



Gooch & Housego

MODEL NUMBER:

R390XX-YYDMZZZ-SC

COMPACT LOW POWER Q-SWITCH DRIVER

SPECIFICATIONS

DOCUMENT NUMBER: 56A19725A

PRODUCT DESCRIPTION:

The R390XX-YYDMZZZ-SC is a Compact, Low Power RF Driver Designed to Drive a Q-Switch and is manufactured as an OEM Module. The Unit has Two Digital Modulation Inputs: Fixed and Variable. These controls allow the Customer to issue a Pulse Command of a "Fixed" Pulse Width, the duration determined by the Drive's Pulse Width Control, settable by the Customer, or issue a "Variable" Pulse Command, the duration determined by the Input Signal Pulse Width. The choices of Driver Output Frequency (XX), Output Power (YY), and Analog Power Control or Pulse Suppression (ZZZ) options are "Factory Set" when ordered. The RF Driver produces output RF power of 2 to 24 watts into a 50 ohm load. The R in the model number indicates that this product is compliant with the EU Directive 2002/95/EC for Reduction of Hazardous Substance.

PARAMETER:

SPECIFICATION:

Output Frequency:	<u>XX</u> = 24, 27, 41, or 80 Where RF Frequency = 24.00, 27.12, 40.68 MHz, or 80.00 ± 0.01%
Spurious Levels:	-50 dBc Maximum
Harmonic Distortion	-20 dB Maximum
Modulation Input Mod In Fixed (pin 3) Mod In Variable (pin 5)	TTL Levels Triggered on TTL Rising Edge. Pulse Width Applied >50 ns. TTL Levels TTL HIGH = RF Off
Extinction Ratio:	40 dB Minimum
RF Rise Time 10% to 90%	100 ns Maximum
RF Fall Time: 90% to 10%	50 ns Maximum
Modulation Repetition Rates:	1 Hz to 500 kHz for Fixed Modulation DC to 500 kHz for Variable Modulation
Fixed Modulation Output Pulse Width Adjustment Range:	1 to 20 ms, Customer Adjustable
Available Pulse Suppression Modes:	<u>ZZZ</u> = Mode
Modulation Operating Mode is "Factory Set" Internally.	FPS = First Pulse Suppression See Figure 2 PPK = Pre Pulse Kill See Figure 3 R05 = RF Switched to Analog Control See Figure 4 A05 = Analog Control See Figure 5
FPS Trigger (pin 2) for Pulse Suppression for Units Configured with FPS, PPK:	TTL Levels, Triggered on TTL Rising Edge.
Analog in (pin 6) for Power Control for Units Configured with A05, R05:	0 to 5 volts Analog.
Enable - Stand by Mode (pin 11)	< 3 watt dissipation in stand by mode. TTL High or no connection = Normal operation TTL Low = Stand by Mode Momentary TTL Low = Driver Reset - after fault is removed.
Zero Crossing Enable (pin 7) normally If model # is (-ZC)	TTL high or no connection- disabled, TTL low- enabled TTL high or no connection- enabled, TTL low- disabled
Sync out (pin 1)	Outputs 3.3 volt signal
RF Power Output:	<u>YY</u> watts where YY = 2 to 24 watts
Output Impedance:	50 W
Supply Voltage:	+15 VDC
Supply Current:	< 3 amps.

OPERATING TEMPERATURE:

Contact Cooled

+10 to +55 °C

The Driver must be attached to a heatsink capable of dissipating 25 watts

MAXIMUM RATINGS:

Supply Voltage:

+18 volts

Power Output:

No DC Feedback Allowed

Storage Temperature:

-20 to + 85°C

CONNECTORS AND MECHANICAL:

RF Output Connector:

SMA Female

Connector:

12Pin Connector – Molex p/n 43045-1221

Pinout:

1	SYNC	7	ZERO CROSS
2	FPS TRIGGER	8	LP - Low Power Fault output
3	MOD IN FIXED	9	HP – High Power Fault output
4	GROUND	10	High VSWR Fault outut
5	MOD IN VARIABLE	11	ENABLE
6	MOD IN ANALOG	12	+ 15 VDC

ADJUSTMENTS:

RF Power Level Adjustment

Adjusts the output RF Power.

LP – Low Power Set Point

Adjusts the minimum power threshold. If the module’s output goes below this set value, the LP pin goes low, but the driver will continue to output power. This is a warning, not a true fault condition.

HP - High Power Set Point

Adjusts the maximum power threshold for the module. If the output rises above this threshold, , the HP pin goes low.

High VSWR Set Point

Adjusts the module’s tolerance for a mismatched load connected to RF Out. If a mismatch is detected, the driver will cease outputting power until reset by momentarily entering stand by mode.

Reverse Power – Normally disabled

Adjust maximum power reflected back from load. (option instead of VSWR)

Pulse Width

Adjusts the length of time the driver outputs no RF energy after receiving a Fixed Input trigger. 1µs to 20µs.

The following adjustments are used on units configured with FPS or PPK:

FPS Start

Adjusts the initial power level of the first pulse.

FPS Slope

Adjusts how quickly the RF pulses return to their normal level after the FPS has been triggered. 20 µs to 300 µs.

FPS Window

Adjusts the duration of the suppression pulse cycle. 20 µs to 300 µs

STATUS INDICATOR:

Red

Normal Operation

Green

Stand By Mode

Yellow

Fault Condition

For More Information, Contact: neos@neotech.com Ph. (321) 242-7818 Fax (321) 242-1019

FIGURE 2

FIRST PULSE SUPPRESSION OPERATING MODE CONTROL DIAGRAM

390XX-YYDMFPS-SC Control Diagram

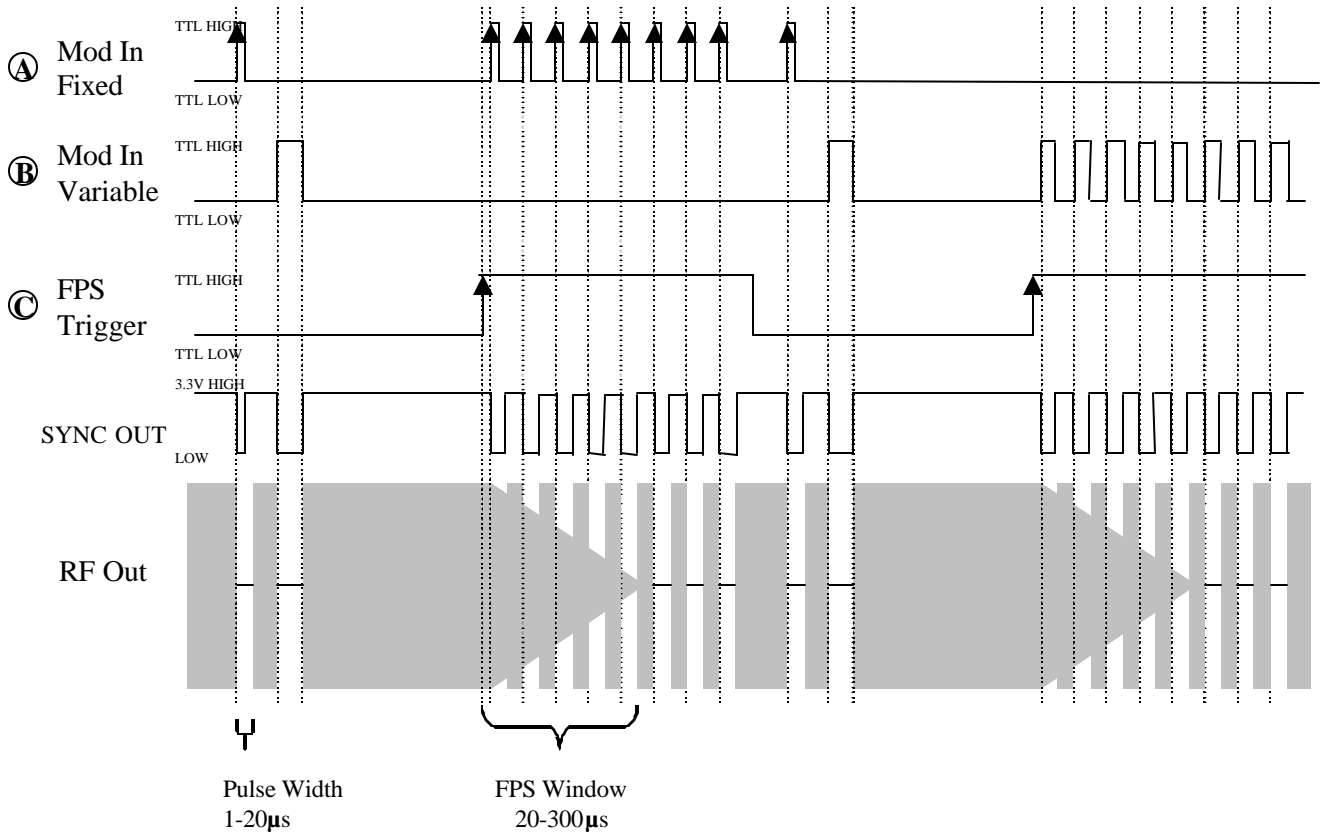
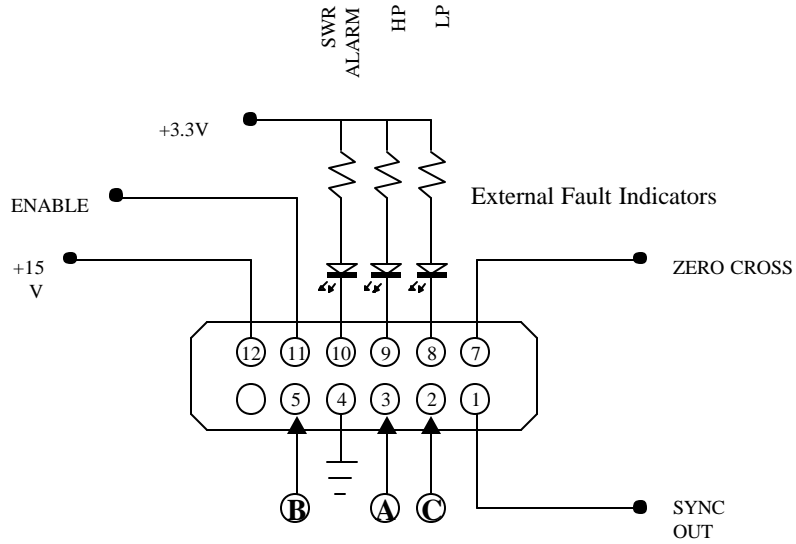


FIGURE 3

PRE PULSE KILL OPERATING MODE CONTROL DIAGRAM

390XX-YYDMPPK-SC Driver Control

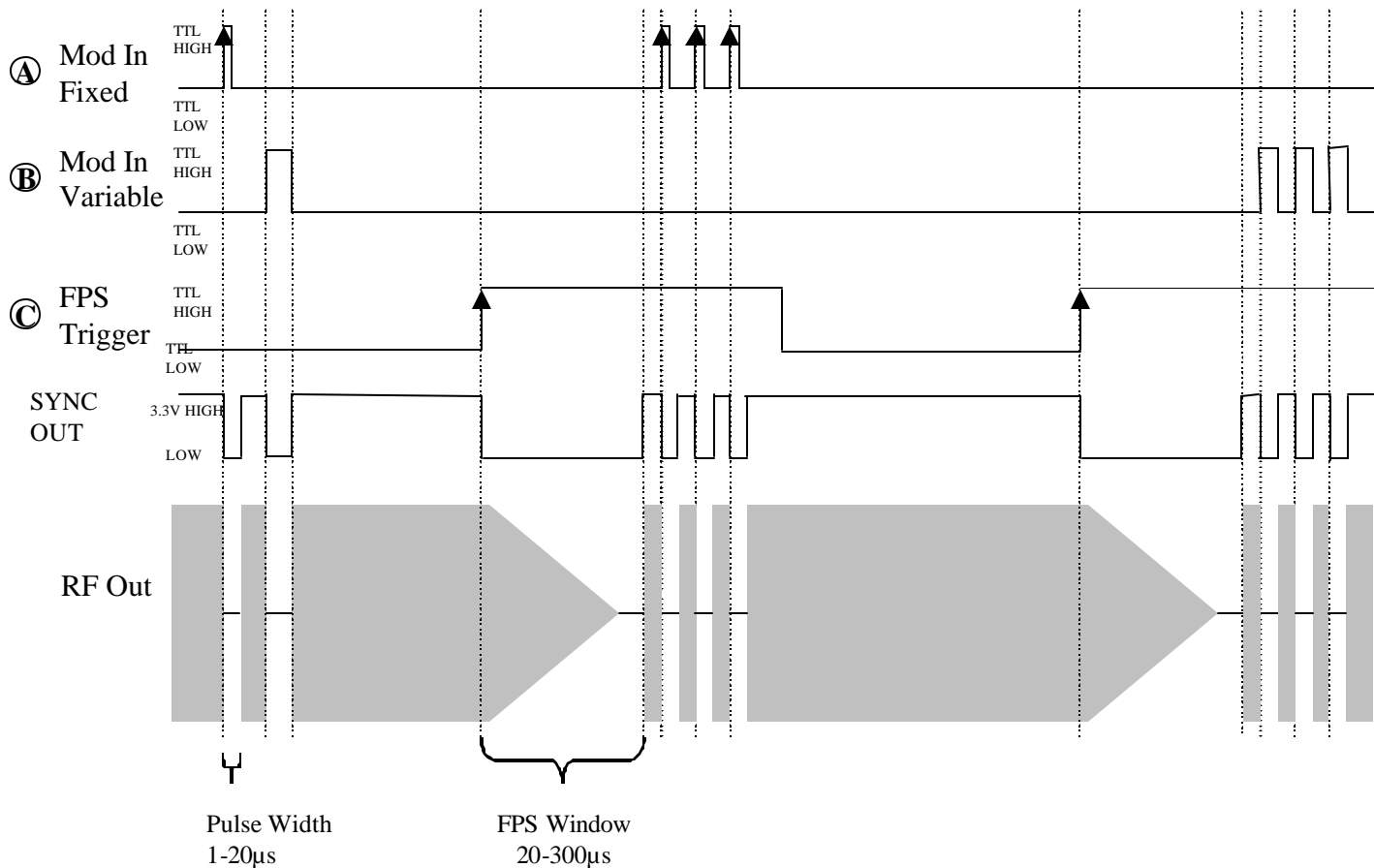
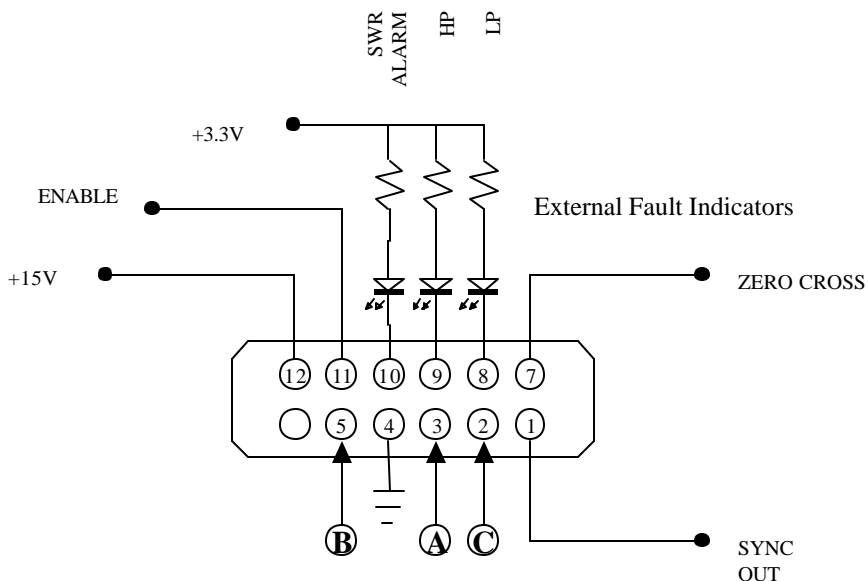


FIGURE 4

RF SWITCHED TO ANALOG CONTROL OPERATING MODE CONTROL DIAGRAM

390XX-YYDMR05-SC Control Diagram

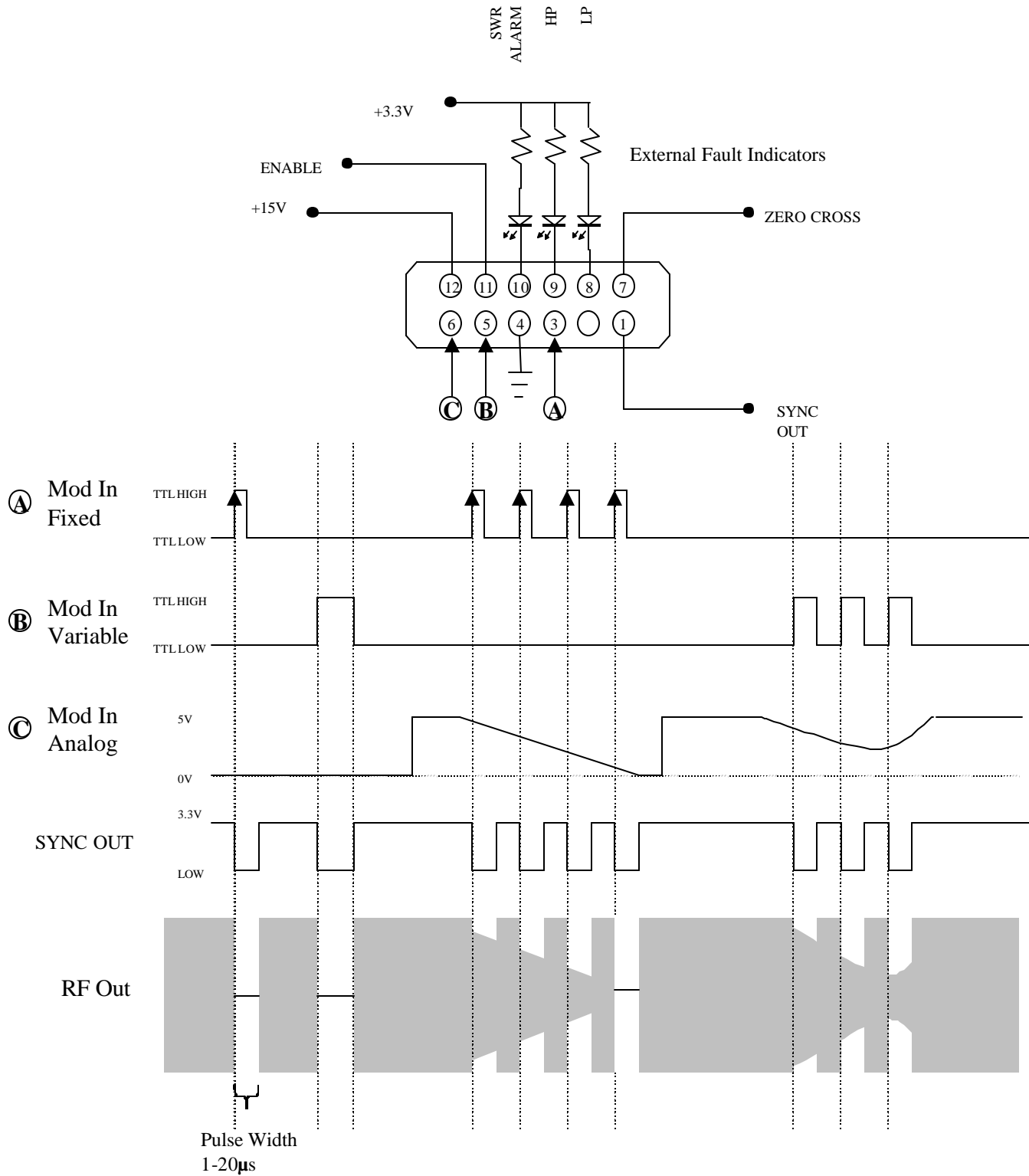


FIGURE 5

ANALOG CONTROL OPERATING MODE CONTROL DIAGRAM

390XX-YYDMA05-SC Control Diagram

