



Models VEQ-1-70 and
VEQ-1-140 (single channel)
Models VEQ-2-70 and
VEQ-2-140 (dual channel)

70 AND 140 MHz VARIABLE IF DELAY AND AMPLITUDE SLOPE EQUALIZERS



This series of variable group delay and amplitude slope equalizers are designed to compensate for the nonlinear delay distortion and amplitude slope introduced by the various components and sub-systems of the satellite earth station.

FEATURES

- Variable group delay (magnitude and center frequency)
- Variable amplitude slope
- Single or dual channels
- Unity gain
- Eight group delay selections standard per channel (up to twelve selections available)
- Alarm outputs

GENERAL SPECIFICATIONS

Model Number	Number Of Channels	Frequency Of Operation (MHz)
VEQ-1-70	1	70 ±18
VEQ-2-70	2	70 ±18
VEQ-1-140	1	140 ±36
VEQ-2-140	2	140 ±36

Frequency	Refer to table
Number of channels	Refer to table
Number of group delay sections.....	Eight (four group delay modules)
Gain.....	0 dB nominal, at center frequency
Group delay adjustment range (70 ±18 MHz)	
Parabolic	0.04 to 0.15 ns/MHz ² (per section)
Linear	0 to ±1.5 ns/MHz (per section)
Group delay adjustment range (140 ±36 MHz)	
Parabolic	0.006 to 0.019 ns/MHz ² (per section)
Linear	0 to ±0.37 ns/MHz (per section)
Amplitude slope adjustment range	±3 dB
Input return loss.....	23 dB minimum
Output return loss.....	20 dB minimum
Input/output impedance.....	75 ohms
Amplitude flatness	±0.1 dB maximum
Power output (1 dB compression).....	+8 dBm minimum
Third order output intercept point	+18 dBm
IF output level fault adjustment range	0 to -15 dBm (there is an internal switch to disable level alarm if required)

OPTIONS

1. Optional configurations.
 - 1-1. One group delay module (two sections).
 - 1-2. Two group delay modules (four sections).
 - 1-3. Three group delay modules (six sections).
 - 1-4. Four group delay modules (eight sections) standard.
 - 1-5. Five group delay modules (ten sections).
 - 1-6. Six group delay modules (twelve sections).

2. Fine adjustment equalizer module, 70 ±18 MHz.
 - Group delay (Parabolic) : 0.012 to 0.043 ns/MHz²
 - (Linear) : 0 to ±0.42 ns/MHz

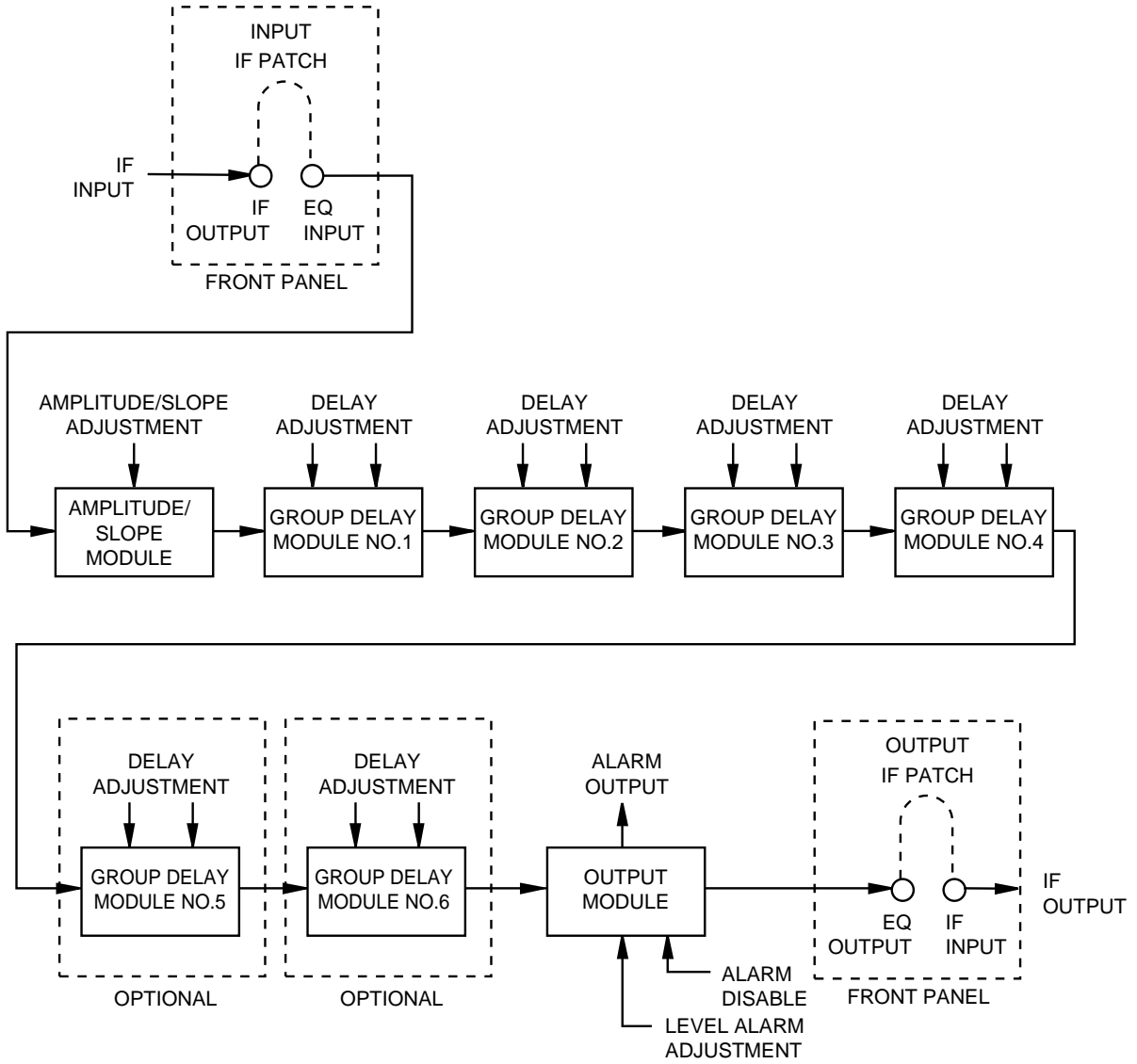
11. Higher gain by addition of input amplification.
 - A. 10 dB gain minimum.
 - B. 20 dB gain minimum.

15. 50 ohm IF impedance.

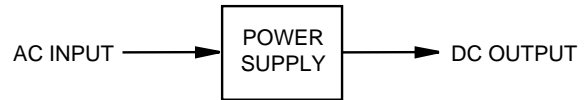
Notes: Missing option numbers are not applicable to this product.

For literature describing the adjustment and performance of the variable IF delay and amplitude slope equalizers, refer to MITEQ's Technical Note 25T014.

FUNCTIONAL BLOCK DIAGRAM



NOTE:
EACH GROUP DELAY MODULE
CONSISTS OF TWO INDEPENDENTLY
ADJUSTABLE GROUP DELAY SECTIONS.



70 AND 140 MHz VARIABLE IF DELAY AND AMPLITUDE SLOPE EQUALIZERS

PRIMARY POWER REQUIREMENTS

Voltage 100, 120, 220/240 VAC +10%, -13%
(rear panel selectable), 250 VAC maximum
Frequency 47-63 Hz
Power consumption..... 4 W typical/channel

SUMMARY ALARM

Contact closure/open for DC voltage and/or IF level fault

PHYSICAL

Weight 15 pounds nominal
Overall dimensions..... 19" x 3.5" panel x 22" maximum
(chassis depth 20" excluding protrusions)
IF connectors..... BNC female
Summary alarm connector DE-9P
DC voltage test point Jack receptacle
IF level test point Jack receptacle
IF level alarm (front panel) Red LED

ENVIRONMENTAL

Operating
Ambient temperature 0 to 50°C
Relative humidity Up to 95% at 30°C
Atmospheric pressure Up to 10,000 feet
Nonoperating
Temperature -50 to +70°C
Relative humidity Up to 95% at 40°C
Atmospheric pressure Up to 40,000 feet
Shock and vibration..... Normal handling by commercial carriers

