

GGAK Format description

Júlia M.	Aang23	Aweeri
SatDump	SatDump	

August 17, 2025

Document describing the format used by Russian satellites that carry GGAK.

Contents

List of Figures	II
List of Tables	II
1 Elektro-L 2	1

List of Figures

1	Elektro-L 2 GGAK - Sync Word	1
2	Elektro-L 2 GGAK - Marker and Sub Marker	2

List of Tables

1	Elektro-L2 GGAK Frame Structure	1
---	---	---

1 Elektro-L 2

← 1792 bits →						
Sync Word	Marker	Sub Marker	Times-tamp	Data Block	Filler	CRC 16
CCSDS Standard ASM	Used to differentiate each frame (sequentially from 0-7)	Only used by the last frame (Marker 7)	Times-tamp of the current frame	Blocks of 50 bits	Filler 0xAA (Optional)	CRC 16
32 bits	4 bits	4 bits	64 bits	Varies	Varies	16 bits

Table 1: Elektro-L2 GGAK Frame Structure

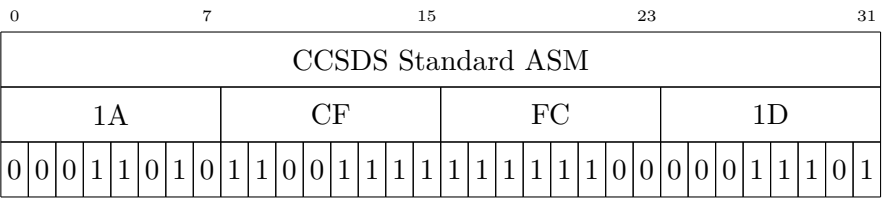


Figure 1: Elektro-L 2 GGAK - Sync Word

0				3 4 7			
Marker				Sub Marker			
0	0	0	0	0	0	0	0

Marker 0

0				3 4 7			
Marker				Sub Marker			
0	0	1	0	0	0	0	0

Marker 2

0				3 4 7			
Marker				Sub Marker			
0	1	0	0	0	0	0	0

Marker 4

0				3 4 7			
Marker				Sub Marker			
0	0	0	1	0	0	0	0

Marker 1

0				3 4 7			
Marker				Sub Marker			
0	0	1	1	0	0	0	0

Marker 3

0				3 4 7			
Marker				Sub Marker			
0	1	0	1	0	0	0	0

Marker 5

0				3 4 7			
Marker				Sub Marker			
0	1	1	0	0	0	0	0

Marker 6

0				3 4 7			
Marker				Sub Marker			
0	1	1	1	0	0	0	0

Marker 7 - Sub Marker 0

0				3 4 7			
Marker				Sub Marker			
0	1	1	1	0	1	1	1

Marker 7 - Sub Marker 7

Figure 2: Elektro-L 2 GGAK - Marker and Sub Marker