

Viplax-IIA analog Signal Transmission System

Hello!

please be aware that i am a matched Transmitter-Receiver pair. To get the best results it is a good practice to use the Tranmitter with its associated Receiver.

The Transmitter LEDs

During startup and after the link is established, the LEDs indicate shortly the firmware version of the transmitter in the format wx.yz. After this, the indication is as follows:

- FLT:** Transmitter fault e.g. low battery.
- G2:** Indicates the status of the second gain selector switch.
- G1:** Indicates the status of the first gain selector switch.
- PWR:** This signal indicates a correct link to the receiver unit.

The Receiver LEDs

In link synchronization mode all LEDs indicate at the same time, that the link synchronization is in progress.

In firmware version mode the LEDs shortly indicate the firmware version of the transmitter in the format wx.yz.

In normal operation:

- TFLT:** If the TFLT LED is indicating steady state then there is a transmitter fault.
If the TFLT LED signals short flashes, it reflects the receivers G1 gain setting.
- RFLT:** If the RFLT LED is indicating steady state then there is a transmitter fault.
If the TFLT LED signals short flashes, it reflects the receivers G2 gain setting.
- OTR:** The AD-converter on the transmitter unit is operating out of range.
- PWR:** This signal indicates a correctly working receiver unit.

Gain selection

TFLT = G1	RFLT = G2	Gain
1	1	10.0
1	0	5.0
0	1	2.0
0	0	1.0

Three seconds after the push button is released, the actual gain setting is stored.

Specification

Input Amplifier:

Input voltage range:	±1V; ±2V; ±5V; ±10V
Voltage Gain:	20dB; 14dB; 6dB; 0dB
The input range is selected from the receiver unit.	
3dB Frequency:	> 10 MHz

A/D Converter:

Digital Resolution:	14 bit
Sampling Rate:	65 Msps
Signal to Noise Ratio:	> 73 dB
Integral Linearity Error:	±2.5 LSB
Differential Nonlinearity:	±1 LSB
Further information:	see the Analog Devices AD9244 data sheet.

Overall Analog Section and AntiAliasingFilter:

No internal aliasing filter, the desired behaviour is selected using external filters.

3dB Frequency:	> 10 MHz depending on the filter accuracy
Nyquist frequency:	32.5 MHz

Digital Signal Processing:

Signal Latency:	< 0.08 µs
System Bandwidth (3dB):	typ. 10MHz, (up to the Nyquist frequency)
System Status Bits:	A/D Overflow, Battery Load Condition Link Fault, Gain selection

Fiber Optics:

Maximum Bit Stream Frequency:	1.3 Gbps
Optical Wave Length:	850 nm
Fiber Type:	50/125 µm core, multimode
Connector:	LC Type (duplex)
Maximum Length:	300m / 10.000m (with repeater)

D/A converter:

Resolution:	14 bit
Sampling Rate:	65 Msps.
Spurious Free Dynamic Range:	> 75dB.
Integral Linearity Error:	± 2.5 LSB.
Differential Nonlinearity:	± 1.5 LSB (typ).
Further information:	see the Analog Devices AD9764 data sheet.

Output Amplifier:

Output Voltage Range:	± 10.0 V
Output Impedance:	50 Ohm.
3dB Frequency:	> 10 MHz

Voltage Supply:

Receiver/Transmitter:	12 VDC / 1.2 A.
Current consumption Transmitter:	aprox. 0,25A.
Current consumption Receiver:	aprox. 0,17A.