WAYBER II

Analog/Digital Audio STL

Wayber II is the name of an analogue/digital microwave link able to transport a Mono or a MPX stereo signal from studio to audio transmitter.

Compact and reliable, it features very high quality and modern technology both in signal processing and microwave section leading to outstanding performances. This new equipment is compatible with T-R/NBFM from Elber, now out of sale.

The front panel presents a 3.5" TFT touchscreen, the Ethernet managment port, a USB connector for customer authentication and firmware upgrade, and some leds for immediate information about equipment status.

The back panel hosts all input/output connectors either for baseband and RF signals; baseband interfaces are Left and Right (analogue and AES-EBU), MPX, SCA and a "Transit" digital port. If inputs are Left and Right channel, the transmitter can act also as a stereo encoder, generating the MPX signal adding SCA subcarriers or creating RDS data through UECP protocol over RS-232 interface. The microwave section is wideband and can work between 400 MHz-1 GHz and 1-2.8 GHz.

The system can work in analog narrow band (200 kHz) mode, or in digital 64QAM avoiding any degradation even in case of unlimited hops and ensuring low consumption.

Based on a Linux embedded OS, it offers a very intuitive GUI, either through web and Touchscreen TFT display.

MAIN FEATURES

- Fanless reliable solution (2U RACK 19")
- Frequency Band:
  - 400 MHz ÷1 GHz
  - 1 GHz ÷ 2.8 GHz
- Up to 25 MHz frequency agile
- Digital Signal Processing Technology
- Very low phase noise
- IF bandwidth: 200 KHz
- FM Output Power: 36 dBm
- 64QAM Output Power: 28 dBm
- Excellent Noise figure
- FM stereo Multiplex or audio Mono inout
- TFT front panel control
- Embedded Linux OS
- WEB interface, SNMP

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SPECIFICATIONS

GENERAL

Frequency range: 400 MHz ÷ 2.8 GHz
Frequency agility: any 25 MHz (bandpass filter)
Frequency resolution: 1 KHz
Frequency stability: ± 1 ppm
IF frequency: 125 MHz (anal.), 25 MHz (digital), Zero IF

TRANSMITTER

RF Output Level: +36 dBm (4W) Analog
+28 dBm (Digital)
Level Adjustment: 20 dB in 1 dB steps
RF connector: N(f) 50 Ω
RF monitor connector: SMA(f) 50 Ω
Spurious emissions: < -60 dBc
Harmonics: < -60 dBc

FM MODULATOR

Pre-emphasis: 50 / 75 µs
MPX/SCA/RDS Inputs:
Impedance: 10 KΩ/600 Ω (selection with jumper)
Level: -3 dBu ÷ + 9 dBu (input att. off) or
-6 dBu + 3 dBu (input att. off)
+3 dBu ÷ +15 dBu (input att. on) or
0 dBu ÷ +9 dBu (input att. on) or
Level adj. MPX: +6 dB ÷ -6 dB steps 0.1 dB
Level adj. SCA: 18 dB Attenuation ON/OFF
Connector: BNC(f) 75 Ω
Sensitivity:
(@ dev control = 100%, inputs level = 6 dBu; gain adj = 0 dB; 6 dB atten = OFF)

MPX1/RDS	± 75 KHz
SCA1/ SCA2	18dB atten OFF: ± 75 KHz
18dB atten ON:	± 9.4 KHz
Pilot: 7.5 KHz	
CH right	67.5 KHz pk
CH left	67.5 KHz pk

Deviation clipping limit: 37.5KHz ÷ 150 KHz pk

ENCODER

MPX Source selection: MPX1 or Internal stereo encoder
Mode: MONO/STEREO
Inputs: **Channel LEFT and RIGHT balanced**
Impedance: 10 KΩ/600 Ω (selection with jumper)
Level: -3 dBu ÷ +9 dBu (input att. off)
+3 dBu ÷ +15 dBu (input att. on)
Level adj.: +6 dB ÷ -6 dB steps 0.1 dB
Connector XLR(f)
Pilot level adjustement: 50% ÷ 200 %

RECEIVER

Dynamic Range: -20 dBm ÷ -100 dBm
Spurious Rejection: > 70 dB
Selectivity:
@ ±150 KHz ± 0.01dB
@ ±200 KHz > -85 dB

CONTROL

Front panel (TFT touchscreen display)
Web browser
SNMP v2

DEMODULATOR

MPX/SCA Outputs:
Connectors: 2 x BNC(f)
Impedance: < 50 Ω unbalanced
Level: -3 dBu to +9 dBu (output atten. on)
+3 dBu to +15 dBu (output atten. off)
Level adj. : +6 dB ÷ -6 dB steps 0.1 dB
De-emphasis: 50 / 75 µs
Gain Flatness:
MPX: < ±0.1 dB @ 0 Hz ÷ 80 KHz
< ±0.2 dB @ 80 KHz ÷ 100 KHz
SCA: < ±0.2 dB @ 60 KHz ÷ 100 KHz
< -65 dB @ 0 Hz ÷ 48 KHz

DECODER

Outputs: **Channel LEFT and RIGHT balanced**
Connectors: XLR(m) Left and Right
Impedance: < 50 Ω balanced
Output Level: -3 dBu to +9 dBu (output atten. on)
+3 dBu to +15 dBu (output atten. off)
S/N Unweighted: > 65 dB @ 1mV
> 58 dB @ 100 uV
> 40 dB @ 20 uV
Stereo Separation: > 40 dB 0÷15 KHz
THD+noise: < 0.3%
Gain ripple: < 0.1 dB 0 Hz ÷ 10 KHz
< 0.2 dB 10 KHz ÷ 15 KHz

DIGITAL LINK

Modulation: 64 QAM
Ch Bandwidth: 200 kHz
FEC: Reed-Solomon (144,136)
Max Input Level: -25 dBm (12.5mV)
Min Input Level: -83 dBm (15 uV)
Equalizer: Adaptive, 15 ports
Transport: 2 audio channels
1 data channel (9600 Baud)
Sample Rate with SRC: 48 kHz, 44.1 kHz, 32 kHz
Resolution: 15 bits

ELECTRICAL

Supply: **AC** 90-260 V~ 47/63 Hz IEC 320
DC 22 ÷ 65 V 2 pins plug
Power consumption: < 45W

MECHANICAL

Chassis: 2U Rack 19”
Dimensions: 482.5 x 87.3 x 258 mm
Weight: 7 Kg

ENVIRONMENTAL

Operative Temp.: -10 ÷ 55°C
Relative humidity: 0 - 95% non condensing

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