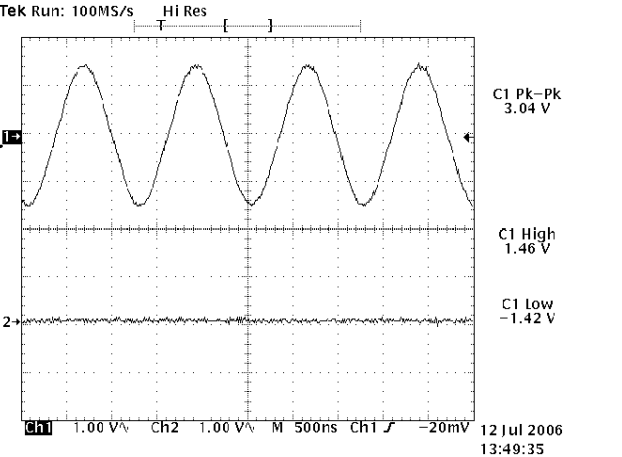
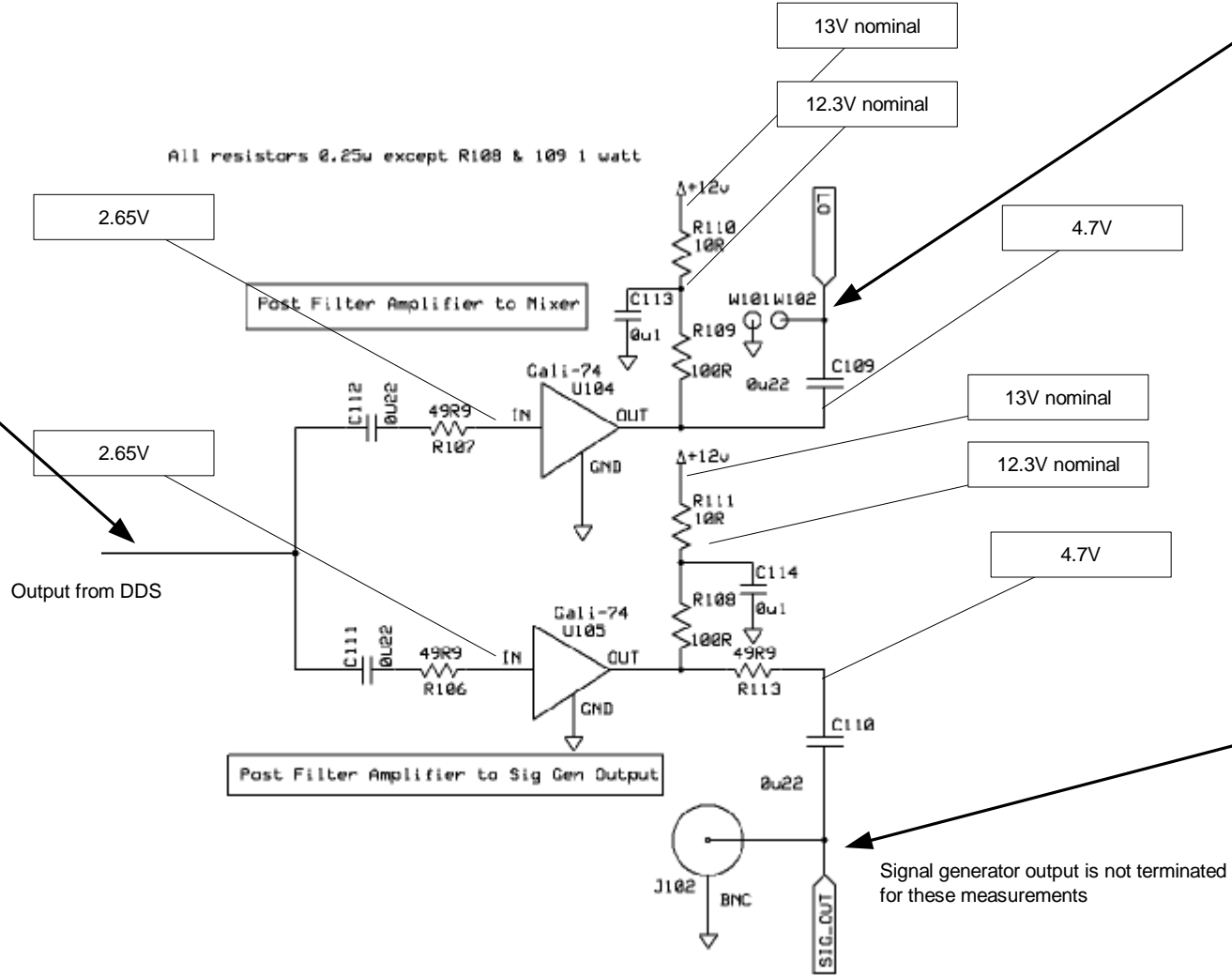
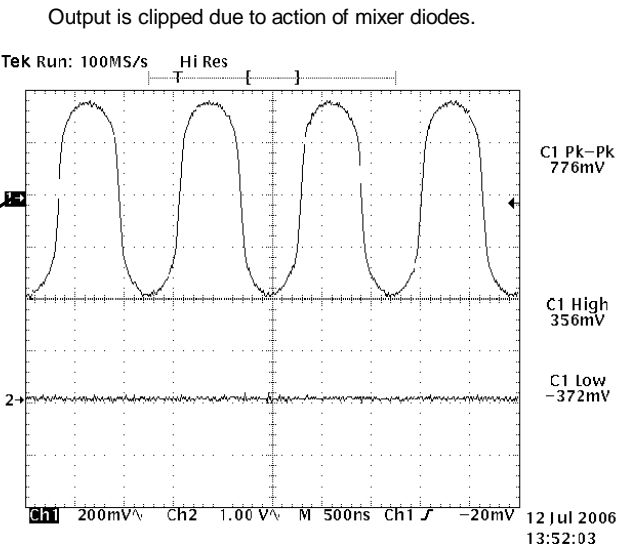
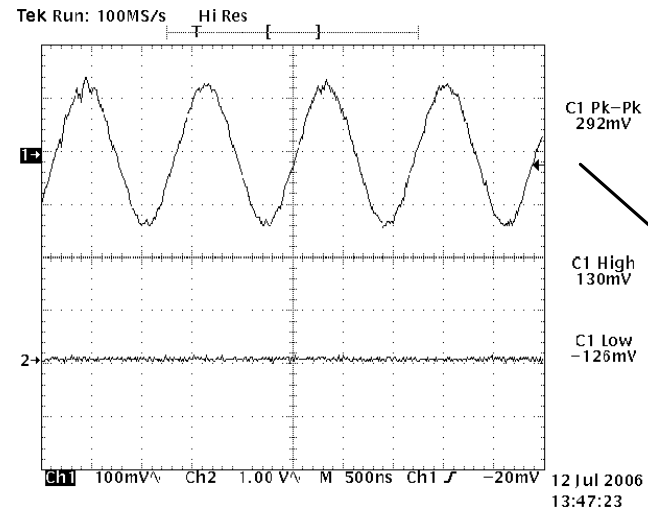


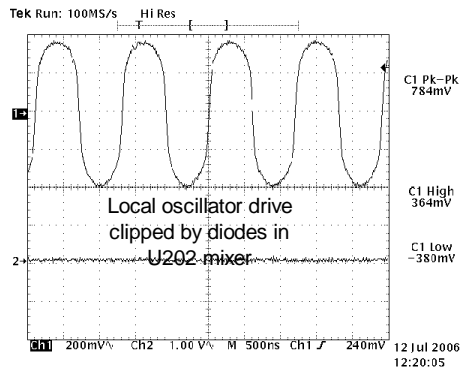
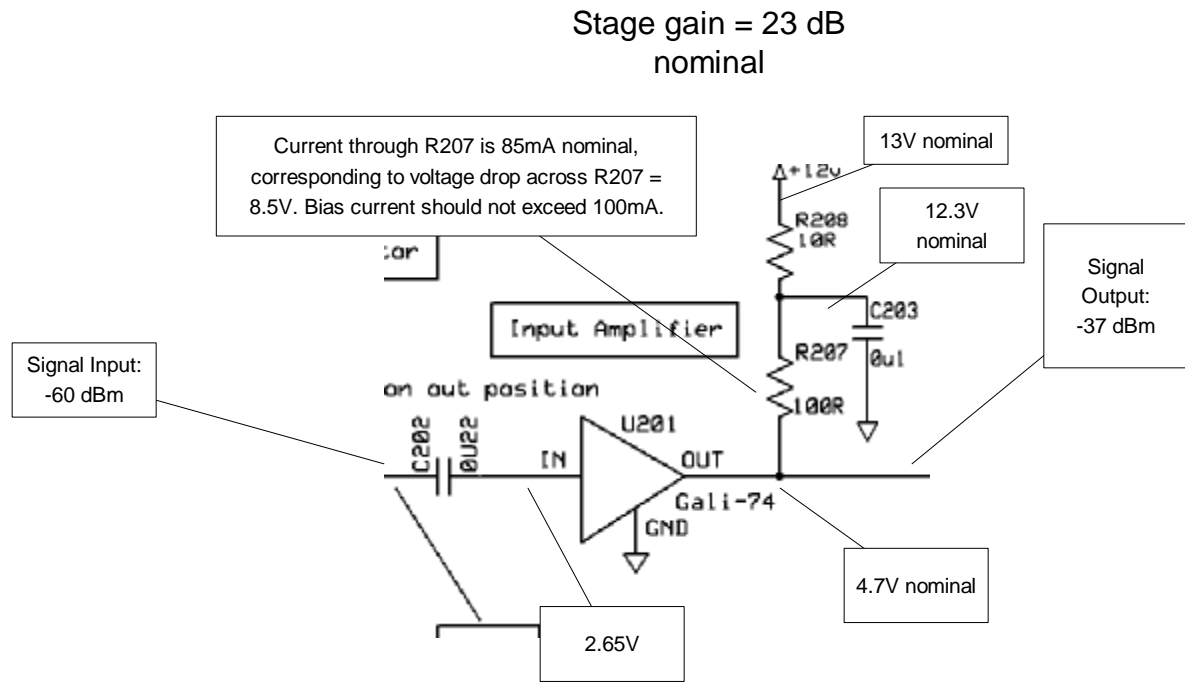
# Module 100 U101 & U102 Voltage and Waveforms

**Notes:**  
 1. DC supply voltage 13.5V.  
 2. Set for 8830 KHz IF, 50 KHz span, 1 KHz RBW, skip = norm, dwell = auto, and apply a 8830 KHz signal at -60 dBm to input.

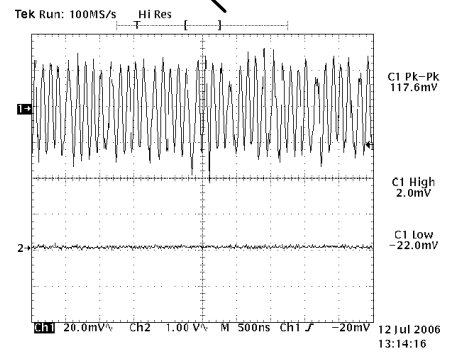
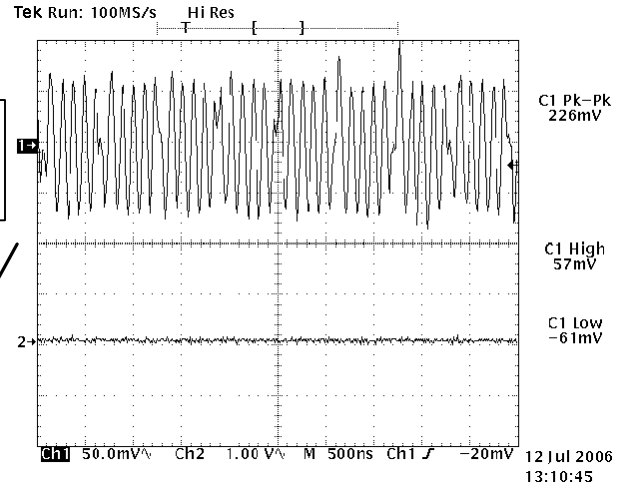
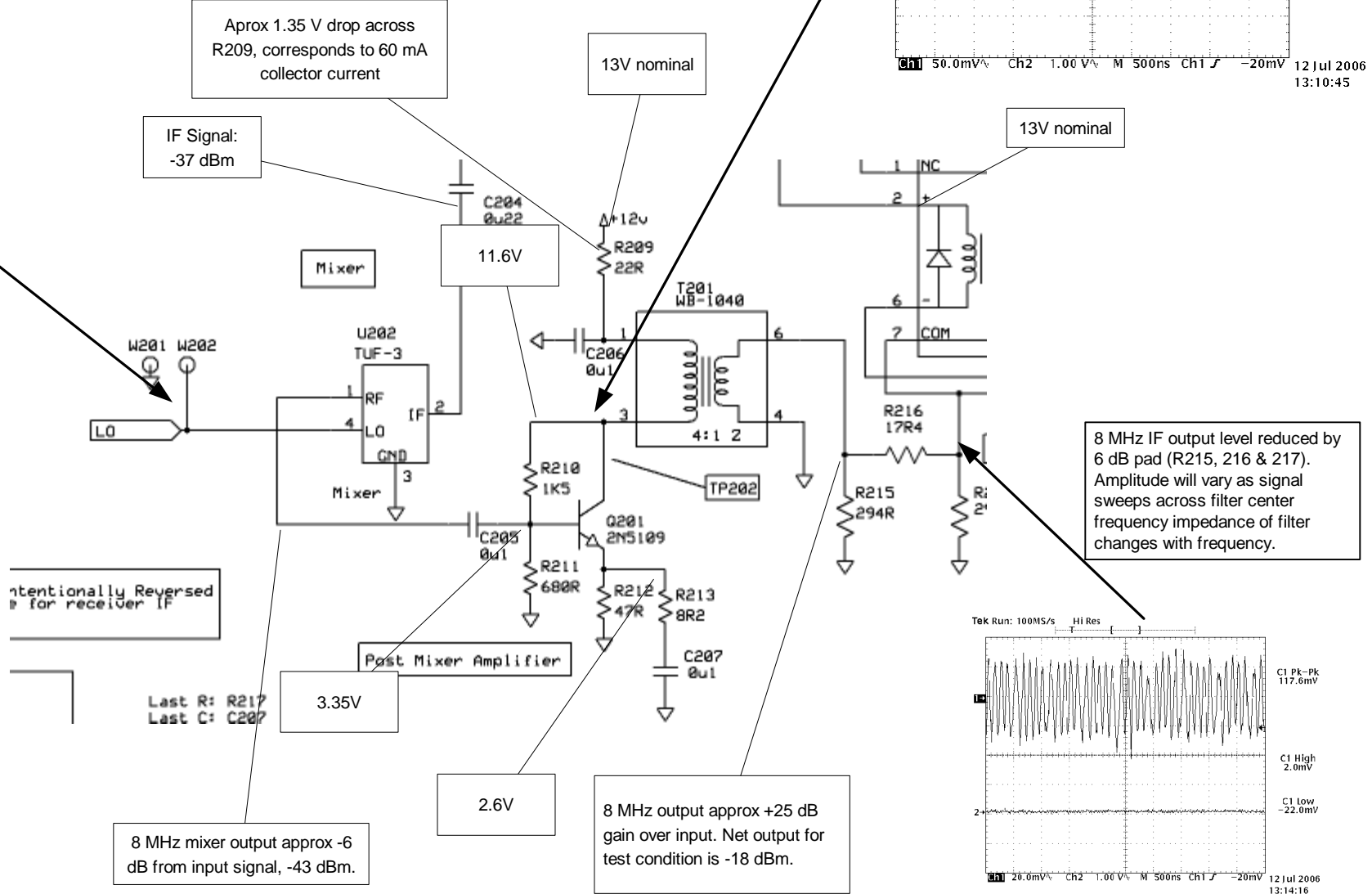
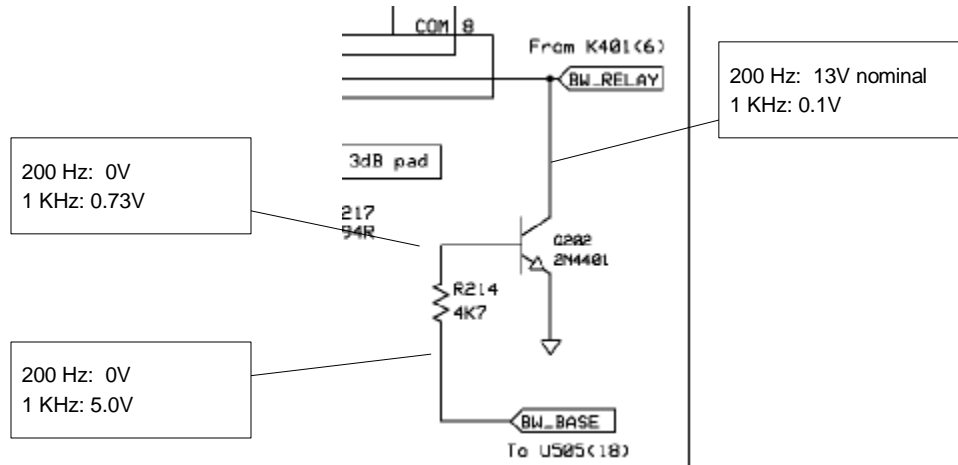


# Module 200 U201 Voltage and Waveforms

Notes:  
 1. DC supply voltage 13.5V.  
 2. Set for 8830 KHz IF, 50 KHz span, 1 KHz RBW, skip = norm, dwell = auto, and apply a 8830 KHz signal at -60 dBm to input.



Q202 controls bandwidth switching relays. Voltage readings for 200 Hz and 1 KHz bandwidth positions



Note: There are no DC voltages in module 300

To verify performance of Module 300 observe signal levels at input and output to each filter when selected with the equipment set up as per test conditions.

Since the filters are highly selective, the output will have a "blip" or burst of 8 MHz signal.

The input will have a signal with approximately constant amplitude, but with some variation due to changes in filter impedance versus frequency.

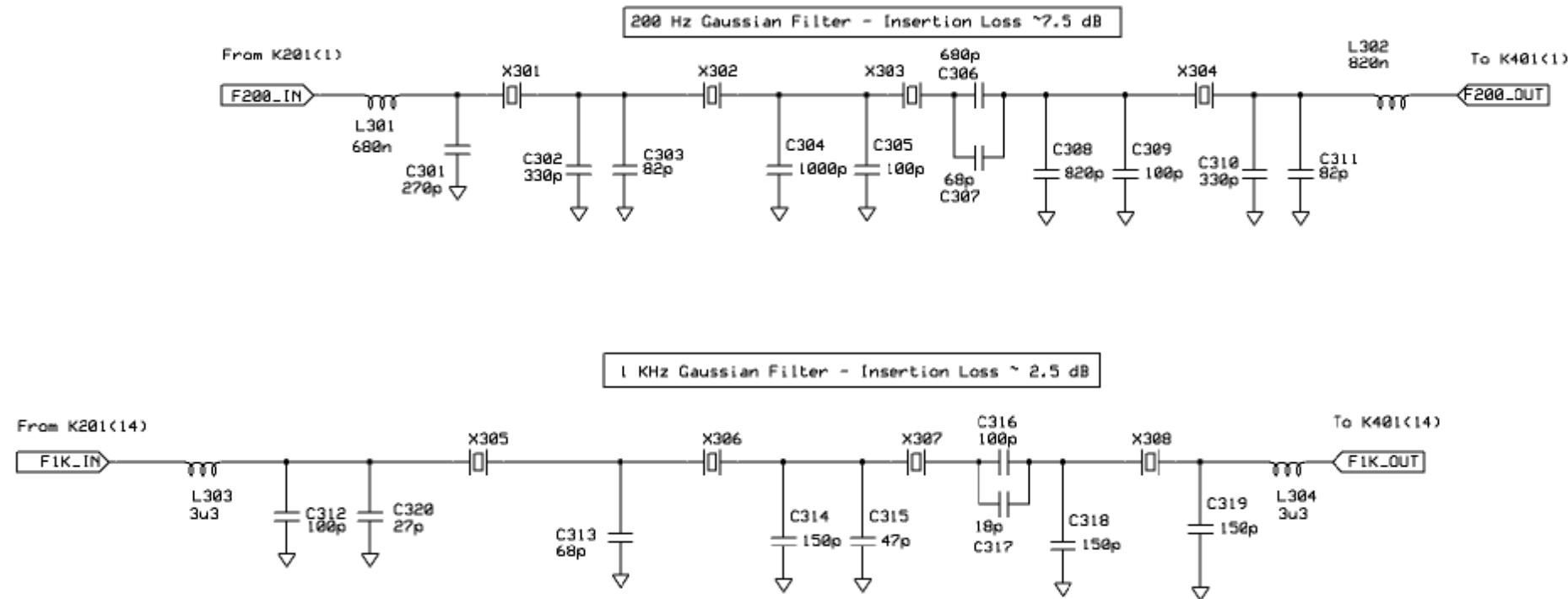
Measured loss through the filter (+/- 2 dB) are:

200 Hz filter: 7.5 dB  
1 KHz filter: 2.5 dB

## Module 300 Voltage and Waveforms

Notes:

1. DC supply voltage 13.5V.
2. Set for 8830 KHz IF, 50 KHz span, 1 KHz RBW, skip = norm, dwell = auto, and apply a 8830 KHz signal at -60 dBm to input.

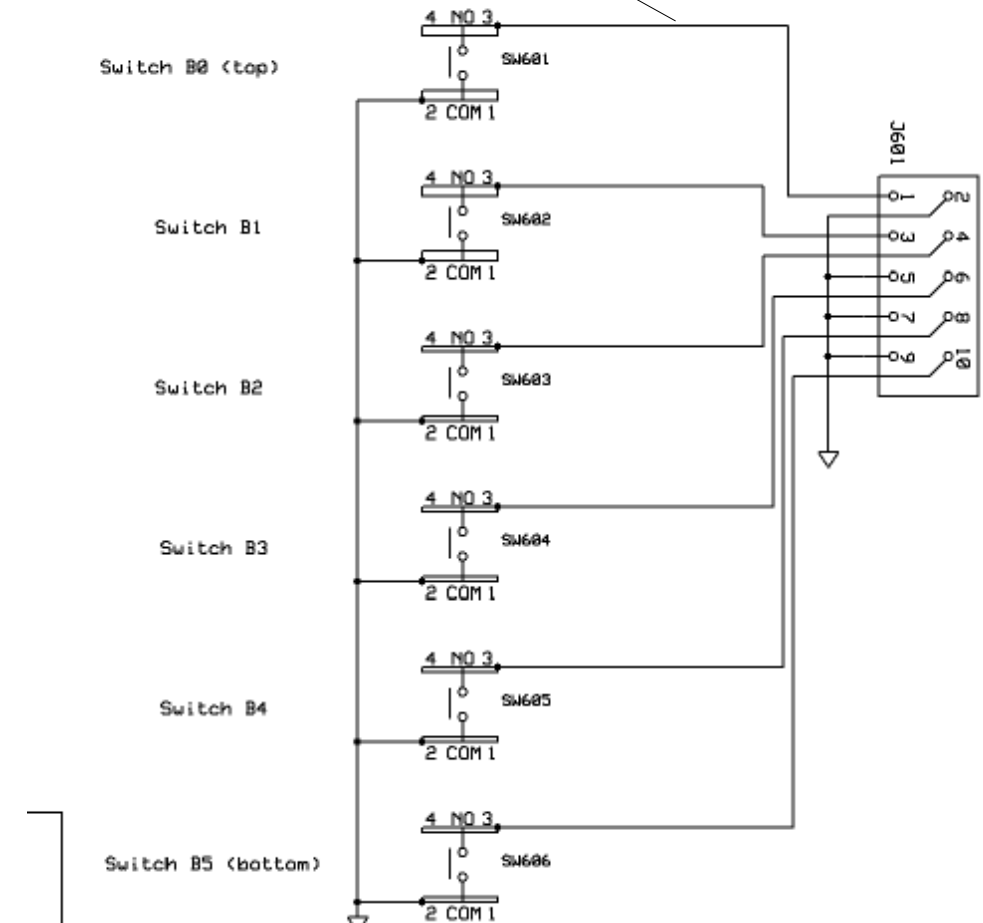


## Module 600 Z90 Softswitch Module Voltage and Waveforms

Each switch input is +5V +/- 0.2V when un-pressed.

When pressed, voltage should be 0V

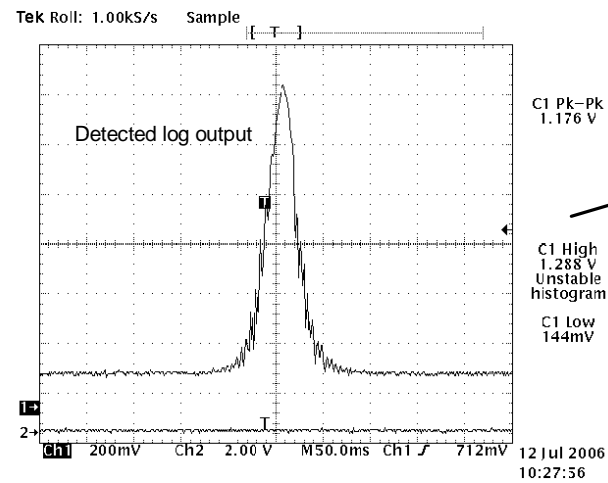
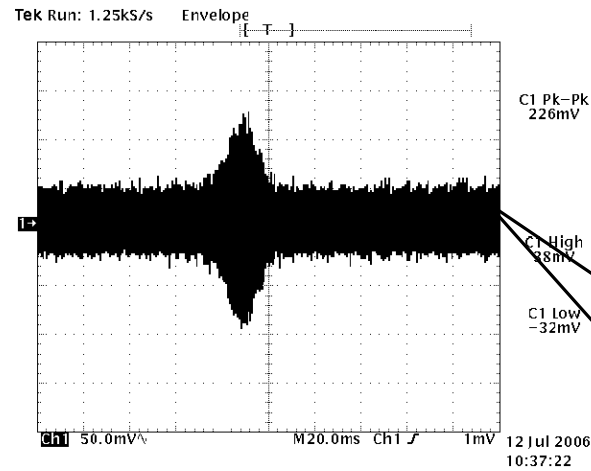
All switches identical



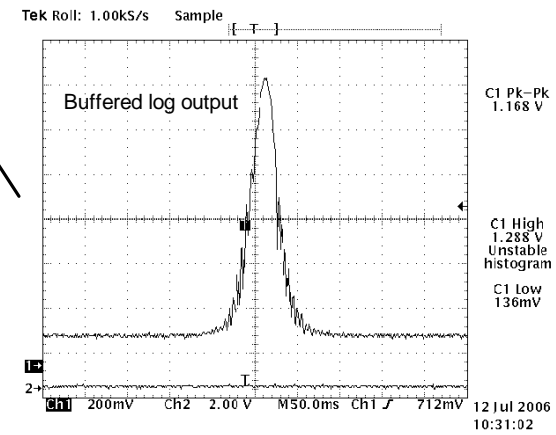
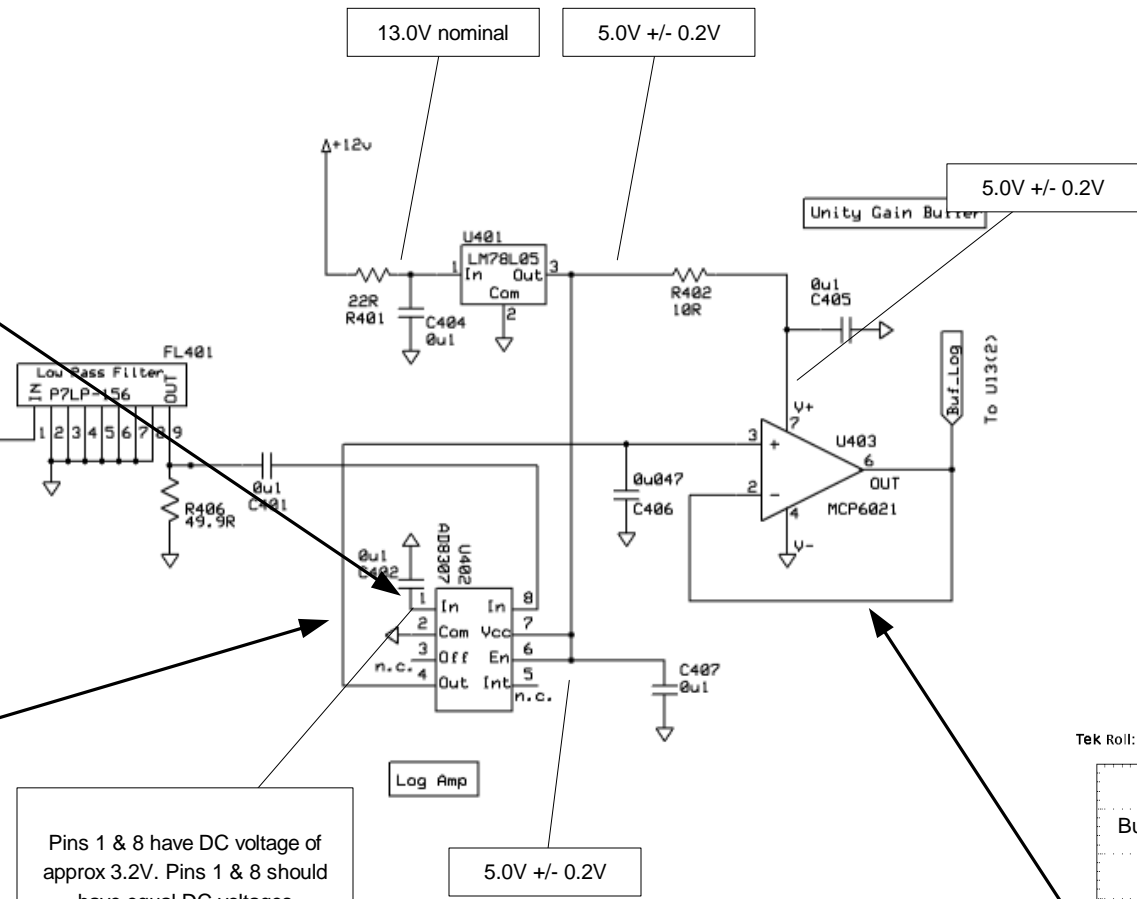
# U401, U402 & U403 Voltage and Waveforms

- Notes:
1. DC supply voltage 13.5V.
  2. Set for 8830 KHz IF, 50 KHz span, 1 KHz RBW, skip = norm, dwell = auto, and apply a 8830 KHz signal at -60 dBm to input.

The waveform here is swept, after the 8 MHz filter. If your scope has envelope detection, you will see this view. To measure at U402, pin 8, use AC coupling as there is a DC offset.



Pins 1 & 8 have DC voltage of approx 3.2V. Pins 1 & 8 should have equal DC voltages



# U504 Voltage and Waveforms

- Notes:
1. DC supply voltage 13.5V.
  2. RS-232 voltage levels vary wildly computer-to-computer.
  3. To see outbound data flow, enable output via software control.
  4. To see inbound data flow, send data to Z90/Z91 with Terminal or other program.

Note: J504, Pin 2 is outbound RS-232 data - before measuring enable data output flow

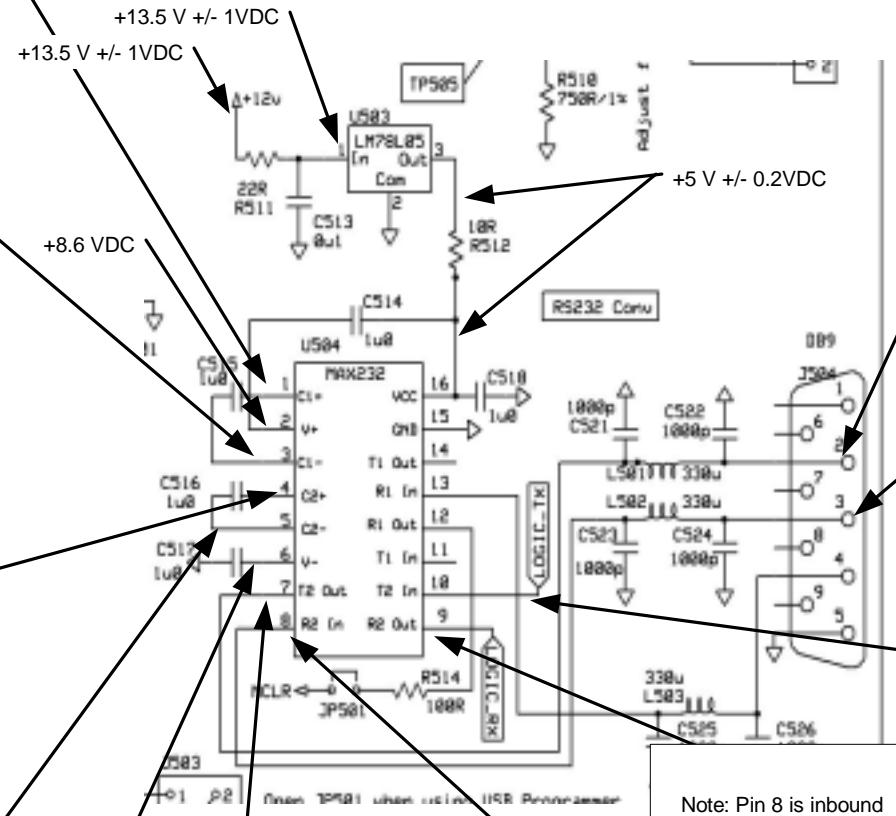
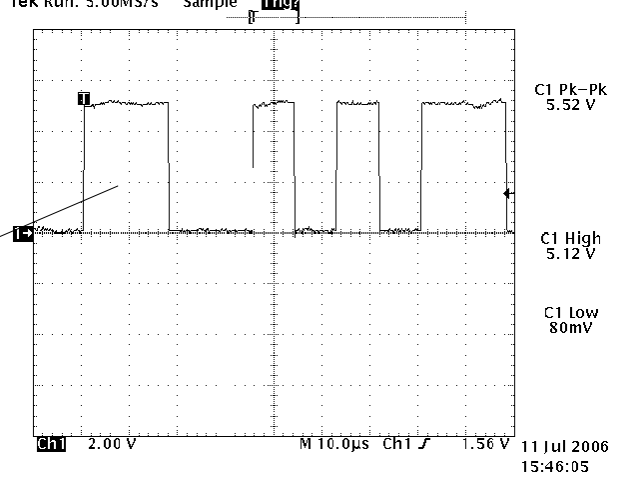
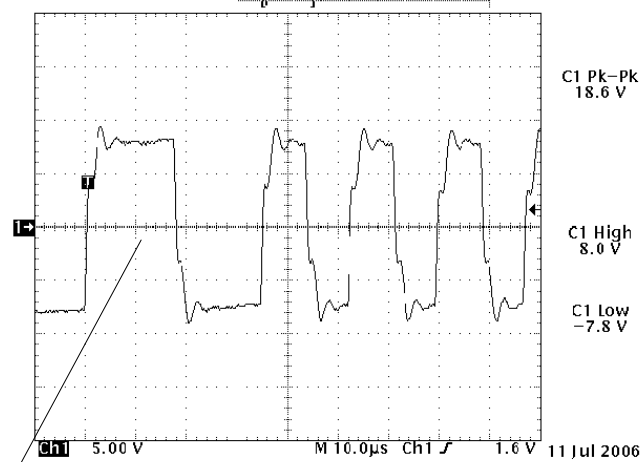
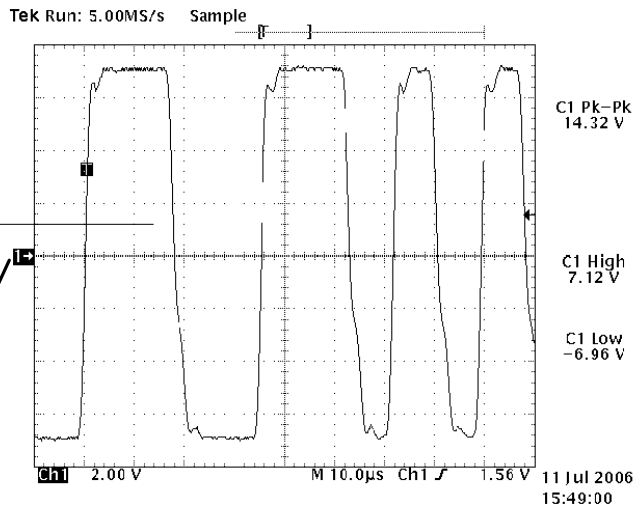
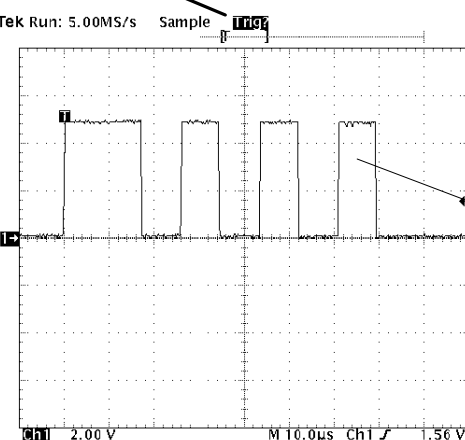
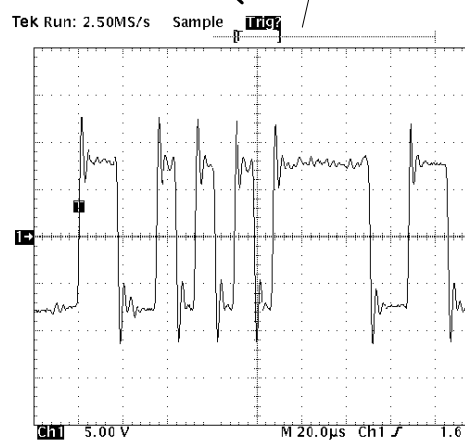
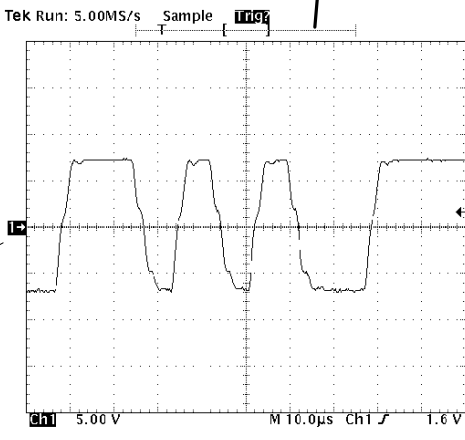
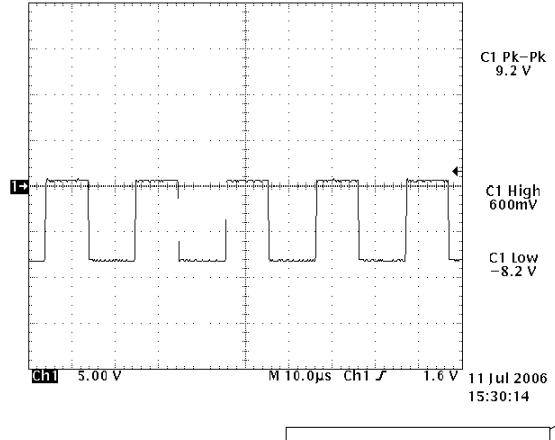
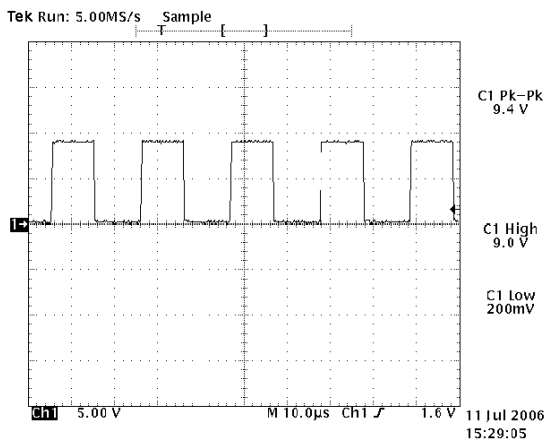
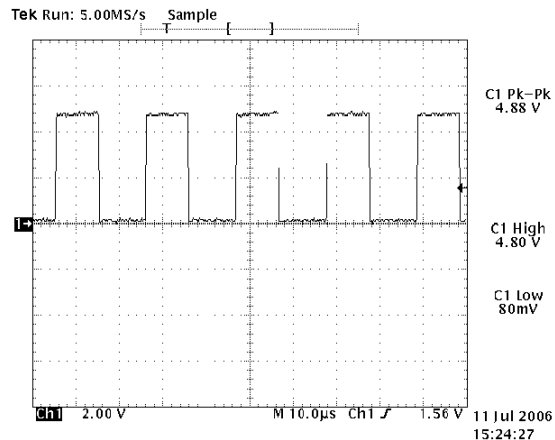
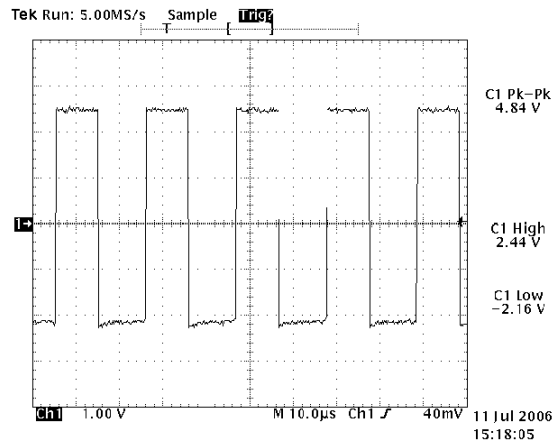
Note: J504, Pin 3 is inbound RS-232 data - waveform only present when data is sent to the Z90/Z91; otherwise idles at -7.8V

Note: Pin 8 is inbound RS-232 data. -7.8V with no inbound signaling. Scope shows data sent to Z90/Z91

Note: Pin 10 is outbound RS-232 data - before measuring enable data output flow

Note: Pin 7 is outbound RS-232 data - before measuring enable data output flow

Note: Pin 9 is inbound RS-232 data. 0V with no inbound signaling. Scope shows data sent to Z90/Z91

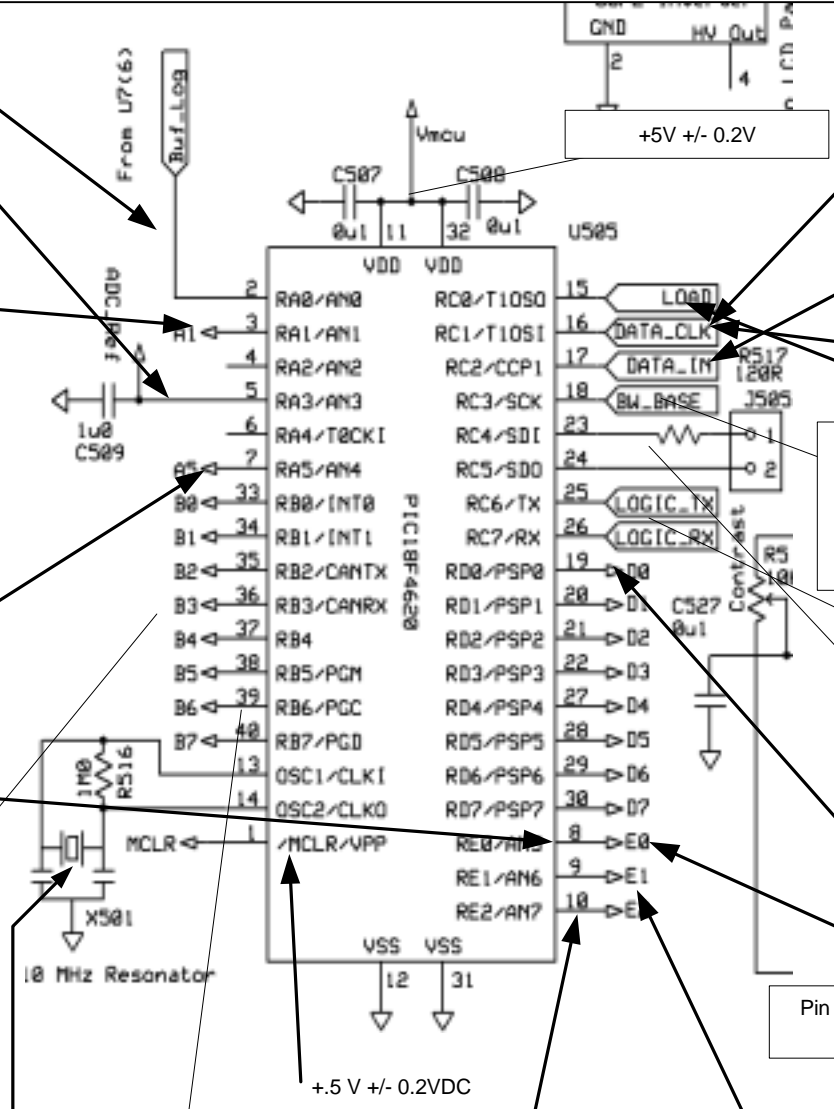
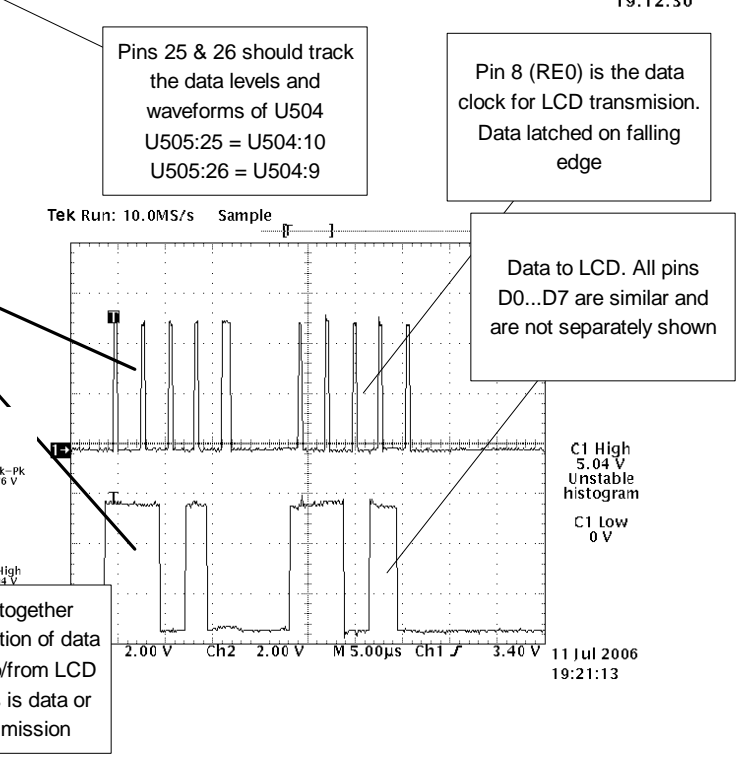
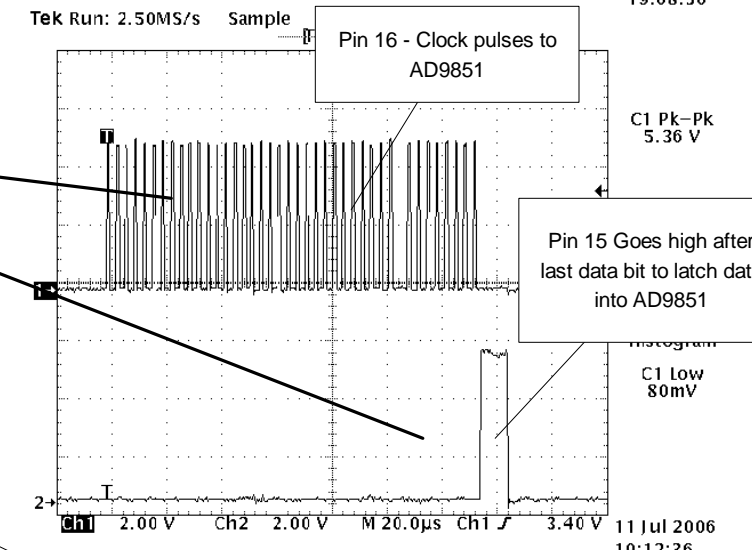
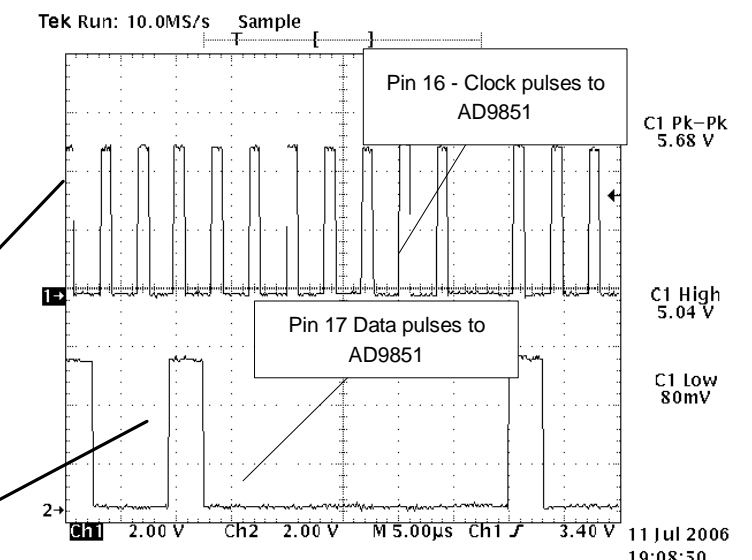
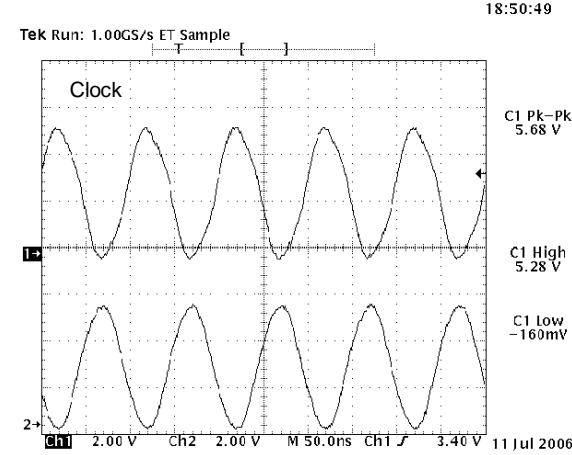
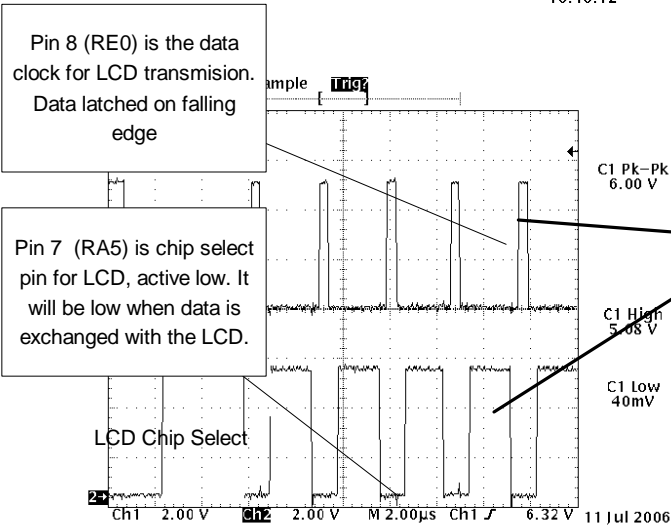
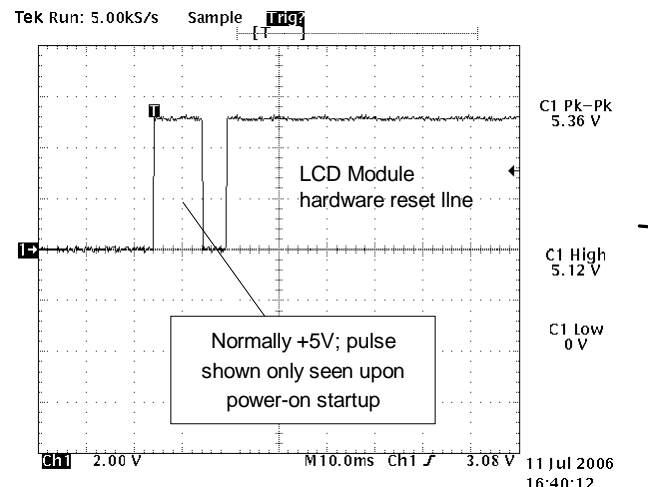
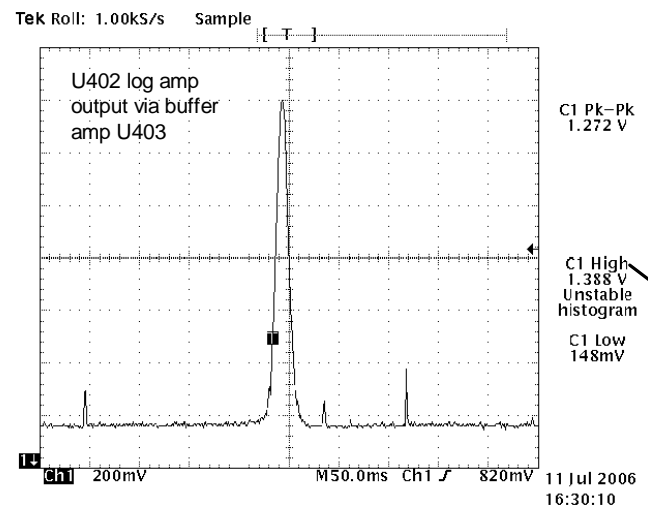


11 Jul 2006 15:18:05  
11 Jul 2006 15:24:27  
11 Jul 2006 15:29:05  
11 Jul 2006 15:30:14  
11 Jul 2006 15:34:14

11 Jul 2006 15:49:00  
11 Jul 2006 15:53:12  
11 Jul 2006 15:46:05

# U505 Voltage and Waveforms

Notes:  
 1. DC supply voltage 13.5V.  
 2. Set for 8830 KHz IF, 50 KHz span, 1 KHz RBW, skip = norm, dwell = auto, and apply a 8830 KHz signal at -60 dBm to input.  
 3. To see outbound data flow, enable output via software control.  
 4. To see inbound data flow, send data to Z90/Z91 with Terminal or other program.  
 5. LCD signals typical, will vary with data being displayed



Pins 13 & 13 both have 10 MHz clock signal

B6 & B7 are unused except if programmed via the 10-pin programming header. This part is not installed in a normal Z90/Z91 build.

Low = 200 Hz filter selected; High = 1 KHz filter selected

Pins 23 & 24 alternate high/low to flash LED. Should reverse at about 2 or 3 times per second

Pins 25 & 26 should track the data levels and waveforms of U504  
 U505:25 = U504:10  
 U505:26 = U504:9

Pin 8 (RE0) is the data clock for LCD transmission. Data latched on falling edge

Pins 9 & 10 together determine direction of data transmission to/from LCD and whether it is data or control transmission

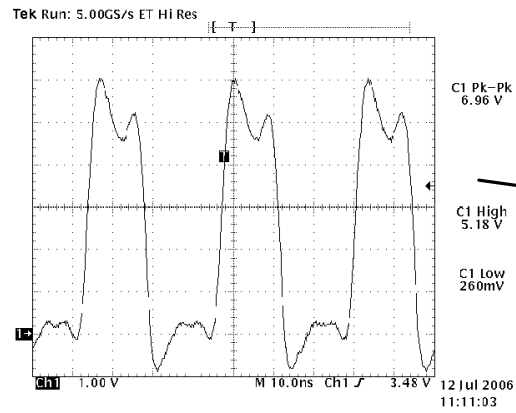
Data to LCD. All pins D0...D7 are similar and are not separately shown

# DDS Module U701, 792 & 703 Voltage and Waveforms

**Notes:**

1. DC supply voltage 13.5V.
2. Set for 8830 KHz IF, 50 KHz span, 1 KHz RBW, skip = norm, dwell = auto, and apply a 8830 KHz signal at -60 dBm to input.

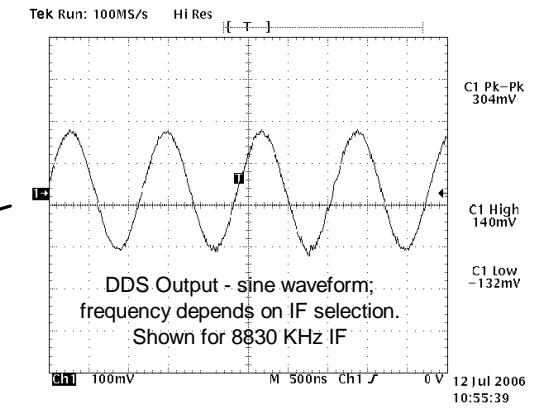
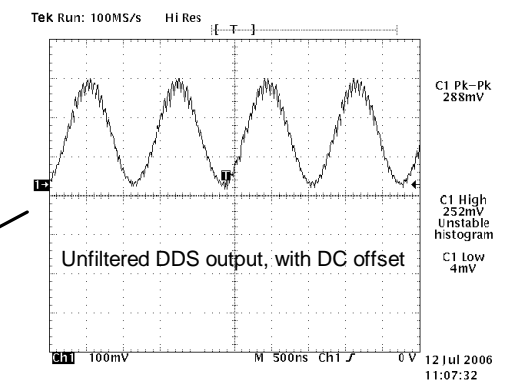
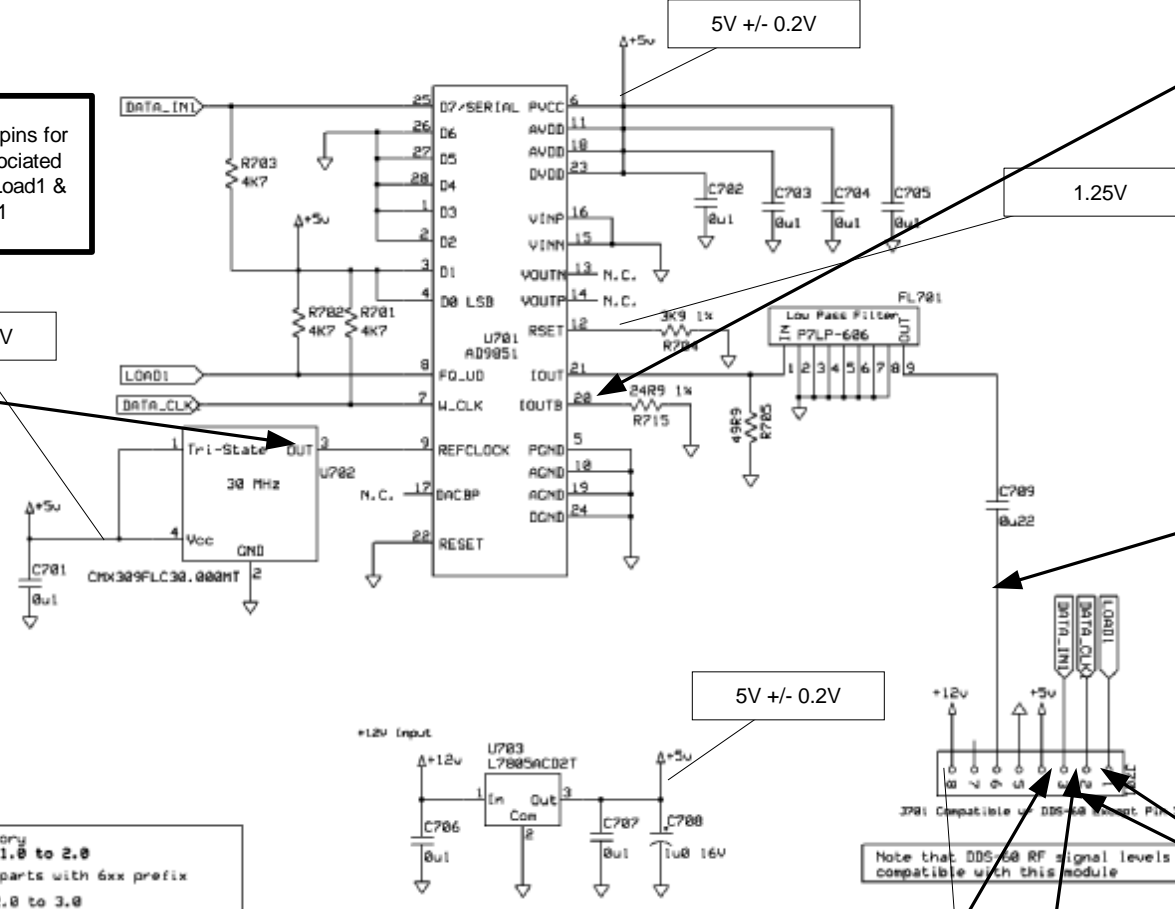
Note: See J701 pins for waveforms associated with Data\_In1, Load1 & Data\_Clk1



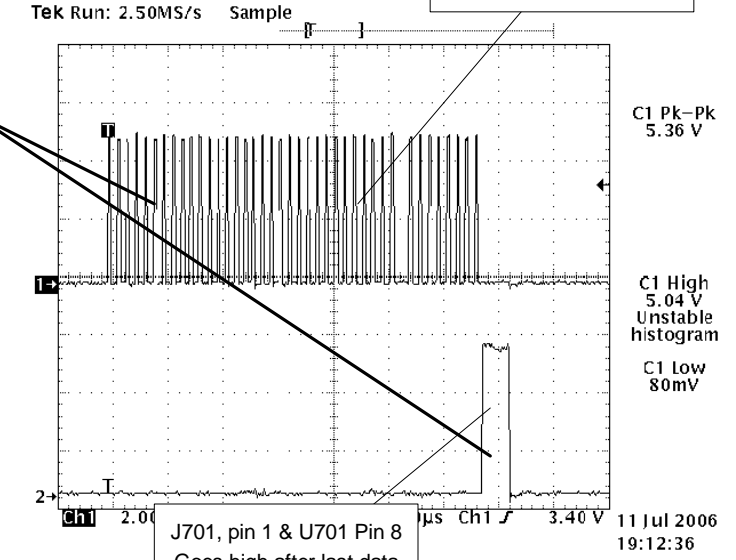
5V +/- 0.2V

30 MHz DDS Clock

Revision History  
Changes from 1.0 to 2.0  
Renummer all parts with 6xx prefix  
Changes from 2.0 to 3.0



J701, Pin 2 & U701 7 are DDS data clock



J701, Pin 2 & U701 7 are DDS data clock

J701, Pin 3 & U701 Pin 25 are data inputs

