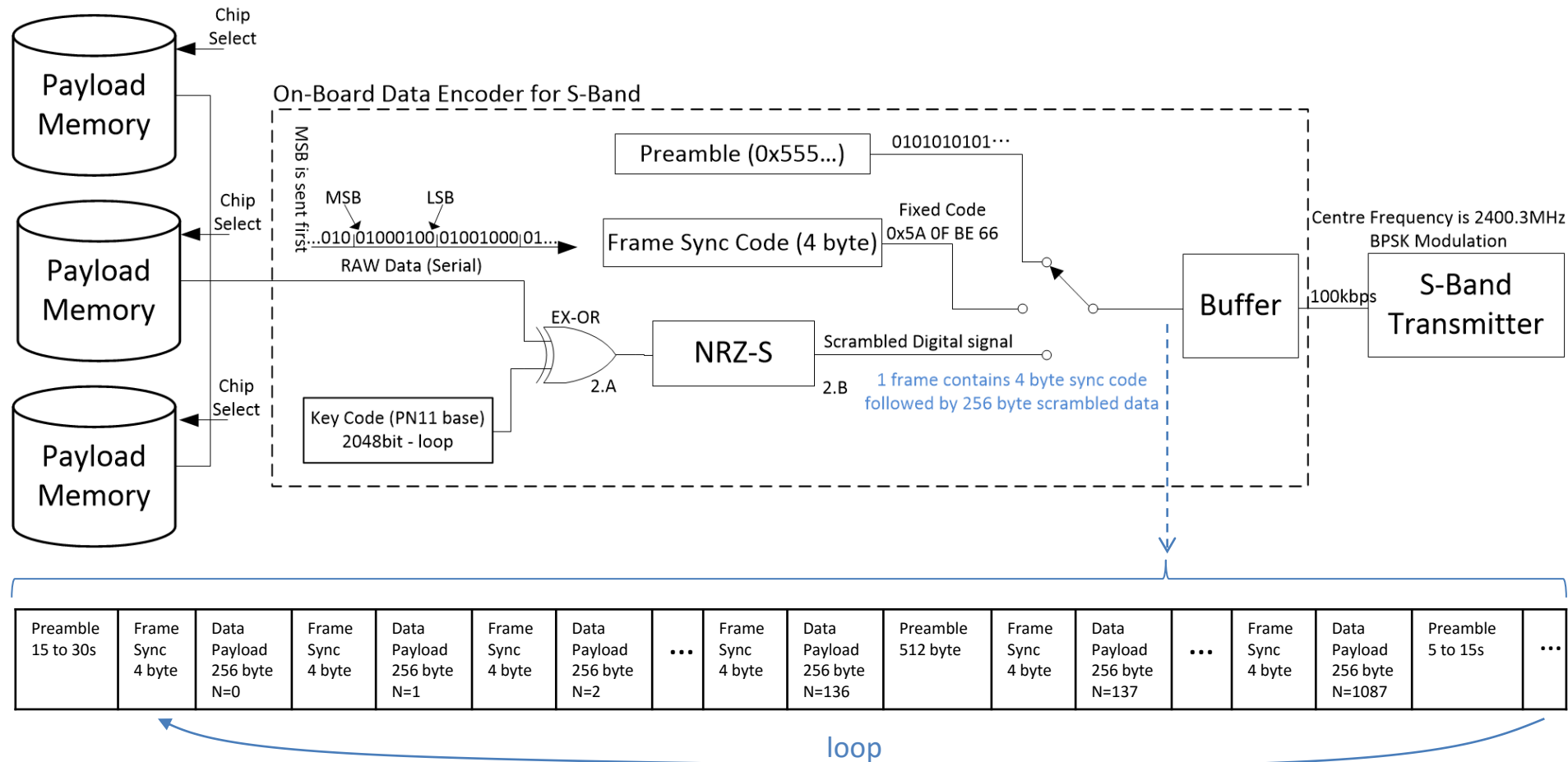
A. Each data payload is EXOR with PN code (2048bit/256byte)

B. Apply NRZ-S to the data payload processed in "A". Its initial value is 0 (Lo), and reset at the beginning of each frame.

The packet synchronisation code (0x5A 0F BE 66) is (plain) not scrambled.

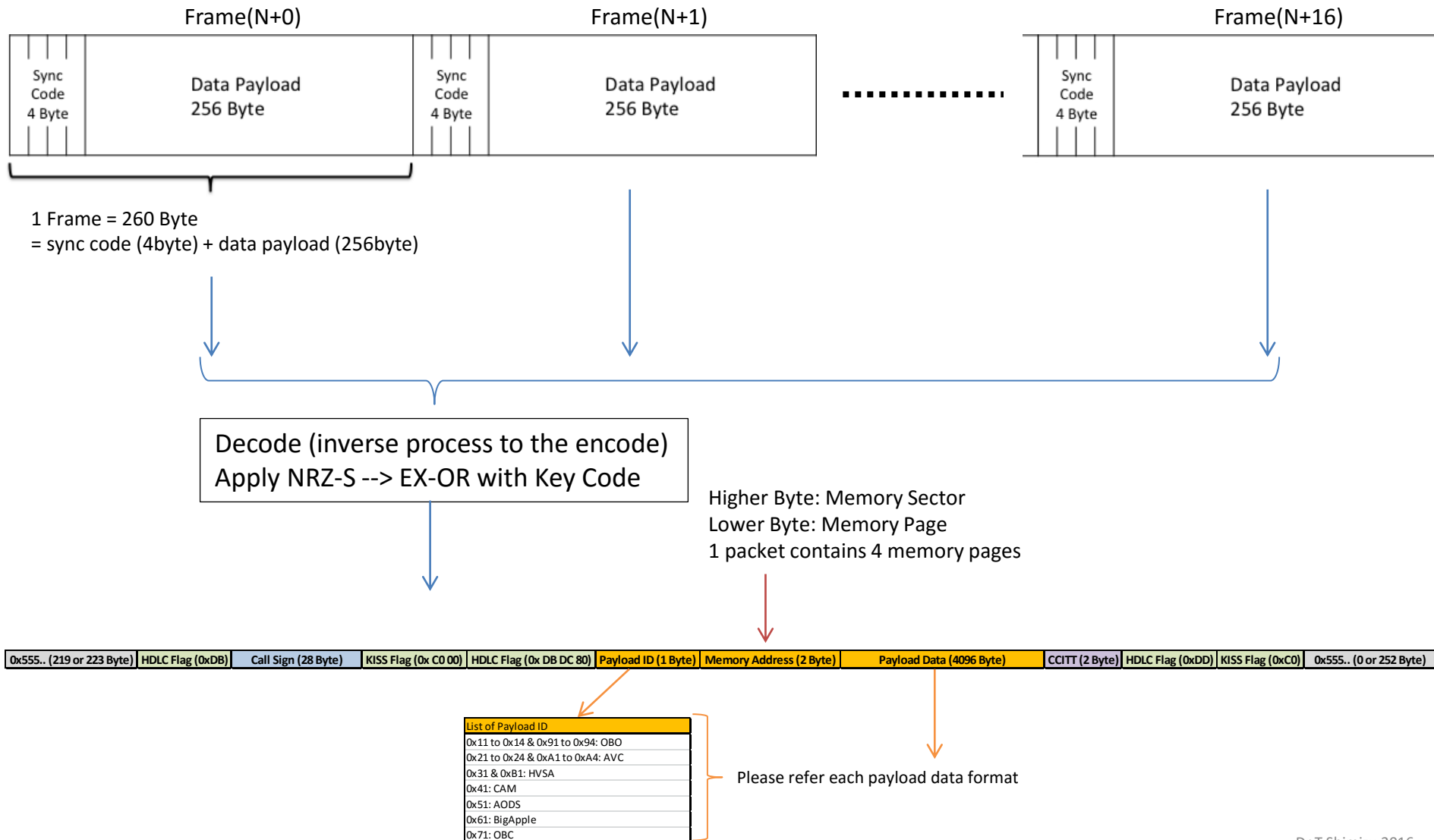
Vice versa at the receiver side to descramble (decode) the payload data.

Signal is continuous.



S-Band Packet Format

1 packet is consisted of 17 frames. 4 byte sync code is removed when assembling the data payload.
 1 packet contains 4096 byte of data with header and footer



KEY Code

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	0x55	0x80	0x30	0x1E	0x0C	0xC7	0xFB	0x02	0xE1	0x2C	0xB3	0xCF	0x9E	0x3C	0xD9	0xF7
2	0xC5	0x1A	0x2E	0x52	0xE3	0x2D	0xF3	0x47	0xCB	0x1C	0xED	0xEB	0x48	0xCD	0x7F	0x10
3	0x6A	0x38	0x5B	0x26	0xF7	0xA5	0x26	0x37	0xDD	0x15	0x28	0x31	0x1E	0xAC	0x83	0xD1
4	0x92	0xFB	0x22	0xF5	0x24	0x36	0x9D	0x9D	0x7D	0x11	0x2A	0xB0	0x0E	0xC3	0xB9	0xAB
5	0xE0	0x8C	0x57	0xA1	0x24	0xB6	0xCD	0xBF	0x68	0x59	0x27	0xB7	0x2D	0x73	0x17	0xE9
6	0x09	0xA5	0xE6	0x4F	0xEE	0x0A	0xC4	0x3A	0x9A	0x1E	0x4C	0xEF	0xEA	0x08	0x45	0x2A
7	0x30	0x5E	0x24	0xD6	0xF1	0xA6	0xE7	0xAF	0x22	0x75	0x74	0x14	0x88	0xD5	0x70	0x16
8	0x09	0xC5	0xDA	0x56	0x61	0xFC	0xC1	0xF8	0xC3	0x79	0xD3	0xD3	0x93	0xBB	0xAA	0xA0
9	0x04	0x02	0x81	0x10	0xAA	0x40	0x68	0x39	0x1B	0xAE	0xA2	0x85	0x12	0x2B	0x50	0xC2
10	0x79	0x73	0x97	0xB9	0x2B	0xB0	0xAE	0x42	0xE9	0x29	0xB1	0xEE	0xCA	0xBC	0x09	0x85
11	0xF2	0x47	0x6B	0x58	0xC7	0x7B	0x52	0xC3	0x39	0xFB	0xC2	0x99	0x1F	0xAC	0x23	0x95
12	0xB8	0x6B	0x38	0xFB	0x62	0xDD	0x35	0x3C	0x39	0x9B	0xFE	0x80	0x90	0x5A	0x26	0x57
13	0xE1	0x0C	0xA7	0xC7	0x1B	0x6E	0xDA	0xB6	0x0D	0xC7	0x5B	0x46	0xCB	0xBC	0xA9	0xC1
14	0xD8	0xD7	0x71	0x56	0x81	0x90	0xFA	0x62	0x7D	0x71	0x16	0xA9	0x81	0xF0	0xC6	0x7B
15	0xF2	0x87	0x13	0x6B	0xD8	0x97	0x59	0x47	0x8B	0x34	0xFC	0xE1	0xEC	0xCB	0xFC	0x81
16	0xD0	0xD2	0x73	0x77	0xD5	0x10	0x2A	0x10	0x4A	0x2C	0x53	0xA3	0xA5	0xA6	0x67	0x77

KEY code flows from 1A, 1B, 1C ... 2A ... to 16P

