

22 June 1965

Cog Service: USN FSN: 2F6625-964-9680

OSCILLOSCOPE SUBASSEMBLY VERTICAL CHANNEL HIGH GAIN
DIFFERENTIAL PREAMPLIFIER AM-3567/USM
Functional Class:

USA

USN

USAF

TYPE CLASS:

Used by

MANUFACTURER'S NAME/CODE NUMBER: Hickok Electrical Instrument Company, (28569).



OSCILLOSCOPE SUBASSEMBLY VERTICAL CHANNEL HIGH GAIN
DIFFERENTIAL PREAMPLIFIER AM-3567/USM

FUNCTIONAL DESCRIPTION

Oscilloscope Subassembly Vertical Channel High Gain Differential Preamplifier AM-3567/USM is a plug-in unit designed for use in connection with general purpose AN/USM-105A, AN/USM-139, AN/USM-140A and AN/USM-141 oscilloscopes. It is designed to operate with two separate signals connected to two separate inputs. The signal then presented to the main vertical amplifier of the oscilloscope is the difference between the two input signals. The preamplifier may also be used in the conventional manner to present either signal input separately. This unit is designed for sensitivities as high as one millivolt per centimeter and for differential input with high rejection ratio for in-phase signals.

No field changes in effect at time of preparation (4 June 1965).

RELATION TO OTHER EQUIPMENT: None.

4.7 AM-3567/USM: 1

137

OSCILLOSCOPE SUBASSEMBLY VERTICAL CHANNEL HIGH GAIN DIFFERENTIAL PREAMPLIFIER AM-3567/USM

EQUIPMENT REQUIRED BUT NOT SUPPLIED: None.

TECHNICAL CHARACTERISTICS:

TEMPERATURE RANGE: - 28 to + 50° C.

RELATIVE HUMIDITY: 99%.

INPUT DATA

QUANTITY: Dual input.

IMPEDANCE: 1 meg ± 10% shunted by not more than 47 uuf both channels.

ISOLATION BETWEEN INPUTS: 80 db.

SENSITIVITY

CALIBRATION: 1 mv/cm to 50 v/cm.

CONTINUOUSLY VARIABLE: 1 mv/cm to 125 v/cm.

CALIBRATED ACCURACY: Within ± 3%.

MAX ALLOWABLE COMBINED DC AND PEAK AC INPUT: 600 v.

BANDWIDTH

DC TO HIGHER THAN 300 KC: At max sensitivity.

DC TO HIGHER THAN 2 MC: 50 mv or lesser sensitivity.

FREQUENCY RESPONSE (AC COUPLING)

DOWN NOT MORE THAN 3 DB FROM 50 KC VALUE THROUGH THE FOLLOWING RANGES:

- (I) 2 CPS TO ABOVE 300 KC: At 1 mv sensitivity.
- (II) 2 CPS TO ABOVE 400 KC: At 2 mv sensitivity.
- (III) 2 CPS TO ABOVE 450 KC: At 5 mv sensitivity.
- (IV) 2 CPS TO ABOVE 850 KC: At 10 mv sensitivity.
- (V) 2 CPS TO ABOVE 1.3 MC: At 20 mv sensitivity.
- (VI) 2 CPS TO ABOVE 2.0 MC: At 50 mv sensitivity.

RISE TIME

1.7 USEC OR LESS: At sensitivities from 1 mv/cm to 20 mv/cm.

LESS THAN 0.18 USEC: At sensitivities from 50 mv/cm to 20 mv/cm.

SQUARE WAVE RESPONSE: Faithful reproduction of square wave w/1.5 usec rise time, with repetition rate from 1 cyc to 50 kc w/50 mv or lesser sensitivity settings.

DIFFERENTIAL INPUT (AC OR DC)

REJECTION RATIO FOR IN-PHASE SIGNAL: Up to 20 kc, 10,000 to 1.

MAX INPUT SIGNAL PEAK-TO-PEAK

- (1) SENSITIVITY 1 MV/CM: 3 v.
- 10 MV/CM: 30 v.
- 100 MV/CM: 300 v.
- 1000 MV/CM: Limited by rating of input capacitance to 600 v.

MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (INCHES)	WEIGHT (LBS)
1	Oscilloscope Subassembly Vertical Channel High Gain Differential Preamplifier AM-3567/USM includes:	2F6625-964-9680	6 x 7 x 12-3/4	5.5
2	Technical Manuals NAVSHIPS 95680			

4.7 AM-3567/USM: 2

837

OSCILLOSCOPE SUBASSEMBLY VERTICAL CHANNEL HIGH GAIN DIFFERENTIAL PREAMPLIFIER AM-3567/USM

REFERENCE DATA AND LITERATURE:

NAVSHIPS 95680: Technical Manual for High Gain Differential Preampfier Vertical Channel Oscilloscope Subassembly AM-3567/USM.

TUBE, CRYSTAL AND/OR SEMI-CONDUCTOR DATA:

TUBES: (4) 7898 (2) 5879 (3) 12AV7

CRYSTALS: Not required.

SEMI-CONDUCTORS: (1) 2N652N (1) 1N754A (1) 1N538

SHIPPING DATA

PKGS VOLUME (CU FT) WEIGHT (LBS)

PROCUREMENT DATA

PROCURING SERVICE: USN
SPEC &/OR DWG:

DESIGN COG: USN, BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX. UNIT COST
Hickok Electrical Instru- ment Company	Cleveland, Ohio	N600(24)60572 N600(24)62074	

139

24 June 1965

Cog Service: USN FSN: 2F6625-987-3442

OSCILLOSCOPE SUBASSEMBLY VERTICAL CHANNEL WIDE
BAND HIGH GAIN PREAMPLIFIER AM-3568/USM
Functional Class:

USA

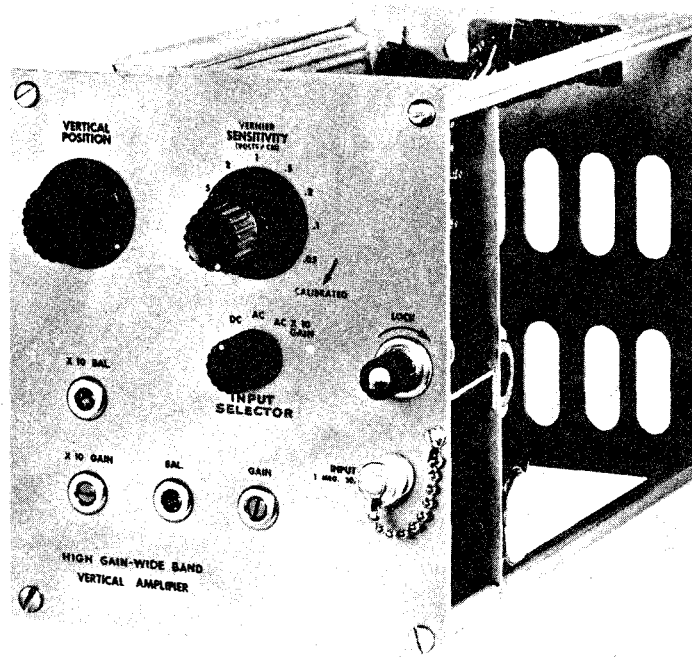
USN

USAF

TYPE CLASS:

Used by

MANUFACTURER'S NAME/CODE NUMBER: The Hickok Electrical Instrument Company, (28569).



OSCILLOSCOPE SUBASSEMBLY VERTICAL CHANNEL WIDE BAND HIGH GAIN
PREAMPLIFIER AM-3568/USM

FUNCTIONAL DESCRIPTION:

Oscilloscope Subassembly Vertical Channel Wide Band High Gain Preamplifier AM-3568/USM is a plug-in unit designed for use with the AN/USM-105A and the AN/USM-140A oscilloscopes. It is used for viewing low level, high frequency waveforms on the oscilloscope.

No field changes in effect at time of preparation (4 June 1965).

RELATION TO OTHER EQUIPMENT: None.

EQUIPMENT REQUIRED BUT NOT SUPPLIED: None.

4.7 AM-3568/USM: 1

OSCILLOSCOPE SUBASSEMBLY VERTICAL CHANNEL WIDE BAND HIGH GAIN PREAMPLIFIER AM-3568/USM

TECHNICAL CHARACTERISTICS:

TEMPERATURE RANGE: - 28 to + 50° C.

RELATIVE HUMIDITY: 99%.

SENSITIVITY

AC COUPLING: 0.005 v/cm to 50 v/cm.

DC COUPLING: 0.05 to 50 v/cm.

COMBINED AC AND DC VOLTAGE: Up to 600 v - will not damage the equipment.

INPUT IMPEDANCE: 1 meg ± 10% shunted by 20 picofarads on all sensitivity ranges.

ATTENUATORS: Nine calibrated ranges in 1-2-5-10 sequence from 0.05 v/cm to 20 v/cm (0.005 to 2 v/cm with ac - dc switch on ac X10 position) and a continuous uncalibrated vernier adjustment between ranges and to at least 40 v/cm.

VERTICAL POSITIONING: A control is provided for the vertical positioning of any signal within the working range of the equipment at any point within the workable area of the Cathode Ray Tube.

VOLTAGE ACCURACY AND LINEARITY: With the attenuator controls set for max sensitivity with either ac or dc coupling, the accuracy of all other calibrated ranges for any trace deflection within the working area of the CRT face is 3% or better.

MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (INCHES)	WEIGHT (LBS)
1	Oscilloscope Subassembly Vertical Channel Wide Band High Gain Preamplifier AM-3568/USM	2F6625-987-3442	6 x 7 x 11-1/4	4.25

REFERENCE DATA AND LITERATURE:

NAVSHIPS 94689(A): Technical Manual Including Operation and Service Instructions for High Gain-Wide Band Preamplifier AM-3568/USM.

TUBE, CRYSTAL AND/OR SEMI-CONDUCTOR DATA:

TUBES: (3) 6922 (2) 12AT7WA

CRYSTALS: Not required.

SEMI-CONDUCTORS: Not required.

SHIPPING DATA

PKGS	VOLUME (CU FT)	WEIGHT (LBS)
------	----------------	--------------

4.7 AM-3568/USM: 2

141

OSCILLOSCOPE SUBASSEMBLY VERTICAL CHANNEL WIDE BAND HIGH GAIN PREAMPLIFIER AM-3568/USM

PROCUREMENT DATA

PROCURING SERVICE: USN
SPEC &/OR DWG:

DESIGN COG: USN, BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX. UNIT COST
The Hickok Electrical Instrument Company	Cleveland, Ohio	N0bsr-93084 N0bsr-89473 N600-24-60572 N600-24-62074	

142

26 October 1964

Cog Service: USN FSN:

TEST SET, AMPLIFIER TS-1868/ASM-109

Functional Class:

USA

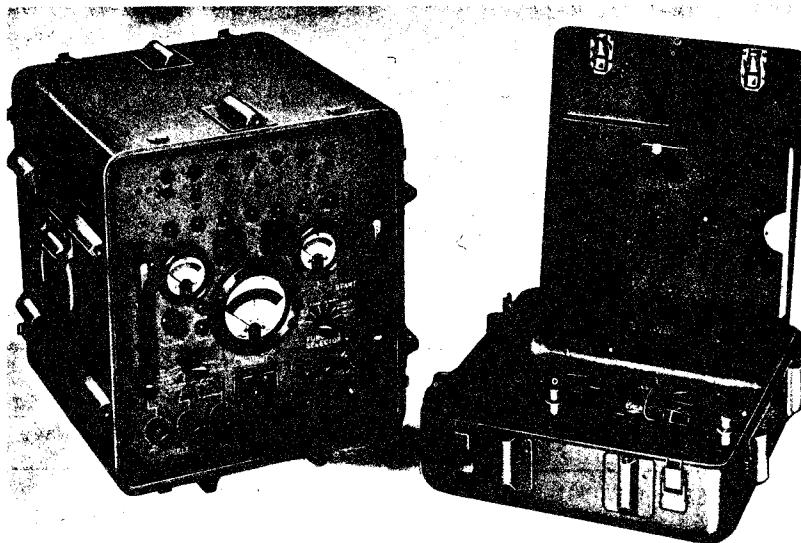
USN

USAF

TYPE CLASS:

Used by

MANUFACTURER'S NAME/CODE NUMBER: Huyck Systems Co., (92220).



TEST SET, AMPLIFIER TS-1868/ASM-109

FUNCTIONAL DESCRIPTION:

Test Set, Amplifier TS-1868/ASM-109 is to provide for accurate bench testing of the six types of plug-in amplifiers and the one type of multivibrator used in the Computer-Display Set, Navigational AN/ASN-30.

No field changes in effect at time of preparation (13 October 1964).

RELATION TO OTHER EQUIPMENT:

EQUIPMENT REQUIRED BUT NOT SUPPLIED:

TS-1868/ASM-109 TEST SET, AMPLIFIER

TECHNICAL CHARACTERISTICS:

INPUT POWER REQUIREMENTS: 115 ± 1.0 v ac, 60 to 400 cps, single ph.

POWER SUPPLY OUTPUTS: - 6 v dc; - 27 v dc; + 28 v dc.

TEMPERATURE RANGE

STORAGE: - 80 to + 185° F (- 62 to + 85° C).

OPERATING: + 32 to + 131° F (0 to + 55° C).

MINIMUM SERVICE LIFE: 2000 hrs.

MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (INCHES)	WEIGHT (LBS)
1	Test Set Amplifier		16-1/2 x 18 x 21	85
	TS-1868/ASM-109 includes:			
1	Cable Assy Power MS2549			
1	Decal Schematic 526-2-148			
1	Instruction Book NAVWEPS			
	16-35TS1868-1			

REFERENCE DATA AND LITERATURE:

NAVWEPS 16-35TS1868-1: Handbook Operation Service and Overhaul Instructions with Illustrated Parts Breakdown for Test Set Amplifier TS-1868/ASM-109.

TUBE, CRYSTAL AND/OR SEMI-CONDUCTOR DATA:

TUBES: Not required.

CRYSTALS: Not required.

SEMI-CONDUCTORS: (4) 1N1124A (1) 1N754 (12) 1N645 (3) 1N270 (1) 1N753 (3) 2N697
(1) 1N3016B (15) 2N335

SHIPPING DATA

PKGS	VOLUME (CU FT)	WEIGHT (LBS)
------	----------------	--------------

PROCUREMENT DATA

PROCURING SERVICE: USN

DESIGN COG: USN, BuWeps

SPEC &/OR DWG:

4.7 TS-1868/ASM-109: 2

144

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX. UNIT COST
Huyck Systems Co.	Huntington Station, N. Y.	NOW(A)61-1055-r	

145

