



Eyal Microwave Ltd.

Phone: 972-9-7499100 Fax: 972-9-7493669

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Specification for

Wide Band Receiver

MODEL: WBR-2599-00

This specification establishes the performance for the HF RF Wideband Receiver.
The Wideband Receiver performs 4MHz band acquisition and Gain Control for the further
WB signal sampling by an AID converter.



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General Description

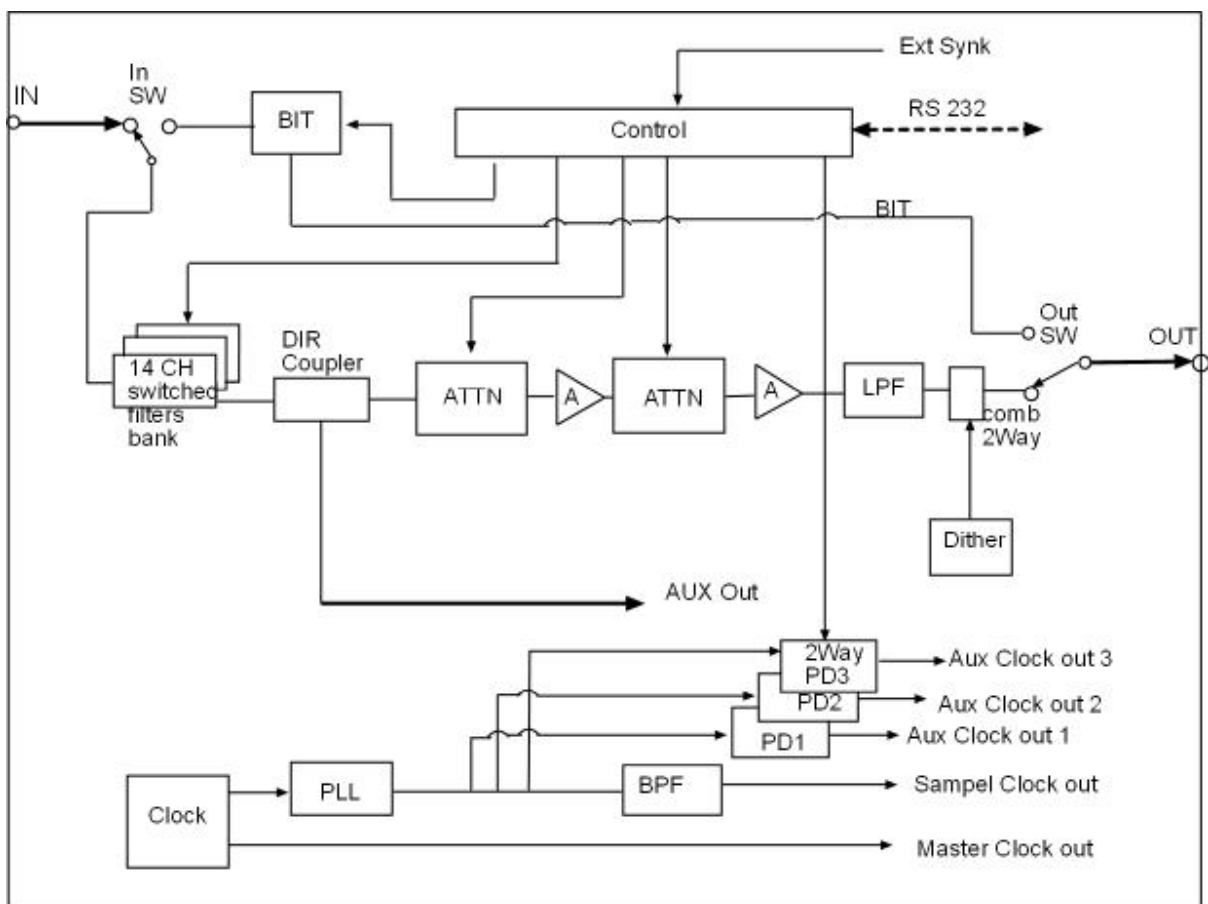
The Wideband Receiver is a part of the HF reception system.

The Wideband Receiver performs 4MHz band acquisition and Gain Control for the further WB Signal sampling by an AID converter.

The Receiver main tasks:

- Pre-selection . Amplification . Gain Control
- Auxiliary circuitry for an external AID
- Dither
- Master Clock
- Sampling Clock
- Auxiliary Clock (- selectable)

BLOCK DIAGRAM





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Receiver Outputs:

Two simultaneous outputs:

Main Out for continues WB Signal conditioning.

Auxiliary preselector out for external AGC detector circuit. Additional outputs:

Master Clock Out (2 outputs)

Sampling Clock Out (one output)

Auxiliary Clock - clock divided by N (N = 1,2,4);

(3 individually divided NI/N2/N3 outputs)

Modes of Operation

Normal Continues WB Signal conditioning.

BIT

The Receiver BIT capabilities include an internally injected (at the input or at the output) BIT signal, in order to be capable to detect faulty SRU's.

CHARACTERISCS

These characteristics describe the electrical performance, mechanical and of the WB Receiver.



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Electrical Performance

WB Receiver Specification

Frequency range..... 1.5-30 MHz

VSWR..... 2.5 : 1 max.

Preselection Switched filter bank

| BAND | Frequency MHz |
|------|---------------|
| 1 | 2 ÷ 4 |
| 2 | 4 ÷ 7 |
| 3 | 5 ÷ 8.5 |
| 4 | 6 ÷ 10 |
| 5 | 7 ÷ 12 |
| 6 | 8 ÷ 14 |
| 7 | 10 ÷ 17 |
| 8 | 13 ÷ 20 |
| 9 | 16 ÷ 23 |
| 10 | 19 ÷ 26 |
| 11 | 22 ÷ 30 |
| 12 | 1.5 ÷ 7 |
| 13 | 3 ÷ 8 |
| 14 | 4 ÷ 12 |

Maximum input power..... +23 dBm, no damage

Noise figure 13 dB max.,

Input 1P3 (out of pre-selector)..... + 30 dBm Min

Output 1P3 (within pre-selector)..... + 40 dBm Min

Input 1P2 (except bands (1, 12 - 14)..... + 60 dBm typo

2nd harmonic suppression (at the output):-30 dBm

Signal at half the frequency of the upper pass band produce a :

2nd harmonic signal less then: - 90 dBm at the output (no AGC).

Image rejection (relative to 40.96 MHz Fc)..... 100 dB Min (above 52 MHz)

Attenuator Settling time..... 1 mSec Max.



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Gain..... 26 dB min, 30 max
Gain Control (AGC/MGC) Range..... 50 dB min
AGC/MGC Step size..... 2 dB
AGC/MGC Attenuators Switching time..... 10 mSec
Output signal level (AGC) 0 dBm typo
Dither Signal bandwidth:..... 0 - 200 KHz
Dither Signal level..... - 50 +/-3 dBm @ receiver output

BIT Comb generator output signal

Frequency spacing:..... 2 MHz
Start - stop frequency..... 2÷30MHz
Power level at each harmonic frequency:..... - 30 +/-10 dBm @ receiver output
Auxiliary Pre-selector Out Level..... -15 dB typ, relative to the Input

Auxiliary Circuits Specifications

Internal Master Clock Frequency..... 10.24 MHz
Internal Master Clock Frequency stability..... Rubidium
Internal Master Clock Output level sinus..... +3/+6 dBm
Sampling Clock level Output sinus..... +3/+6 dBm
Sampling Clock Rate..... 81.92 MHz

Sampling Clock Phase noise

@ 1 kHz offset..... -115 dBc /Hz
@ 10 kHz offset..... -125 dBc /Hz
Sampling Clock Spurs..... - 100 dBc min



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Auxiliary Clock level Output sinus..... +3/+6 dBm

Power Supply

230 VAC +/-10%,50 Hz. Maximum input power-(50) Watt

Physical and Mechanical Outline Dimensions

19" width

1 U Height.