



CLEBER R2K14

## DESCRIPTION

Cleber offers a powerful, flexible and modular hardware and software platform for broadcasting and contribution networks where customers can install up to six boards with no limitations in terms of position or number. Based on a Linux embedded OS, it detects the presence of the boards and shows the related control interface to the user, either through web GUI and Touchscreen TFT display. Power supply can be single (AC and/or DC) or dual (hot swappable for redundancy); customer may choose between two ranges for DC sources, that is 22-65 or 10-36 Vdc for site or DSNG applications.

Thus Cleber can host any combinations of boards, there are particular applications and use cases that can be considered and described separately. Cleber is indeed the control unit for Elber **portable link** XPM; in case of transmitter control unit, the chassis is equipped with digital modulator (DVB-S/S2 and DVB-T), up-converter and, if needed, one or more encoders HD/SD (MPEG-2 or H-264) while in case of receiver control unit it would host digital demodulator, down-converter and decoders. For **DSNG** applications, the chassis can be equipped with encoder(s), TS switches, modulator(s), L-band switch and up-converter to C, Ku and Ka band. For the convergence to a **broadband** network, multiple ASI to IP and IP to ASI interfaces are available, both on fiber and copper support. For satellite **DVB-S2** contribution to transmitting sites in a TV or radio network, a multi-stream or single stream receiver is available. For **FM Radio** applications, MPX and AES-EBU over ASI are available, for full quality digital transfer of original contents.

Applications are multiple, it's at your care to design your platform!

## FEATURES

- Self-contained compact solution (1U RACK 19")
- 6 slots to install any type of boards
- TFT front panel control
- Embedded Linux OS
- Single or Dual Power supply (Hot Swappable)
- WEB interface, SNMP v2 and GPIO

### Applications

- DVB-S/S2 Modulator, Multistream, ASI inputs, L-band and IF output
- DVB-S/S2 Receiver, Multistream, 4 ASI outputs, L-band input
- C, Ku, Ka band upconverter
- TS network adapter (Broadcast and Telco networks convergence)
- MPEG-2/H.264 HD/SD 1080p Encoder and Decoder, 4:2:0/4:2:2
- ASI switch (1 output pass-through)
- ASI aggregator and deaggregator
- ASI distributor (1 output pass-through)
- SMPTE310 switch and distributor
- E1 switch and distributor
- FM-MPX over ASI high quality transport
- AES-EBU over ASI high quality transport

## SPECIFICATIONS

### **XS4:**

**Function:** DVB-S/S2 satellite receiver  
**Input:** L-band  
**Output:** 4 x DVB-ASI (TS)

### **MS2:**

**Function:** DVB-S/S2 satellite modulator  
**Input:** 2 x DVB-ASI  
**Output:** L-band / IF 70 MHz

### **EHD:**

**Function:** Encoder  
**Coding:** MPEG-II and H.264  
**Profile:** HD/SD  
**Video:** HD/SD-SDI, CVBS  
**Audio:** SDI-embedded, AES-EBU, analogue  
**Output:** DVB-ASI (TS)

### **DHD:**

**Function:** Decoder  
**Coding:** MPEG-II and H.264  
**Profile:** HD/SD  
**Input:** DVB-ASI (TS)  
**Video:** HD/SD-SDI, CVBS  
**Audio:** SDI-embedded, AES-EBU, analogue

### **SRS-03:**

**Function:** AES/EBU to ASI gateway (needs SRS-04)  
**Input:** 4 x AES/EBU  
**Output:** 1 x DVB-ASI (generic)

### **SRS-04:**

**Function:** ASI to AES/EBU gateway (needs SRS-03)  
**Input:** 1 x DVB-ASI (from SRS-03)  
**Output:** 4 x AES/EBU

### **SRS-05:**

**Function:** AES/EBU to ASI and ASI to AES/EBU gateway  
**Input:** 4 x AES/EBU  
 1 x DVB-ASI (generic)  
**Output:** 4 x AES/EBU  
 1 x DVB-ASI (generic)

### **SRS-06:**

**Function:** FM-MPX to ASI and ASI gateway (needs SRS-07)  
**Input:** 4 x MPX and 4 x FM 88-108MHz  
**Output:** 1 x DVB-ASI (generic)

### **SRS-07:**

**Function:** FM-MPX to ASI and ASI gateway (needs SRS-06)  
**Input:** 1 x DVB-ASI (generic)  
**Output:** 4 x MPX and 4 x FM 88-108MHz

### **DMX-04:**

**Function:** ASI de-aggregator (needs RMX-04)  
**Input:** 1 DVB-ASI (BNC 75  $\Omega$ )  
**Output:** 4 DVB-ASI (BNC 75  $\Omega$ )

### **DMX-14:**

**Function:** ASI de-aggregator (needs RMX-14)  
**Input:** 1 DVB-ASI (BNC 75  $\Omega$ )  
**Output:** 9 DVB-ASI (BNC 75  $\Omega$ )

### **RMX-04:**

**Function:** ASI aggregator  
**Input:** 4 DVB-ASI (BNC 75  $\Omega$ )

**Output:** 1 DVB-ASI (BNC 75  $\Omega$ )

### **RMX-14:**

**Function:** ASI aggregator  
**Input:** 7 DVB-ASI (BNC 75  $\Omega$ )  
**Output:** 3 DVB-ASI (BNC 75  $\Omega$ )

### **AS-03:**

**Function:** ASI Switch  
**Input:** 2 DVB-ASI (BNC 75  $\Omega$ )  
**Output:** 3 DVB-ASI (BNC 75  $\Omega$ )

### **AS-13:**

**Function:** ASI Switch  
**Input:** 3 DVB-ASI (BNC 75  $\Omega$ )  
**Output:** 7 DVB-ASI (BNC 75  $\Omega$ )

### **AS-23:**

**Function:** ASI Switch  
**Input:** 2 x 2 DVB-ASI (BNC 75  $\Omega$ )  
**Output:** 2 x 3 DVB-ASI (BNC 75  $\Omega$ )

### **AD-03:**

**Function:** ASI Distributor  
**Input:** 1 DVB-ASI (BNC 75  $\Omega$ )  
**Output:** 4 DVB-ASI (BNC 75  $\Omega$ )

### **AD-13:**

**Function:** ASI Distributor  
**Input:** 1 DVB-ASI (BNC 75  $\Omega$ )  
**Output:** 9 DVB-ASI (BNC 75  $\Omega$ )

### **AD-23:**

**Function:** ASI Distributor  
**Input:** 2 x 1 DVB-ASI (BNC 75  $\Omega$ )  
**Output:** 2 x 4 DVB-ASI (BNC 75  $\Omega$ )

### **Control:**

**Front panel** (TFT touchscreen display)

**Web browser** (embedded http server, no additional software needed)

**SNMP v2**

### **Electrical:**

**Supply:** 100-240 V ~ 50/60 Hz IEC 320  
 2 pins plug:  
 • DC 22  $\div$  65 V  
 • DC 10  $\div$  36 V

### **Power consumption:**

**Basic:** 4.5W  
**Maximum:** 120 W (six boards installed)

### **Mechanical:**

**Chassis:** 1U Rack 19"

### **Dimensions:**

**Width:** 482.5 mm  
**Height:** 43.65 mm  
**Depth:** 380.65 mm (without connectors)  
 357.80 mm (without handles and connectors)

### **Weight:**

**Basic:** 2.5 Kg  
**Max:** up to 7 Kg (depending on number of slots)

### **Environmental:**

**Operative Temperature Range:** -10  $\div$  55°C

**Relative humidity:** 0 - 95% non condensing



*\*Elber reserves the right to make changes to specifications of products described in this datasheet at any time without notice and without obligation to notify any person of such changes.*

**ELBER Srl. Via Pontevecchio, 42W - 16042 Carasco (GE) Italy**  
 Phone +39.0185.351333 fax +39.0185.351300  
[www.elber.com](http://www.elber.com) - [elber@elber.it](mailto:elber@elber.it)