١٨	جهاز قياس تيار متغير AC		٢	يعمل		Analogue ammeter	0 : 30 A		
١٩	جهاز قياس تيار مستمر DC		٢	يعمل			0 : 5 : 10 A		

٢٠	جهاز قياس تيار مستمر DC		١	يعمل			0 : 30 A		
٢١	جهاز قياس معامل القدرة الزاوية		١	يعمل					

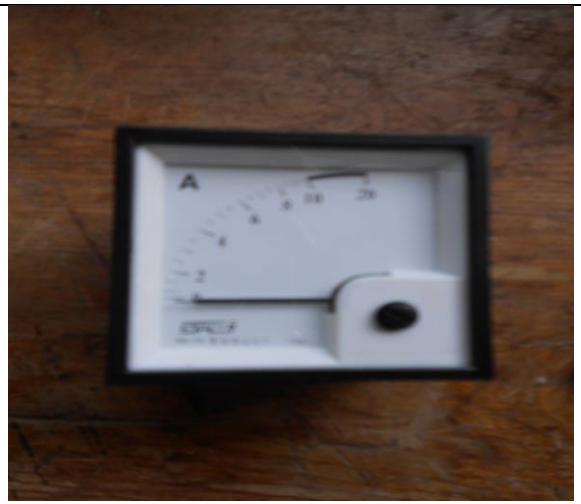
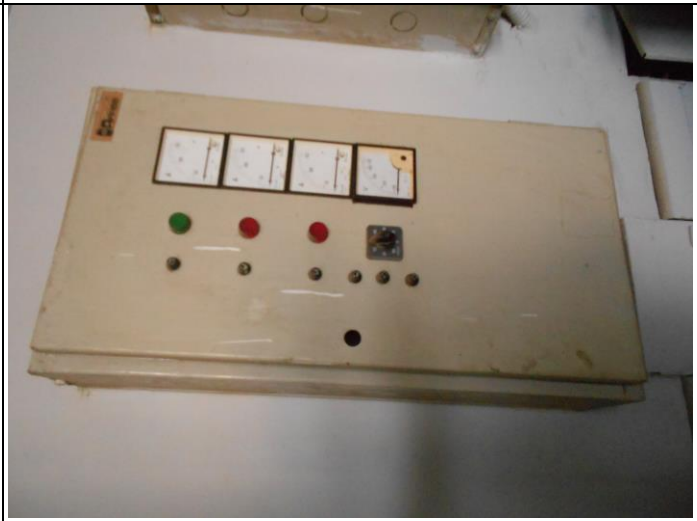
٢٢	جهاز قياس جهد متغير AC		١	يعمل		Analogue voltammeter	0 : 150 : 300 V		
٢٣	جهاز قياس جهد مستمر DC		٢	يعمل			0 : 150 : 300 V		

٢٤	مجموعة مقاومات أحمال		٤	يعمل		Dane resistive loading bank	24 : 220 V		
٢٥	مجموعة ملفات أحمال		٢	يعمل		Dane loading bank	24 : 220 V		

٢٦	مجموعة مكثفات أحمال		١	يعمل		Dane capacitive loading bank	24 : 220 V		
٢٧	سيلسكوب راسم ذبذبات		٣	يعمل		oscilloscope	10 MHZ		

٢٨	جهاز قياس رقمى أفوميتر		١	يعمل					
٢٩	مولد إشارات دالات		٣	يعمل		Function generator			

٣٠	**عداد أميتر ٥/١٠٠**		٢	يعمل					
٣١	**عداد فولت ٧ * ٧ سم**		١	يعمل					

٣٢	عداد أميتر ٧*٧ سم		٣	يعمل						
٣٣	لوحة خط (مداد قوى)		١	يعمل						

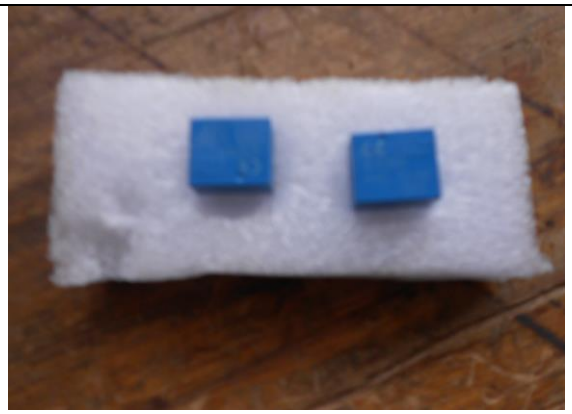
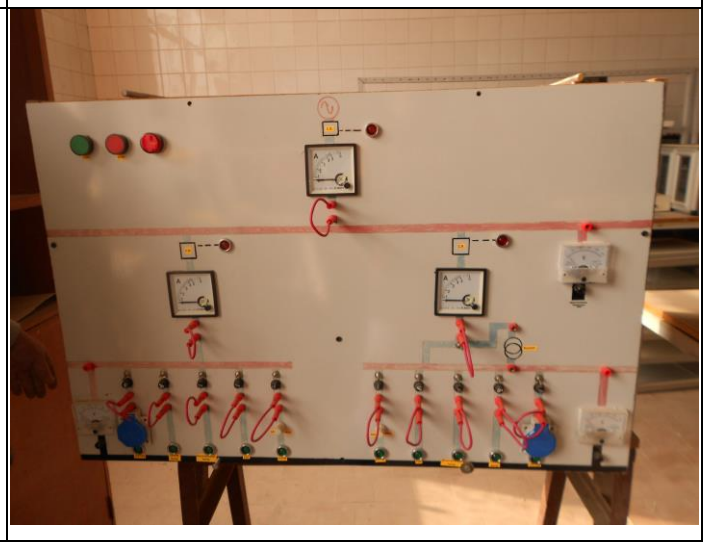
٣٤	مولد نبضات		١	يعمل		Pulse generator			
٣٥	R.C oscillator		٣	يعمل		Function generator			

٣٦	مقص منحنى دائرى		١	يعمل						
٣٧	بنسة ببوز عريض		١	يعمل						

٣٨	بنسة ببوز رفيع		١	يعمل						
٣٩	مفك ١٥٠ مم عادة		١	يعمل						

٤٠	**مفك غليظ عادة**		١	يعمل					
٤١	**مكواة لحام كبير ٣٠٠ وات**		٢	يعمل					
٤٢	**شريط ٣ متر**		١	يعمل					

٤٣	بروب سيلسكوب		١٢	٤ يعمل والباقي يتم تكهينه	استحالة اصلاحه				٨ من البروبات لا تصلح للاستخدام
٤٤	كاوية يابانى ١٠٠ وات		٤	يعمل					
٤٥	كاوية لحام مسدس ١٠٠ وات		٦	يعمل					
٤٦	ثلاجة ٨ قدم		١	يعمل					

٤٧	كمبيوتك (computek)		٢	يعمل			LEM 410300 HXS 10-NP/SP3	
٤٨	مشروع محول ازاحة الوضع		١	يعمل				

٤٩	Fluke 125/5		١	يعمل		Industrial scopemeter	40MHZ		
٥٠	موحد تحكم احادى الاوجه		١						
٥١	جهاز حاسب		٢	يعمل					

١٠- الأجهزة الموجودة بالمعمل ولكن تصلح لمعمل اخر :

م	أسم الجهاز عربى / إنجليزى	صورة الجهاز	العدد	حالة الجهاز (يعمل/لا يعمل/مستهلك)	العطل (بسيط – كبير- إستحالة إصلاحه)	*الأسم العلمى للجهاز (Brand)*	*المواصفات العامة*	*الشركة الموردة*	ملاحظات عن الجهاز
١	**عداد طاقة وجه واحد**		٨	يعمل					يصلح لمعمل الجهد العالى

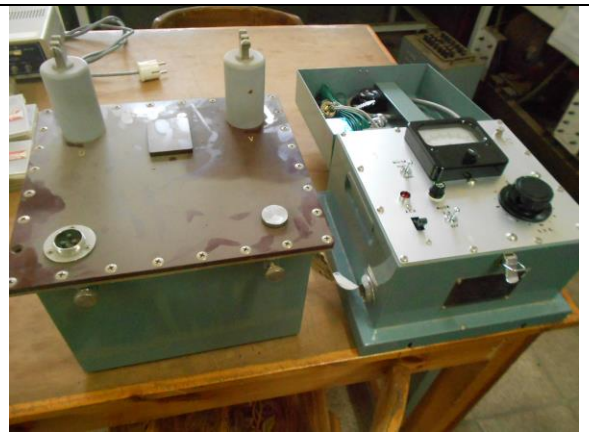
٢	**عداد طاقة ثلاثى الاوجه**			٢	بعمل				يصلح لمعمل الجهد العالى
٣	**لاقط مراحل CDG**			٤	بعمل		Relay module CDG		يصلح لمعمل الجهد العالى

٤	**لاقط مراحل جديد CMU**		٤	يعمل					يصلح لمعمل الجهد العالى
٥	**عادا قياس قدرة كلية ثلاثى الاوجه**		٤	بعمل				3*5 A – 3*5 V – 50HZ	يصلح لمعمل الجهد العالى

٦	**محول تيار ٢٤٧**		٦	يعمل		Precision current transformer	0.66 KV - 5A		يصلح لمعمل الجهد العالى
٧	**محول تيار ٦٠٠**		٣	يعمل			5 : 30 A - 250 V accuracy 0.5		يصلح لمعمل الجهد العالى

٨	**جهاز اختبار العزل**		١	يعمل		Insulation tester constant voltage	500 V - 100 MΩ		يصلح لمعمل الجهد العالى
٩	**وحدة تحكم رقمى ١٦ مدخل و١٦ مخرج توشيبا**		١	يعمل					يصلح لمعمل التحكم الالى

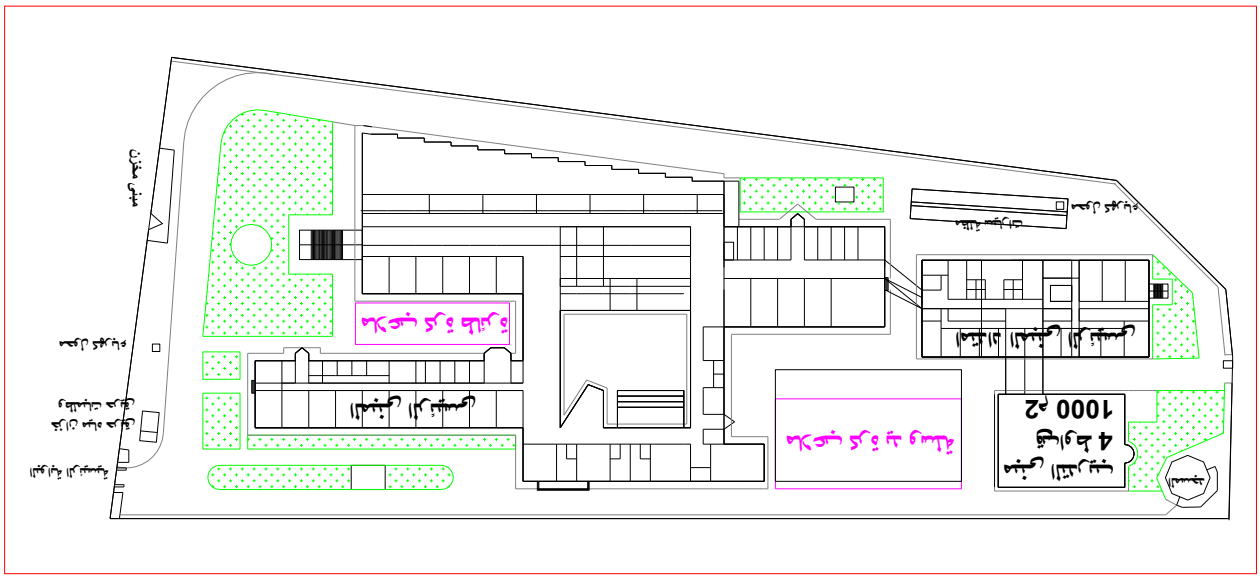
١٠	**بادئ حركة كونتاكتور**		٢	يعمل					
١١	**وحدة تغذية (FS-75)**		٢٠	يعمل	Foot control unit				

١٢	**جهاز اختبار الزيت**		٢	يعمل		Portable oil tester	0.6 KVA - 60 KV - 0.5 H	يصلح لمعمل الجهد العالى

١١- صور توضيحيه للمعمل :

نموذج تقييم المعامل

أسم المعمل:معمل اتصالات الفني المختص: هبه حنا مكان المعمل بالكلية:



مساحة المعمل: المساحة الكلية ()=المتر

أنظمة الأمن والسلامة: (متوفرة–غير كافية– معطلة)

طبيعة عمل المعمل: (شامل - أكاديمي فقط– بحثي فقط)

الإضاءة: عدد اللمبات (جيدة– متوسطة – رديئة)

التهوية: (جيدة –متوسطة– رديئة)

تجهيزات المعمل:

أ- توافر وسائل الإيضاح*: (مكتملة–جزئية–منعدمة)

ب- توافر مكان للطلاب: (متوفرة– غير متوفرة –يحتاج لدعم)

ج- خطة التجارب الطلابية بالمعمل: (متوافقة– غير متوافقة – لا توجد)

د- توافر الأدوات والخاماتللطلاب داخل المعمل: (متوفرة–غير متوفرة– منعدمة)

عدد الفنيين بالمعمل: (كافي– غير كافي)

التخصص الفني لأمين المعمل: (مؤهل– قريب – بعيد)

*أدوات الإيضاح تشمل (أجهزة تعليمية – برامج تعليمية)

ملاحظات:

١- أنظمة الامن و السلامة :

Rules of Use

General

All laws and rules of the University of Benha apply to the use of this lab. In particular, smoking is not permitted in the lab (as indeed is the case in the entire Engineering building), and the presence of firearms is prohibited. It is the responsibility of any user of University facilities to know and abide by all University regulations.

Permission to Use the Lab

Permission can be obtained **only** from one of the responsible faculty members listed above. They will arrange for a certification test for you to ensure that you are qualified to use the relevant equipment.

Responsible Use

It will be your and your advisor's/instructor's responsibility to ensure that you are familiar with the responsible and proper use of all instruments that you will make use of **and** that you have been appropriately trained in their use. Graduate student users, technicians and staff are asked to use the laboratory responsibly **and** to set a good example for undergraduate students. All users are expected to familiarize themselves with the laboratory rules and abide by them.

Available Equipment

A summary of the major equipment in the laboratory is available. In addition, an assortment of multimeters, DC power supplies, function generators, antennas, waveguide and coaxial hardware is also available. Disposable supplies such as solderable connectors, substrates, etc., are generally expected to be provided by the users of the lab.

Damage and Accident

Damage to any instrument is very expensive and accompanied by long repair periods. Students, faculty and staff depend on the instruments' availability and reliable performance for research and teaching alike. Damage to the instruments will have serious consequences for both students and instructors.

It is very important that any damage or accident (injurious or otherwise) in the laboratory be reported immediately. If problems can be addressed at an early stage, it will be easier to keep the laboratory in good and safe working condition.

Naturally, anybody can have an accident. Fairness, circumstances and a rather generous willingness to forgive are negotiable. However, malicious damage or failure to report an incident will reduce or eliminate any flexibility we might choose to use in dealing with you. Permanent exclusion from the lab could result from such behavior.

Before Leaving the Lab

Make sure that all equipment you used has been turned off and returned to the place from which you obtained it. All cables and probes must be returned to their appropriate place on the cable racks or in the storage cabinets. Please remove all temporary markings and/or tape you from all items before returning them, and replace them in an orderly manner in the place they belong.

NOTE: Certain instruments (such as the network analyzers) may be left running, but their display intensity should be turned down to protect the screen from burn-in. Similarly, the microwave oscillators may be placed into "stand-by" mode or left on if they will be used again by you within 24 hours. These instruments have long (several hours) warm-up periods. If in doubt, please switch off.

General Conduct

People from different walks of life have to work together in this laboratory. To ensure that everybody can use the laboratory to the fullest extent, the following general rules should be followed:

- Cables and other equipment not currently in use must be returned to their proper places and not thrown or placed aside "somewhere".
- Broken cables should be reported to the appropriate responsible person (instructor or TA).
- Do not leave the door open outside of class times or TA office hours.
- Do not admit anyone by opening the door for them; all persons authorized to get into the lab will have their own key or card access.
- No unauthorized experiments or other activities are to be conducted in the lab

Food in the Laboratory—NONE!

Personal Safety

Apart from keeping the equipment running, we would also like to see our users stay alive and healthy. You are therefore asked:

- Not to test any wires with your tongue or touch any live-wires
- To regard all wires as live-wires
- Not to operate faulty equipment, as it may endanger life. Please report faulty equipment.

The use of radiation hazard meters is recommended if you are using power levels in excess of 30 dBm, in order to limit radiation exposure to personnel and keep them within safe limits.

The probability of the presence of EM fields at significant levels is rather higher in this lab than in most others. **Persons with pacemakers or similar devices should not enter the lab.**

Capacitors are to be safely discharged before their return and a short should be placed across their terminals to prevent electrostriction from occurring.

Ground wires may not be removed from any cables or sockets. Although their removal might prevent ground-loops (which are undesirable in some cases), they also float the respective instrument at an unspecified (possibly high) voltage. If ground loops are a concern, obtain suitable isolation transformers as necessary.

General Safety

For general safety the following also have to be adhered to:

- No chemicals, biological materials and cultures, radioactive materials, isotopes, explosives, flammables, or guns may be brought into the laboratory. If such is required for official experiments, written permission, approved by the responsible faculty **and** by the chair of the department is required. Training in the handling of such materials, the safety of others, and provision for proper storage and disposal must be ensured beforehand. This will have to be adequately demonstrated to the satisfaction of the responsible faculty beforehand as well.
- Cryogenic liquids have to be in proper containers for transport and storage, and must not be left unattended. People wishing to use such materials must be trained in their handling ahead of time. Prior written authorization by the responsible faculty is required for their use in the lab. Appropriate warning signs as well as labels describing their contents are required.
- No open flames are allowed in the laboratory.
- Approved warning signs should be displayed in areas of danger.
- You should adhere to all warning signs and signals.
- You must know where fire extinguishers are and be familiar with their proper use.
- In the event of a fire, follow fire regulations.
- Safety measures are not allowed to be removed, impaired, tampered with and/or rendered ineffective.
- No unauthorized private experiments are allowed.
- **Apply good, sound reasoning in the laboratory ... and if possible when you leave the lab, too.**

٢- التهوية:

-تحتاج الى عدد ٢مكيف هواء.

٣- توافر وسائل الايضاح:

- تحتاج الى وجود سبورة جديد مع تعديل مكانها داخل المعمل ليناسب الطلاب.
- تحتاج إلى داتاشو وستائر للمعمل
- انذار للحريق

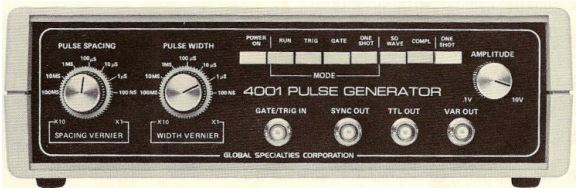
٤- خطة التجارب الطلابيه بالمعمل:

- تحتاج الى تجديد بصفة دورية بما يتناسب مع المنهج الاكاديمى.

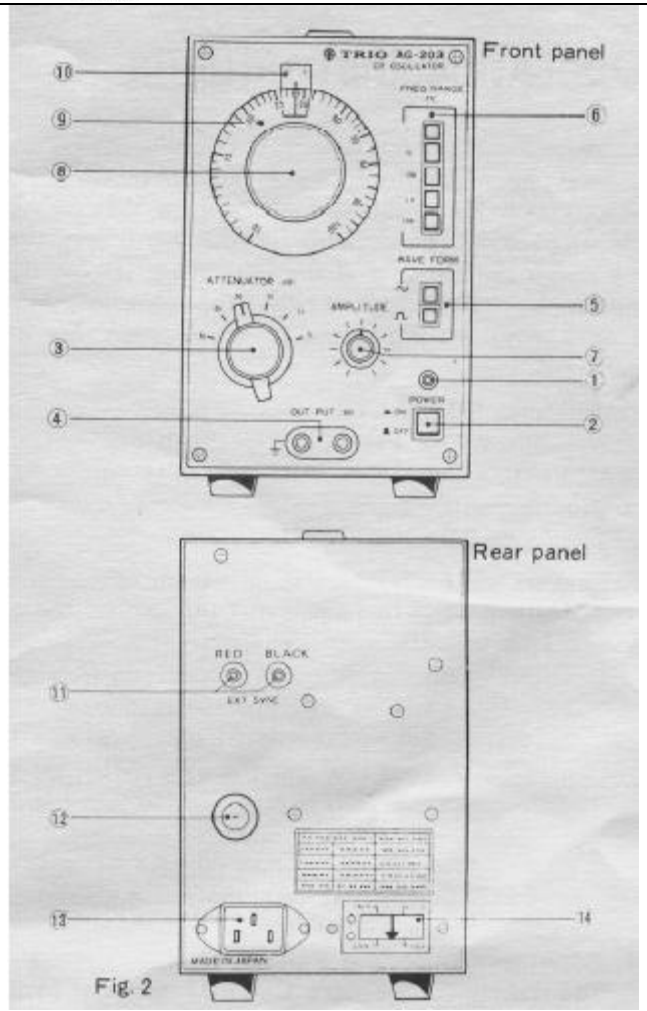
٥- توافر الادوات و الخامات للطلاب داخل المعمل:

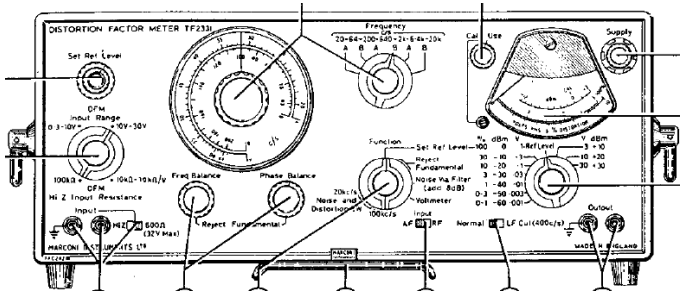
- Storage Oscilloscope
- الكتالوجات لمعظم الأجهزة موجود ويوجد منه نسخة على الحاسب الالي.
- ٥ أجهزة حاسب آلي حديثة.

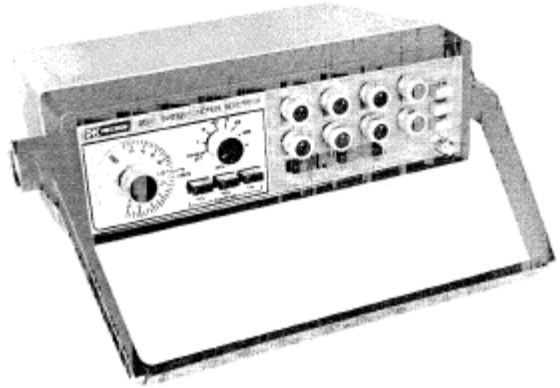
أجهزة القياس الموجودة بالمعمل:

م	أسم الجهاز عربى / إنجليزى	العدد	حالة الجهاز (يعمل/لا يعمل/مستهلك)	العطل (بسيط – كبير- إستحالة إصلاحه)	مواصفات الجهاز	حجم التجارب المستخدم فيها (بسيط – متوسط – ضخم)	ملاحظات عن الجهاز
١	اجهزة حاسب	٢	١يعمل ١ مستهلك	بسيط		متوسط	
٢	Pulse Generator	٨			**INPUT:** Trigger/Gate, DC couples, BNC connector,TTL compatible <10MHz, max. input±10Vpk **Impedance:** 400 ohms **Sensitivity:** Pulses: >40nsec wide, >2.4Vpk or sine wave >1.7Vrms. **OUTPUTS:** 3 outputs, DC coupled, BNC connector. **VAR Impedance:** Constant 50 ohms **VAR Amplitude:** 0.5-10V into open circuit, 0.25-5.0V driving 50 ohms,variable with Amplitude control, rise/fall time less than30 nsec. **TTL Drive:** Standard TTL levels, bufferedto drive up to 40 TTL loads, rise/fall timeless than 20 nsec. **SYNC:** +2.4V (TTL compatible pulse,buffered to drive min. 10 TTL loads). **SYNC Timing:** 20 nsec pulse width, leadsmain outputs by >20 nsec, rise/fall less than 20 nsec.		

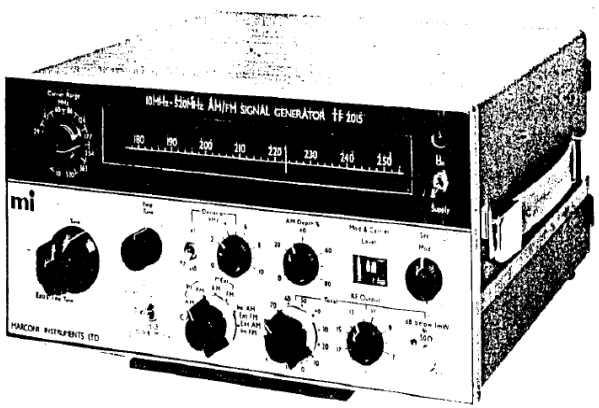
٢	AF Power Meter	٢			**Power meter covers wide range from 300 uW to 10 W and works at range of frequencies 20 Hz to 35 kHz.**		

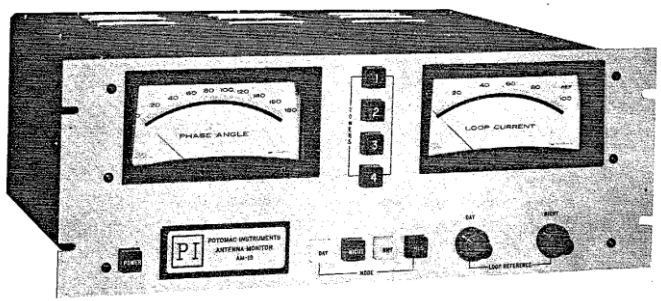
٣	Audio Signal Generator	٢			• All solid-state circuitry ensure extreme high stability, minimum warm-up time and less power consumption. • High reliability with adoption of direct coupled circuits throughout the entire stage. • Compact styling with vertical type panel for easy operation. • Frequency dial scale calibrated with single-scale graduations for frequency range 10Hz to 1MHz selectable in 5 ranges. • High output design; more than 7V rms at no load and more than 3.5V rms at 600Ω. Output level is fully adjustable with a 10dB step, 6 range attenuator and a level indicator. • Low output impedance of 600Ω. The attenuator provides accuracy of ±1dB at 600Ω load. • Sine and Square waves easily available. • Synchronizing input terminal. • Extremely high stability against variation of power source.		

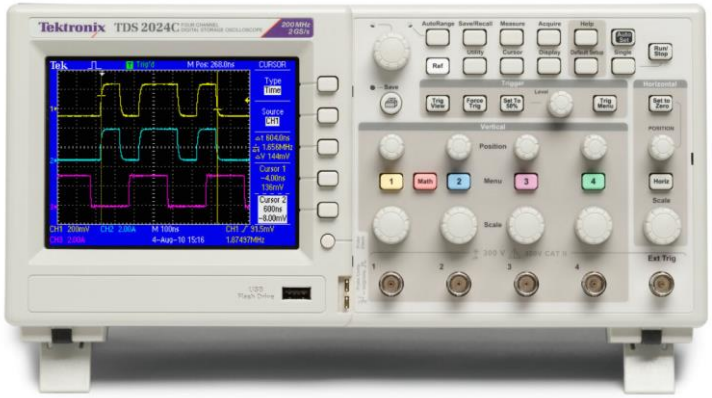
		Digital Synchronizer TF 2171 is designed for use with Signal Generator TF 2015, to which it can be fitted as shown in Fig. 1.1. Together, the instruments provide a 10 to 520 MHz signal generator system with high discrimination tuning and very good frequency stability.			٢	Digital Synchronizer	٤
		The Distortion Factor Meter Type TF 2331 measures the total distortion and noise of audio signals in the fundamental range from 20 c/s to 20 kc/s. A distortion bandwidth of either 100 kc/s or 20 kc/s can be selected and a low-frequency stop filter enables power supply frequencies to be eliminated from the result. Noise can be measured in the same two bandwidths or via a weighting filter to show the noise level in terms of its interference value in a broadcast system.			٢	Distortion Factor Meter	٥

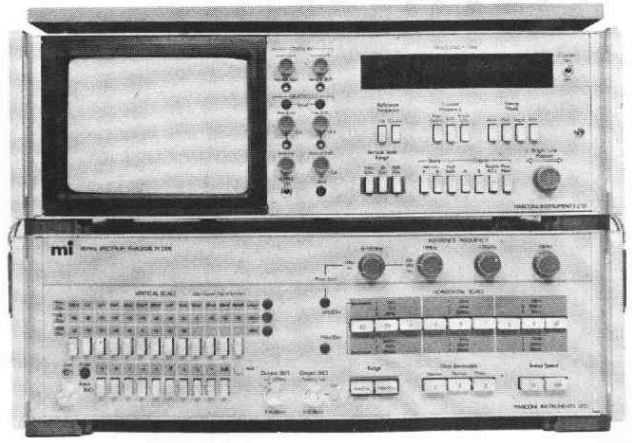
٦	Function Generator GFG-8215A (3MHz)	٤			*** Frequency Range: 0.3Hz ~ 3MHz * Waveforms: Sine, Triangle, Square, Ramp, TTL and CMOS Output * External Voltage Controlled Frequency (VCF) Function * Duty Cycle Control with Signal Inversion Capability * Variable DC Offset Control * Two-Step (-20dBx2) and Variable Attenuator * Built-In 6 Digit Counter with INT/EXT Function Up to 150MHz / High Resolution(GFG-8216A)**		
٧	Function/Sweep Generator (3020)	١			*** Frequency Range: 0.3Hz ~ 2MHz * Waveforms: Sine, Triangle, Square, Ramp, TTL and CMOS Output * External Voltage Controlled Frequency (VCF) Function * Duty Cycle Control with Signal Inversion Capability * Variable DC Offset Control * Two-Step (-20dBx2) and Variable Attenuator**		

		• 16 standard waveforms • Built-in 16-bit 250 MSa/s arbitrary waveform capability • Precise pulse waveform capabilities with adjustable edge time • LCD display provides numeric and graphical views • Easy-to-use knob and numeric keypad • Instrument state storage with user-defined names • Portable, ruggedized case with non-skid feet			٤	Agilent 33500 Series 30 MHz Function / Arbitrary Waveform Generator	٨
		• Double Output • (0~30V/0~3A) x 2, (5V/3A Max.) x 1 • Auto tracking • Auto Series and Parallel operation • Constant Voltage and Constant Current Operation • Low Ripple and Noise • Internal Select for Continuous or Dynamic Load • Overload and Reverse Polarity Protection • 3 1/2 digit 0.5" LED display • 5V, 3A Fixed output			١	Power Supply (Instek GPQ-3030D)	٩

		It covers the band of 10MHz to 520MHz at eleven switched bands			١	Marconi TF 2015 Signal Generator 10MHz-520MHz Operator_Manual	١٠
		The mobile test set TF2950 has been designed as a fully transistorized multi-purpose unit capable of being driven from its own rechargeable batteries. The main application is for Testing, adjustment and serving of mobile radio communications equipment operating in VHF and UHF Frequency bands.			١	Mobile Radio Test Set (TF2950)	١١

		The type 19 antenna monitor is designed to accurately measure the phase relationships and sampling loop currents within the directional antenna arrays of AM broadcast stations.			٢	Phase Meter	١٢
		*** 60MHz/100MHz Bandwidth With Either Color or Monochrome LCD Display** *** 125k Long Memory and 12 Division Horizontal Display** *** 25GS/s Sampling Rate for Repetitive Waveforms** *** Advanced Trigger : Pulse Width , TV Line, Event Delay and Time Delay** *** Go/NoGo and Auto Setup Sequence** *** FFT Function** *** Built-In Help Manual, Multi-Language and PC Software** *** Standard Interface: RS-232C** *** Option: GPIB, USB Interface, Printer Port, Go/NoGo Output**			٢	Digital Storage Oscilloscope GDS-806C(60MHz)/GDS-810C(100MHz)	١٣

		The 50MHz GOS-653G/652G Series are examples of classic analog oscilloscope design. The GOS-653G /652G cover a broad range of industry applications such as product design, assembly lines, repair & servicing as well as educational purposes for EE laboratories and class experiments. Coupled with various trigger functions (Auto, Norm, TV), complex waveforms can be easily triggered for use in diverse applications. The ALT Trigger function is able to observe signals from dual channels simultaneously. The Hold Off function helps stabilize sophisticated signals with repetitive frequencies or periods. Delayed sweep magnification (GOS-653G) can display a waveform and zoom in at the same time. For classic design and operation applicable to a wide range of applications, the GOS-653G/652G Series offers extra value.			٤	Oscilloscope GOS-653G (50 MHz)	١٤
		• 200 MHz, 100 MHz, 70 MHz, 50 MHz Bandwidth Modelsand 4-channel Models • Up to 2 GS/s Sample Rate on All Channels • 2.5k point Record Length on All Channels • Advanced Triggers including Pulse Width Trigger and Line-selectable Video Trigger • 16 Automated Measurements, and FFT Analysis for Simplified • Waveform Analysis • Built-in Waveform Limit Testing • Automated, Extended Data Logging Feature • Autoset and Signal Auto-ranging • Built-in Context-sensitive Help • Probe Check Wizard • Multiple-language User Interface • 5.7 in. (144 mm) Active TFT Color Display • Small Footprint and Lightweight – Only 4.9 in. (124 mm) Deep and 4.4 lb.(2 kg)			١	Digital Storage Oscilloscopes TDS2000C	١٥

		• Autoset • 5 markers with delta marker and peak functions • 3 traces • Power measurements: ACPR, OCBW, N-dB, Phase Jitter • Pass/fail test with limit line editing • Split windows with separate settings • Sequence programming (user-defined macro) • 6.4" TFT color LCD, 640 x 480 resolution • Phone output (available in the optional Demodulator) • AC/DC/battery multi-mode power operation			١	3.0GHz Spectrum AnalyzerGSP-830	١٦
		TF 2370 is a spectrum analyzer/tracking signal generator/counter covering the range 30 Hz to 110 MHz in sweep width varying from 200 Hz to 100 MHz and with resolutions varying from 50 kHz to 5 Hz. The user selects input sensitivity, sweep width, center frequency and filter resolution and wired logic program selects best r.f./i.f. gain ratio, sweep rate and filter bandwidth.			١	Spectrum Analyzer TF2370	١٧

٧. صور توضيحية للمعمل


DIGITAL SYNCHRONIZER TF 2171
MHz
x100
x10
kHz
Hz
mi
Out of Lock
Lock On
Sync Output
Supply On
MARCONI INSTRUMENTS LTD
DIGITAL SYNCHRONIZER TF 2171
MHz
x100
x10
kHz
Hz
mi
Out of Lock
Lock On
Sync Output
Supply On
MARCONI INSTRUMENTS LTD
Digital synchronizer (TF2171)
N. (2 Unit)

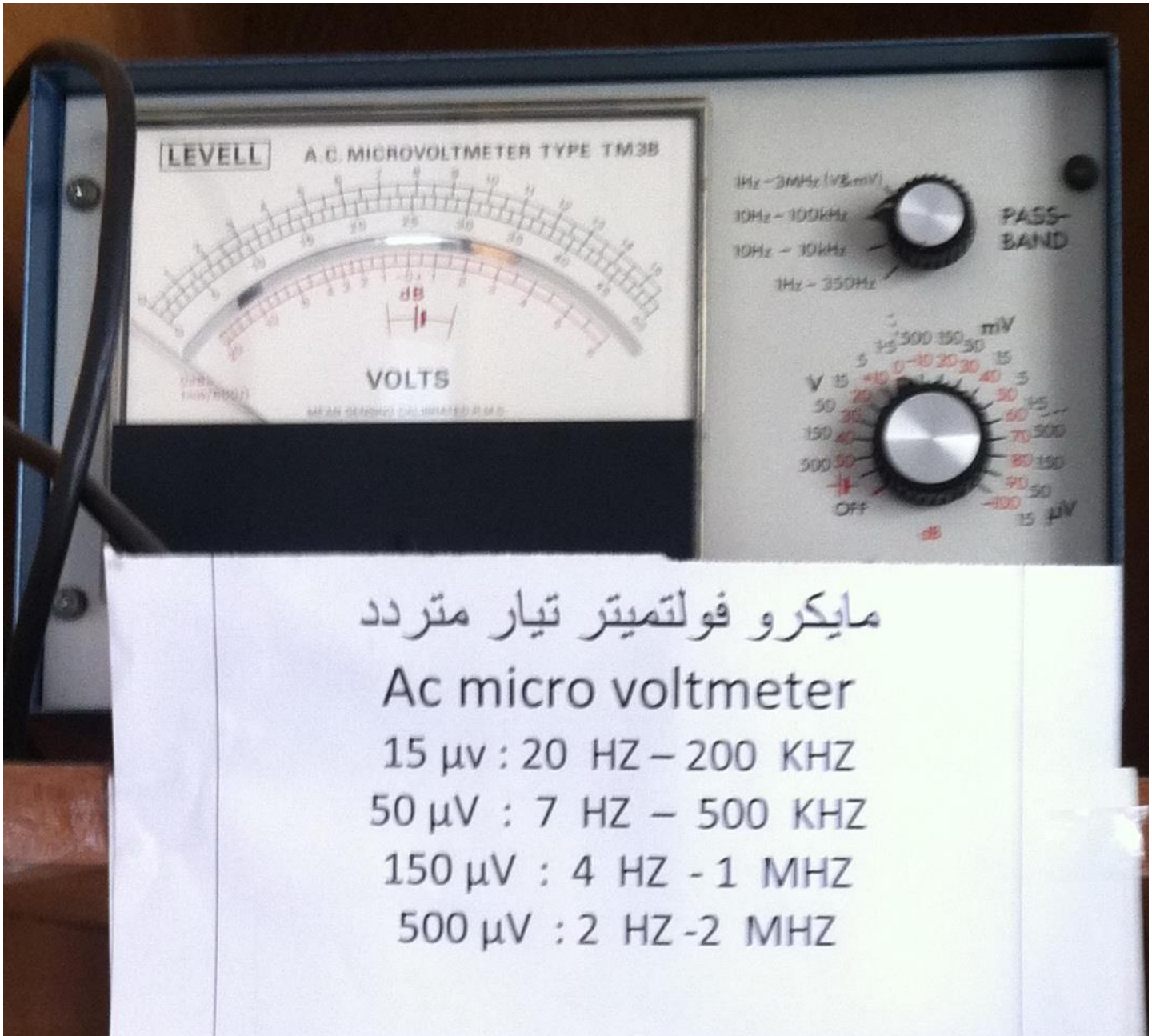

MARCONI INSTRUMENTS
MARCONI INSTRUMENTS


OSCILLOSCOPE
VERTICAL
HORIZONTAL
TRIGGER
TIME/DIV
COUPLING
SOURCE
SLOPE


A
V
TUNG YUNG
DC REGULATED POWER SUPPLY TR_355
A
V
TUNG YUNG


Automatic Modulation Meter
Automatic Modulation Meter


PULSE SPACING
PULSE WIDTH
POWER ON
RUN
TRIG
GATE
ONE SHOT
SQ WAVE
COMPL
ONE SHOT
AMPLITUDE
MODE
4001 PULSE GENERATOR
SPACING VERNIER
WIDTH VERNIER
GATE/TRIG IN
SYNC OUT
TTL OUT
VAR OUT
GLOBAL SPECIALTIES CORPORATION
Pulse Generator (4001)
N.(2 Unit)


LEVELL
A.C. MICROVOLTMETER TYPE TM3B
VOLTS
dB
PASS-BAND
1Hz – 350Hz
10Hz – 10kHz
10Hz – 100kHz
1Hz – 3MHz
mV
V
µV
Off
مايكرو فولتميتر تيار متردد
Ac micro voltmeter
15 µv : 20 HZ – 200 KHZ
50 µV : 7 HZ – 500 KHZ
150 µV : 4 HZ - 1 MHZ
500 µV : 2 HZ -2 MHZ