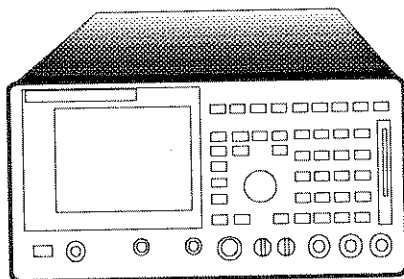


The HP 8920/21 Test Set User's Quick Reference



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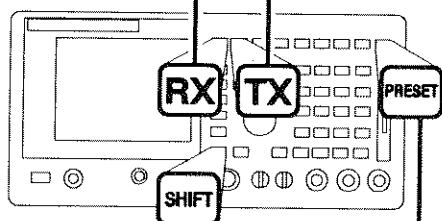
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Hewlett-Packard Company
Learning Products Department
TAF C34
Spokane, WA 99220 U.S.A.

The Instrument -At A Glance

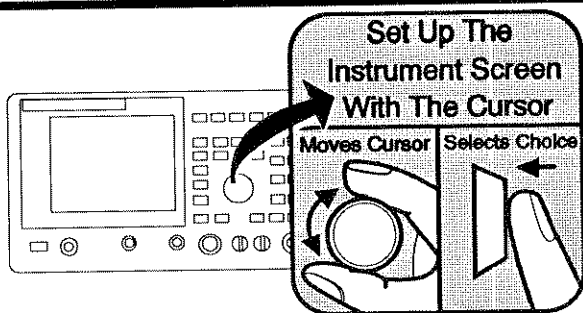
Use this key to perform a receiver test or to generate a modulated RF signal.

Use this key to perform a transmitter test or to monitor and measure an RF signal.



Use this key to activate the blue labeled functions. Press and release, then press the key below the blue label.

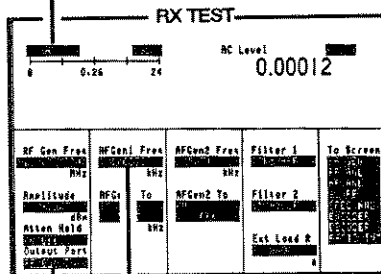
Use this key to reset all instrument settings.



Some Of The Choices Made On The Screen

One-of-many:

Pushing the knob will display a list of choices in the lower-right corner of the screen. Turning the knob moves the cursor through the list. Pushing the knob again selects the choice adjacent to the cursor.



Numeric Entry:

Pushing the knob will highlight the data. The highlighted data can be changed by turning the knob. Pushing the knob again enters the data.

Underlined:

Pushing the knob will move the underline below a choice. The underlined choice is active.

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- ☐
- ☐
- ☐

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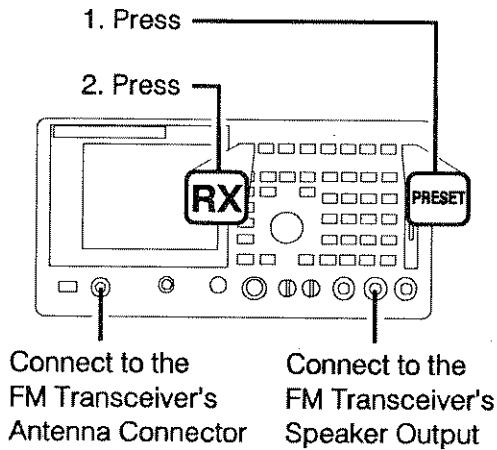
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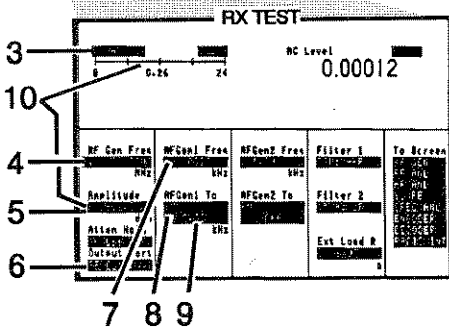
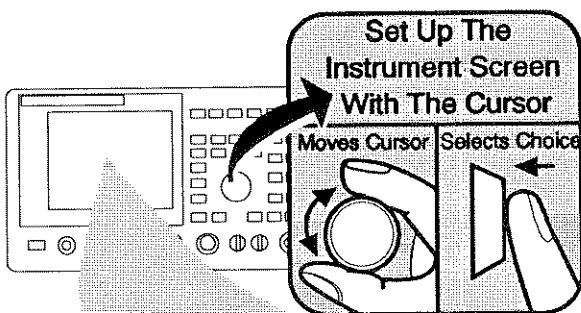
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An Example Of How To Make An FM Radio SINAD Check

Front Panel Set Up



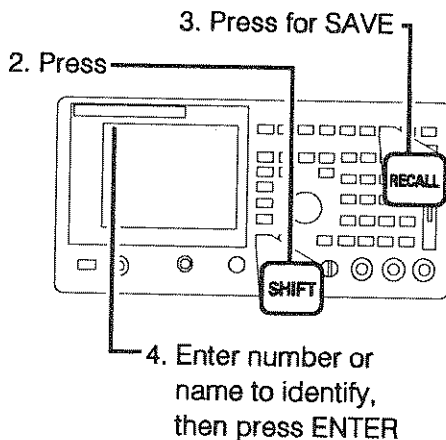
Screen Set Up



3. Verify that SINAD is displayed.
4. Enter the RF frequency.
5. Enter the RF amplitude.
6. Verify that RF Out is underlined.
7. Verify that the modulation frequency displayed is 1 kHz.
8. Verify that the modulation type displayed is FM.
9. Enter the deviation.
10. Adjust the RF amplitude for a SINAD reading of 12 dB.

To Save Instrument Settings

1. Set up the instrument as desired.

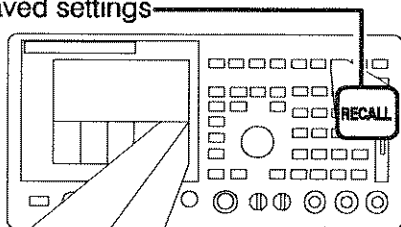


NOTE: The number of changes made to the screen determines memory consumption.

If memory capacity is exceeded, you will get an error message. Refer to the User's Guide and Reference manual.

To Recall Instrument Settings

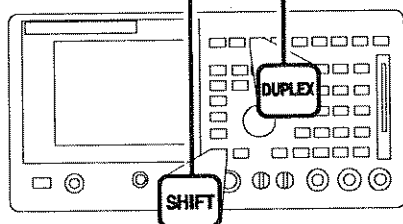
1. Press recall to list the saved settings



Recall:

2. Use the Knob to choose the saved setting from list of choices.

1. Press _____
2. Press for CONFIG

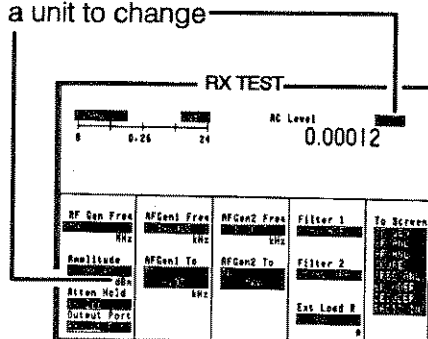


- 3. Vary the screen intensity with the knob

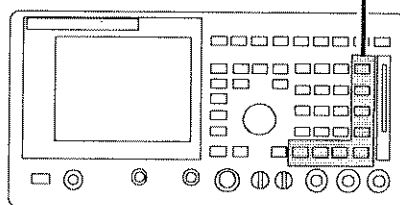
CONFIGURE				
RTN/Cnt [0] [1] [2] [3] [4] [5] [6] [7] [8] [9] [10] [11] [12] [13] [14] [15] [16] [17] [18] [19] [20] [21] [22] [23] [24] [25] [26] [27] [28] [29] [30] [31] [32] [33] [34] [35] [36] [37] [38] [39] [40] [41] [42] [43] [44] [45] [46] [47] [48] [49] [50] [51] [52] [53] [54] [55] [56] [57] [58] [59] [60] [61] [62] [63] [64] [65] [66] [67] [68] [69] [70] [71] [72] [73] [74] [75] [76] [77] [78] [79] [80] [81] [82] [83] [84] [85] [86] [87] [88] [89] [90] [91] [92] [93] [94] [95] [96] [97] [98] [99] [100] [101] [102] [103] [104] [105] [106] [107] [108] [109] [110] [111] [112] [113] [114] [115] [116] [117] [118] [119] [120] [121] [122] [123] [124] [125] [126] [127] [128] [129] [130] [131] [132] [133] [134] [135] [136] [137] [138] [139] [140] [141] [142] [143] [144] [145] [146] [147] [148] [149] [150] [151] [152] [153] [154] [155] [156] [157] [158] [159] [160] [161] [162] [163] [164] [165] [166] [167] [168] [169] [170] [171] [172] [173] [174] [175] [176] [177] [178] [179] [180] [181] [182] [183] [184] [185] [186] [187] [188] [189] [190] [191] [192] [193] [194] [195] [196] [197] [198] [199] [200] [201] [202] [203] [204] [205] [206] [207] [208] [209] [210] [211] [212] [213] [214] [215] [216] [217] [218] [219] [220] [221] [222] [223] [224] [225] [226] [227] [228] [229] [230] [231] [232] [233] [234] [235] [236] [237] [238] [239] [240] [241] [242] [243] [244] [245] [246] [247] [248] [249] [250] [251] [252] [253] [254] [255] [256] [257] [258] [259] [260] [261] [262] [263] [264] [265] [266] [267] [268] [269] [270] [271] [272] [273] [274] [275] [276] [277] [278] [279] [280] [281] [282] [283] [284] [285] [286] [287] [288] [289] [290] [291] [292] [293] [294] [295] [296] [297] [298] [299] [300] [301] [302] [303] [304] [305] [306] [307] [308] [309] [310] [311] [312] [313] [314] [315] [316] [317] [318] [319] [320] [321] [322] [323] [324] [325] [326] [327] [328] [329] [330] [331] [332] [333] [334] [335] [336] [337] [338] [339] [340] [341] [342] [343] [344] [345] [346] [347] [348] [349] [350] [351] [352] [353] [354] [355] [356] [357] [358] [359] [360] [361] [362] [363] [364] [365] [366] [367] [368] [369] [370] [371] [372] [373] [374] [375] [376] [377] [378] [379] [380] [381] [382] [383] [384] [385] [386] [387] [388] [389] [390] [391] [392] [393] [394] [395] [396] [397] [398] [399] [400] [401] [402] [403] [404] [405] [406] [407] [408] [409] [410] [411] [412] [413] [414] [415] [416] [417] [418] [419] [420] [421] [422] [423] [424] [425] [426] [427] [428] [429] [430] [431] [432] [433] [434] [435] [436] [437] [438] [439] [440] [441] [442] [443] [444] [445] [446] [447] [448] [449] [450] [451] [452] [453] [454] [455] [456] [457] [458] [459] [460] [461] [462] [463] [464] [465] [466] [467] [468] [469] [470] [471] [472] [473] [474] [475] [476] [477] [478] [479] [480] [481] [482] [483] [484] [485] [486] [487] [488] [489] [490] [491] [492] [493] [494] [495] [496] [497] [498] [499] [500] [501] [502] [503] [504] [505] [506] [507] [508] [509] [510] [511] [512] [513] [514] [515] [516] [517] [518] [519] [520] [521] [522] [523] [524] [525] [526] [527] [528] [529] [530] [531] [532] [533] [534] [535] [536] [537] [538] [539] [540] [541] [542] [543] [544] [545] [546] [547] [548] [549] [550] [551] [552] [553] [554] [555] [556] [557] [558] [559] [560] [561] [562] [563] [564] [565] [566] [567] [568] [569] [570] [571] [572] [573] [574] [575] [576] [577] [578] [579] [580] [581] [582] [583] [584] [585] [586] [587] [588] [589] [590] [591] [592] [593] [594] [595] [596] [597] [598] [599] [600] [601] [602] [603] [604] [605] [606] [607] [608] [609] [610] [611] [612] [613] [614] [615] [616] [617] [618] [619] [620] [621] [622] [623] [624] [625] [626] [627] [628] [629] [630] [631] [632] [633] [634] [635] [636] [637] [638] [639] [640] [641] [642] [643] [644] [645] [646] [647] [648] [649] [650] [651] [652] [653] [654] [655] [656] [657] [658] [659] [660] [661] [662] [663] [664] [665] [666] [667] [668] [669] [670] [671] [672] [673] [674] [675] [676] [677] [678] [679] [680] [681] [682] [683] [684] [685] [686] [687] [688] [689] [690] [691] [692] [693] [694] [695] [696] [697] [698] [699] [700] [701] [702] [703] [704] [705] [706] [707] [708] [709] [710] [711] [712] [713] [714] [715] [716] [717] [718] [719] [720] [721] [722] [723] [724] [725] [726] [727] [728] [729] [730] [731] [732] [733] [734] [735] [736] [737] [738] [739] [740] [741] [742] [743] [744] [745] [746] [747] [748] [749] [750] [751] [752] [753] [754] [755] [756] [757] [758] [759] [760] [761] [762] [763] [764] [765] [766] [767] [768] [769] [770] [771] [772] [773] [774] [775] [776] [777] [778] [779] [780] [781] [782] [783] [784] [785] [786] [787] [788] [789] [790] [791] [792] [793] [794] [795] [796] [797] [798] [799] [800] [801] [802] [803] [804] [805] [806] [807] [808] [809] [810] [811] [812] [813] [814] [815] [816] [817] [818] [819] [820] [821] [822] [823] [824] [825] [826] [827] [828] [829] [830] [831] [832] [833] [834] [835] [836] [837] [838] [839] [840] [841] [842] [843] [844] [845] [846] [847] [848] [849] [850] [851] [852] [853] [854] [855] [856] [857] [858] [859] [860] [861] [862] [863] [864] [865] [866] [867] [868] [869] [870] [871] [872] [873] [874] [875] [876] [877] [878] [879] [880] [881] [882] [883] [884] [885] [886] [887] [888] [889] [890] [891] [892] [893] [894] [895] [896] [897] [898] [899] [900] [901] [902] [903] [904] [905] [906] [907] [908] [909] [910] [911] [912] [913] [914] [915] [916] [917] [918] [919] [920] [921] [922] [923] [924] [925] [926] [927] [928] [929] [930] [931] [932] [933] [934] [935] [936] [937] [938] [939] [940] [941] [942] [943] [944] [945] [946] [947] [948] [949] [950] [951] [952] [953] [954] [955] [956] [957] [958] [959] [960] [961] [962] [963] [964] [965] [966] [967] [968] [969] [970] [971] [972] [973] [974] [975] [976] [977] [978] [979] [980] [981] [982] [983] [984] [985] [986] [987] [988] [989] [990] [991] [992] [993] [994] [995] [996] [997] [998] [999] [1000] [1001] [1002] [1003] [1004] [1005] [1006] [1007] [1008] [1009] [1010] 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To Change The Unit Of Measure

1. Position the cursor at
a unit to change

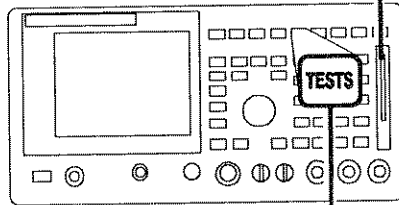


2. Press desired unit



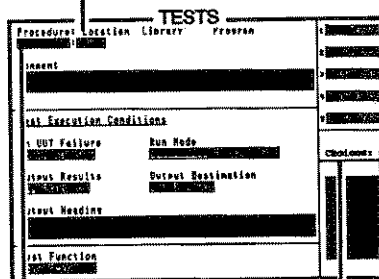
To Run A Memory Card Program

1. Insert a memory card



2. Press

3. List the choices



4. Choose Card

5. List the choices

6. Choose a program

The screenshot shows the 'TESTS' screen with the following fields and annotations:

- TESTS** (Title)
- Proc**: 1001 Location Library program
- Comp**: 1001
- Cond**: 1001
- Test**: 1001
- Run Mode**: 1001
- Output**: 1001
- Output Destination**: 1001
- Output**: 1001
- Test Function**: 1001

Annotations (arrows) point to the following fields:

- Edit the test specifications**: Points to the **Proc** field.
- Edit the test frequencies**: Points to the **Comp** field.
- Edit the test sequence**: Points to the **Cond** field.
- Edit the test configuration and/or Edit the test parameters**: Points to the **Test** field.

Edit the test frequencies

Edit the test sequence

Edit the test configuration and/
or Edit the test parameters

TESTS

Process 1001	Location	Library	program
Console	[Blank Screen]		
Test			
Execution Conditions			
On CPU 1001	Failure [Blank Screen]	Run Mode [Blank Screen]	
Output 1001	Results [Blank Screen]	Output Destination [Blank Screen]	
Output 1001	Heading [Blank Screen]		
Test function TESTING			

To Screen

1001	1002	1003	1004	1005	1006	1007	1008	1009	1010
1011	1012	1013	1014	1015	1016	1017	1018	1019	1020
1021	1022	1023	1024	1025	1026	1027	1028	1029	1030
1031	1032	1033	1034	1035	1036	1037	1038	1039	1040
1041	1042	1043	1044	1045	1046	1047	1048	1049	1050
1051	1052	1053	1054	1055	1056	1057	1058	1059	1060
1061	1062	1063	1064	1065	1066	1067	1068	1069	1070
1071	1072	1073	1074	1075	1076	1077	1078	1079	1080
1081	1082	1083	1084	1085	1086	1087	1088	1089	1090
1091	1092	1093	1094	1095	1096	1097	1098	1099	1100
1101	1102	1103	1104	1105	1106	1107	1108	1109	1110
1111	1112	1113	1114	1115	1116	1117	1118	1119	1120
1121	1122	1123	1124	1125	1126	1127	1128	1129	1130
1131	1132	1133	1134	1135	1136	1137	1138	1139	1140
1141	1142	1143	1144	1145	1146	1147	1148	1149	1150
1151	1152	1153	1154	1155	1156	1157	1158	1159	1160
1161	1162	1163	1164	1165	1166	1167	1168	1169	1170
1171	1172	1173	1174	1175	1176	1177	1178	1179	1180
1181	1182	1183	1184	1185	1186	1187	1188	1189	1190
1191	1192	1193	1194	1195	1196	1197	1198	1199	1200
1201	1202	1203	1204	1205	1206	1207	1208	1209	1210
1211	1212	1213	1214	1215	1216	1217	1218	1219	1220
1221	1222	1223	1224	1225	1226	1227	1228	1229	1230
1231	1232	1233	1234	1235	1236	1237	1238	1239	1240
1241	1242	1243	1244	1245	1246	1247	1248	1249	1250
1251	1252	1253	1254	1255	1256	1257	1258	1259	1260
1261	1262	1263	1264	1265	1266	1267	1268	1269	1270
1271	1272	1273	1274	1275	1276	1277	1278	1279	1280
1281	1282	1283	1284	1285	1286	1287	1288	1289	1290
1291	1292	1293	1294	1295	1296	1297	1298	1299	1300
1301	1302	1303	1304	1305	1306	1307	1308	1309	1310
1311	1312	1313	1314	1315	1316	1317	1318	1319	1320
1321	1322	1323	1324	1325	1326	1327	1328	1329	1330
1331	1332	1333	1334	133					

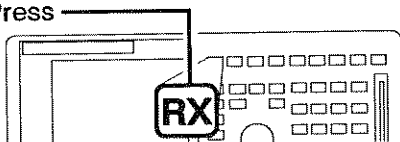
NOTE: Press the TESTS key
to exit an editing screen.

8. Run the program:

[illegible]

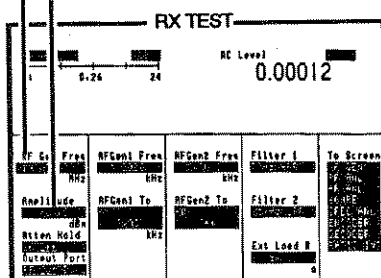
To Set Up Single-Tone Modulation

1. Press



2. Enter the carrier frequency

3. Enter the carrier amplitude



4. Select the Output Port

5. Enter the modulation frequency

7. Choose the modulation type

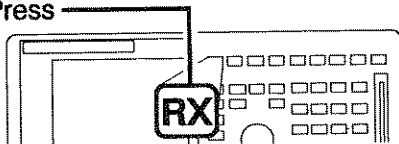
RX TEST				
0 0.26 26		AC Level 0.0001		
RF Gen Freq 100.000000 MHz	RFGen1 Freq 100.000000 MHz	RFGen2 Freq 100.000000 MHz	Filter 1 Bandpass	Channel1
Amplitude 20.00	RFGen1 To 100.000000 MHz	RFGen2 To 100.000000 MHz	Filter 2 Bandpass	Ext Load R 0
Atten Hold Off				
Output Port Channel1				

6. List the modulation choices

8. Enter the depth or deviation

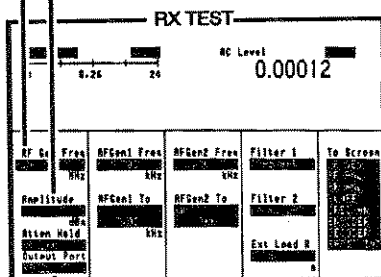
To Set Up Single-Tone Modulation With Signaling

1. Press



2. Enter the carrier frequency

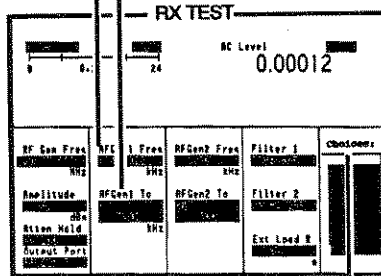
3. Enter the carrier amplitude



4. Select the Output Port

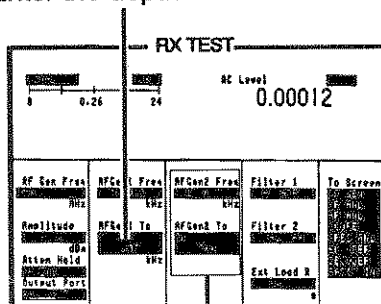
5. Enter the modulation frequency

6. List the modulation choices



7. Choose the modulation type

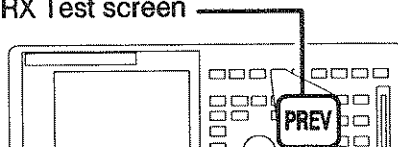
8. Enter the depth or deviation



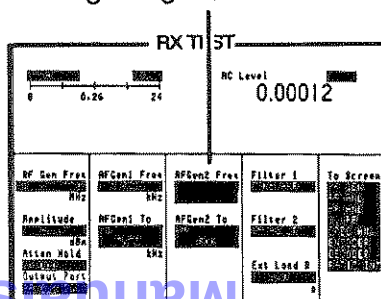
9. Refer to page 38 to set up the signaling then return to step 10

NOTE: The modulation type must be the same in AFGen 1 and AFGen 2.

10. Press to return to the RX Test screen

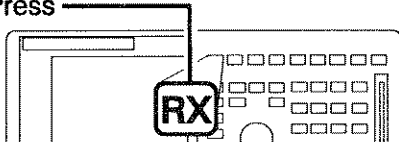


11. Turn signaling on/off



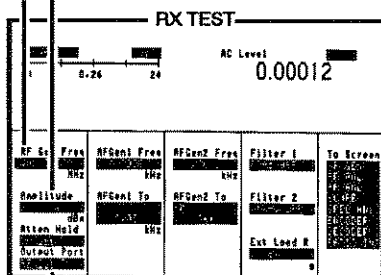
To Set Up Two-Tone Modulation

1. Press



2. Enter the carrier frequency

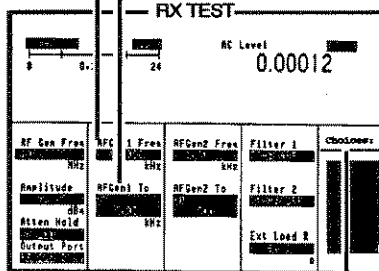
3. Enter the carrier amplitude



4. Select the Output Port

5. Enter the modulation frequency

6. List the modulation choices



7. Choose the modulation type

8. Enter the depth or deviation

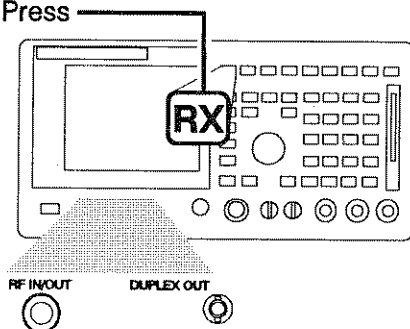
RX TEST					
0 0.25 25		RC Level 0.00012			
RF Gen Freq Hz	AFGen1 Freq kHz	AFGen2 Freq kHz	Filter 1 	To Screen 	
Amplitude dBm	AFGen1 To kHz	AFGen2 To kHz	Filter 2 	Ext Load 2 	
Attenu Hold 					
Output Port 					

9. Repeat steps 2 thru 5 for AFGen 2

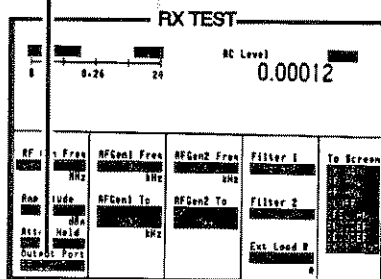
NOTE: The modulation type must be the same in AFGen 1 and AFGen 2.

To Choose An RF Output Port

1. Press

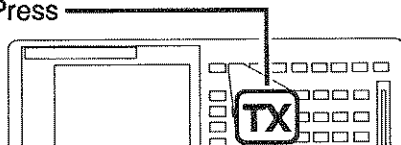


2. Underline RF Out or Dupl



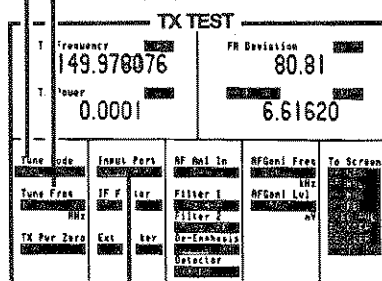
To Measure Modulation

1. Press



2. Select the Tune Mode

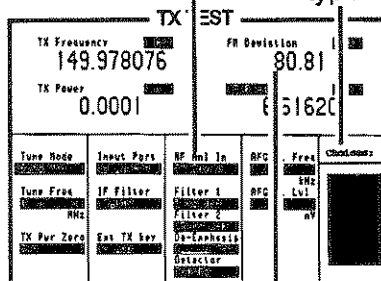
2a. Enter the Tune Freq if
Manual Tune Mode is used



3. Select the Input Port

4. List the demodulation
choices

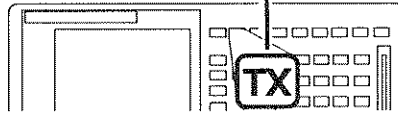
5. Choose the
demodulation
type



6. Read

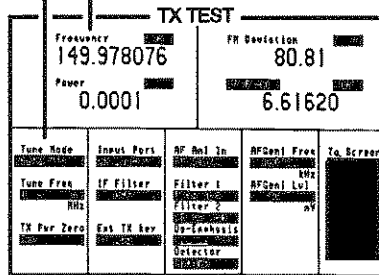
To Measure RF Frequency

1. Press



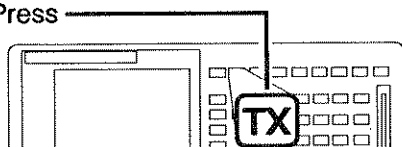
2. Underline Auto

3. Read



To Measure RF Frequency Error

1. Press



2. Underline Manual

3. Enter the Tune Freq

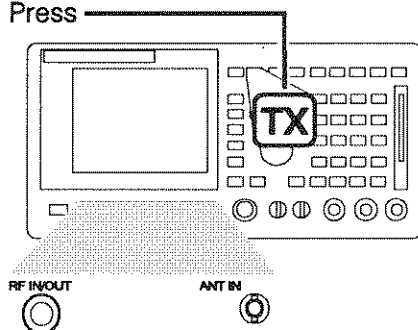
4. Select the Input Port

- TX TEST				
Tx Error	149.978	76	FM Deviation	80.81
Tx over	0000		6.61620	
Tune Mode	Input Port	AF Anl In	AFGenl Freq	To Screen
Tune Freq	F Filter	Filter 1	AFGenl Lvl	
PHs		Filter 2		
TX Per Zero	wt TX lev	De-Emphasis		
		Selector		

5. Read

To Choose An RF Input Port

1. Press

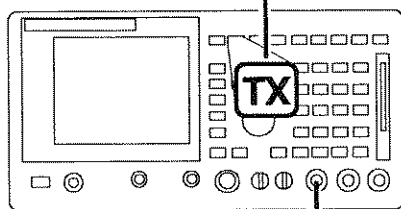


2. Underline RF In or Ant

TX TEST				
TX Frequency 149.97		FR Deviation 80.81		
TX Power 0.00		6.61620		
Tune Mode [Menu]	Input Port [Menu]	RF Ant In [Menu]	RFCont Free [Menu]	To Screen
Tune Freq [Menu]	IF Filter [Menu]	Filter 1 [Menu]	RFCont Lvl [Menu]	
Tune Freq [Menu]	Ext TX Rev [Menu]	Filter 2 [Menu]		
TX Per Zero [Menu]		On-Enhance [Menu]		
		Detector [Menu]		

To Output An AF Sine Wave

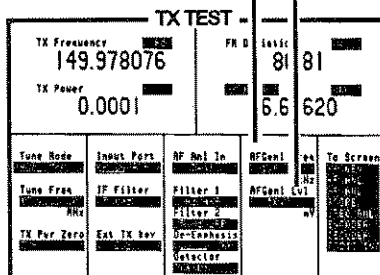
- ## 1. Press



- ## 2. Connect to AUDIO OUT

- ### 3. Enter the audio level

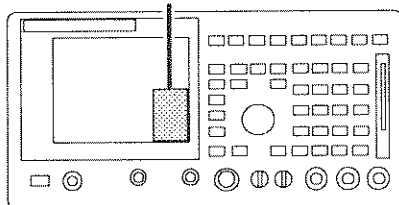
4. Enter the audio frequency



To Output A Sine, Square, Triangle, Or Sawtooth Waveform*

*Option 004 required in HP 8920

1. Choose ENCODER from the To Screen



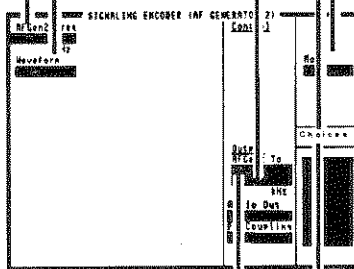
2. Set the Mode to Func Gen

3. Enter the frequency

4. List the choices

5. Choose the waveform

8. Enter the level

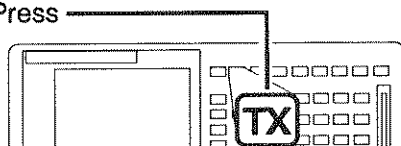


6. List the choices

7. Choose Audio Out

To Measure Audio Distortion

1. Press



2. List the
choices

3. Choose
Distn

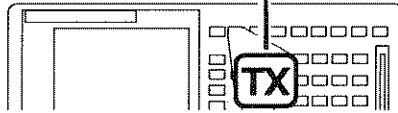
TX TEST					
TX Frequency 149.978076		PR Distortion 80.81			
TX Power 0.0001		6.61620			
Tune Mode [Menu]	Input Port [Menu]	AF Aml In [Menu]	AF Co [Menu]	Freq [Menu]	Chotones [Menu]
Tune Freq [Menu] kHz	TF Filter [Menu]	File 1 [Menu]	AF Co [Menu]	kHz [Menu]	[Large Display Area]
TX Per Zero [Menu]	Ext TX key [Menu]	File 2 [Menu]	AF Co [Menu]	kHz [Menu]	
		File 3 [Menu]	AF Co [Menu]	kHz [Menu]	

4. Read

NOTE: Measures the distortion on a 1 kHz tone using the input displayed here.

To Measure Audio Frequency

1. Press



2. List the choices

3. Choose
AF Freq

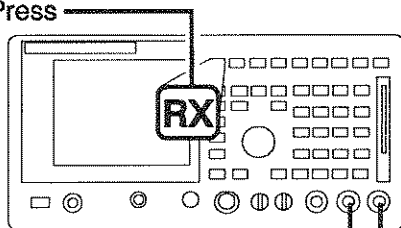
TX TEST					
TX Frequency 149.978076		FR Rejection 80.81			
TX Power 0.0001		6.61620			
Tune Mode MHz	Input Port EXT	AF Ant In 1	AFG MHz	Freq MHz	Cholesterol
Tune Freq MHz	IF Filter 1	AFG MHz	AFG Lvl	AV	
TX Pur Zero	Ext TX Rev	AFG MHz	AFG Lvl	AV	
		AFG MHz	AFG Lvl	AV	

4. Read

NOTE: Measures the frequency of the input displayed here.

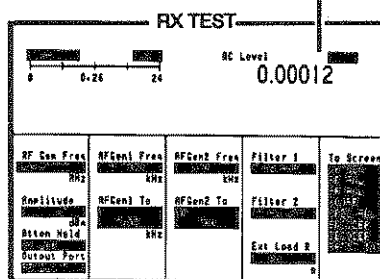
To Measure Audio Voltage

1. Press



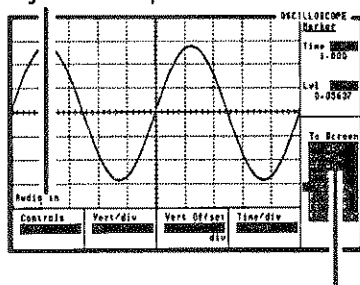
2. Connect to AUDIO IN

3. Read



To Change The Scope Input

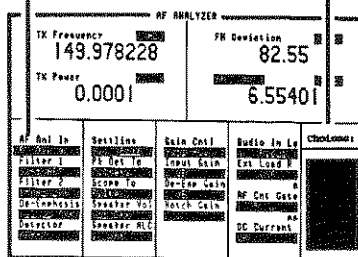
1. Verify which input is selected



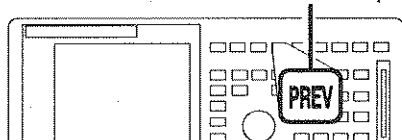
2. Select AF Anl from To Screen:

3. List the choices

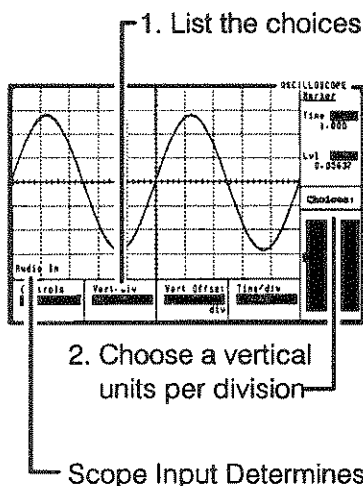
4. Choose the input



5. Press PREV to return to the scope



To Change The Scope Vertical Units Per Division

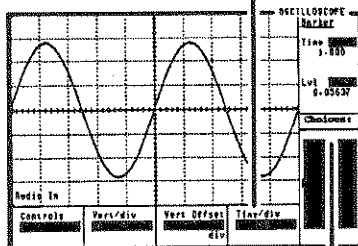


Scope Input	Unit of Measure
Audio In	V
FM	kHz
AM	%
SSB	mV

NOTE: To change the scope input see page 30.

To Change The Scope Horizontal Units Per Division

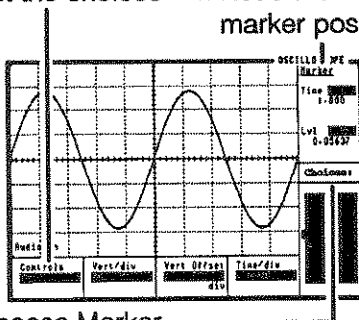
- ### 1. List the choices



- ## 2. Choose a time

To Use The Scope Marker

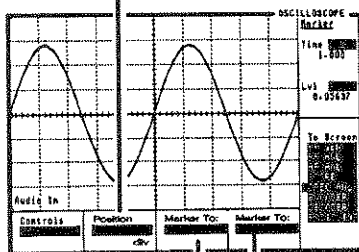
1. List the choices
4. Read the marker position



2. Choose Marker

3. Marker position

Manually position the marker with the knob



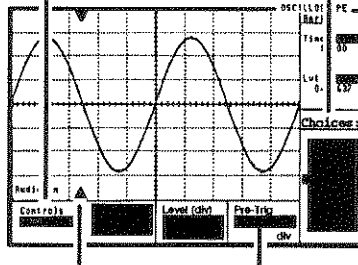
Push the knob to move the marker to the peak of the signal

Push the knob to change the center frequency or ref level to marker's position

To Display A Scope Waveform Before The Trigger Point

1. List the choices

2. Choose Trigger

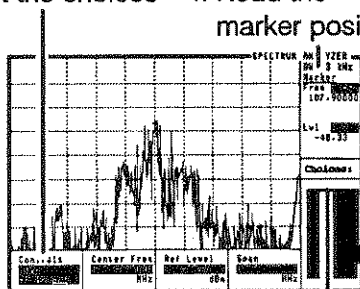


3. Adjust the pre-Trigger position with the knob

Pre-trigger cursor

To Use The Spectrum Analyzer Marker

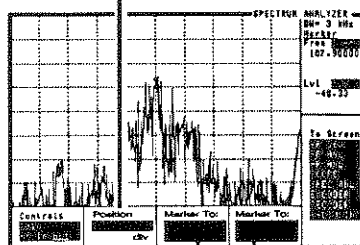
1. List the choices
4. Read the marker position



2. Choose Marker

3. Marker position

Manually position the marker with the knob

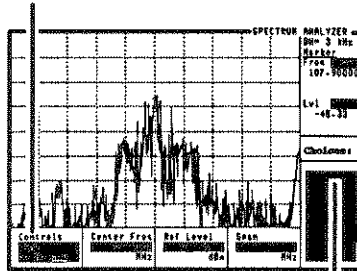


Push the knob to move the marker to the peak of the signal

Push the knob to change the center frequency or ref level to marker's position

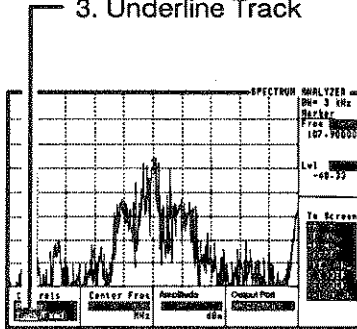
To Set Up The Spectrum Analyzer Tracking Generator

1. List the choices

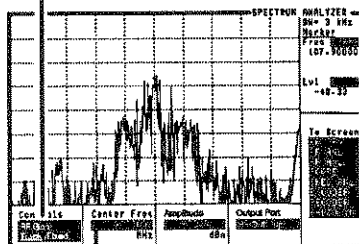


2. Choose RF Gen

3. Underline Track



4. Adjust the offset frequency using the Knob

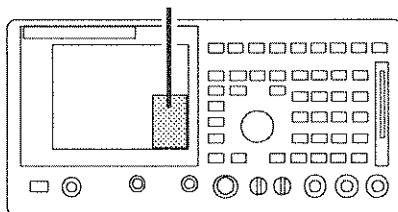


5. Enter the amplitude

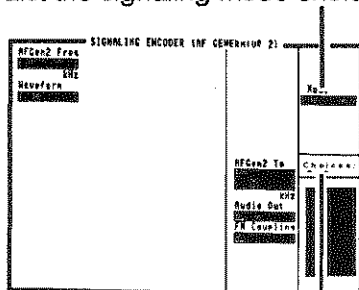
To Output Tone Sequential Signaling*

*Option 004 Required in HP 8920

1. Choose ENCODER from the To Screen

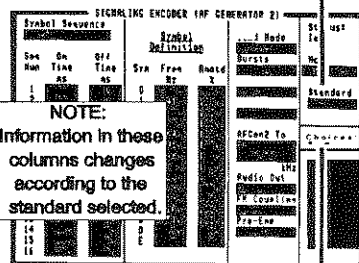


2. List the signaling mode choices



3. Choose Tone Seq

4. List the standard choices



5. Choose a standard

6. Enter a tone sequence using the symbols 0-9, A-E, and space

SIGNALING ENCODER (AF GENERATOR 2)

Symbol Sequence			Symbol Definition			Send Mode		Status
Seq Num	On Time	Off Time	Seq Num	Freq	Amplitude	Hz	dB	Idle
1	ns	ns	0	Hz	2			Standard
2			1					
3			2					
4			3					
5			4					
6			5					
7			6					
8			7					
9			8					
10			9					
11			A					
12			B					
13			C					
14			D					
15			E					
16								

7. List the Send Mode choices

8. Choose the mode

9. List the output choices

10. Choose the output

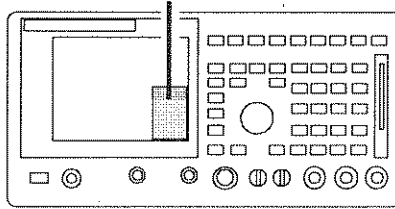
SIGNALING ENCODER (AF GENERATOR 2)

Symbol Sequence			Symbol Definition			Send Mode		Status
Seq Num	On Time	Off Time	Seq Num	Freq	Amplitude	Hz	dB	Idle
1	ns	ns	0	Hz	2			Standard
2			1					
3			2					
4			3					
5			4					
6			5					
7			6					
8			7					
9			8					
10			9					
11			A					
12			B					
13			C					
14			D					
15			E					
16								

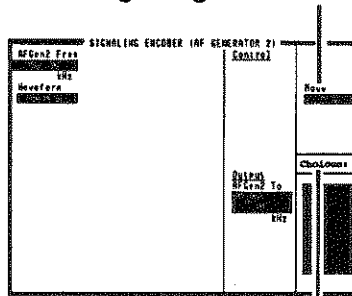
11. Select Send

To Output A DTMF Sequence

1. Choose ENCODER from the To Screen



2. List the signaling mode choices



3. Choose DTMF

4. Enter the sequence

SIGNALLING ENCODER (RF GENERATOR 2)									
Sequence	On Time				Send Mode	Status	Idle		
Twist	Off Time				On	Node			
Symbol Frequencies (Hz):					Standard				
1	2	3	A	12 To	Choices				
4	5	6	B	12 To					
7	8	9	C	12 To					
*	0	#	D	12 To					

5. List the Send Mode choices

6. Choose the mode

7. List the output choices

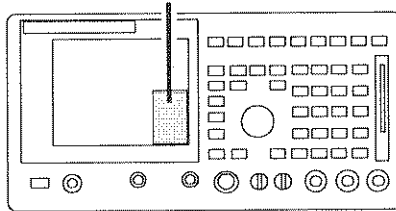
8. Choose the output

SIGNALLING ENCODER (RF GENERATOR 2)									
Sequence	On Time				Send Mode	Status	Idle		
Twist	Off Time				On	Node			
Symbol Frequencies (Hz):					Standard				
1	2	3	A	12 To	Choices				
4	5	6	B	12 To					
7	8	9	C	12 To					
*	0	#	D	12 To					

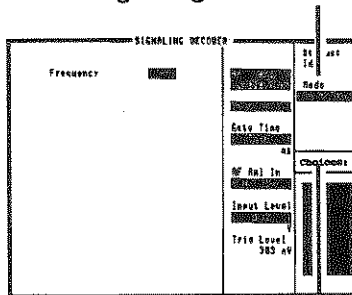
9. Select Send

To Decode A Signaling Sequence

1. Choose DECODER from the To Screen

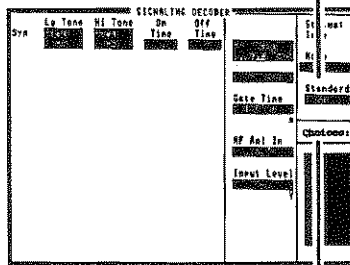


2. List the signaling mode choices



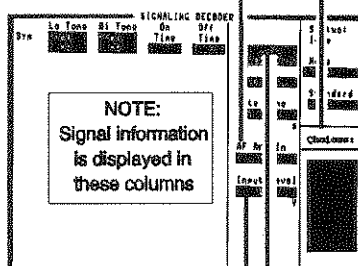
3. Choose the signaling mode

4. List the standard choices

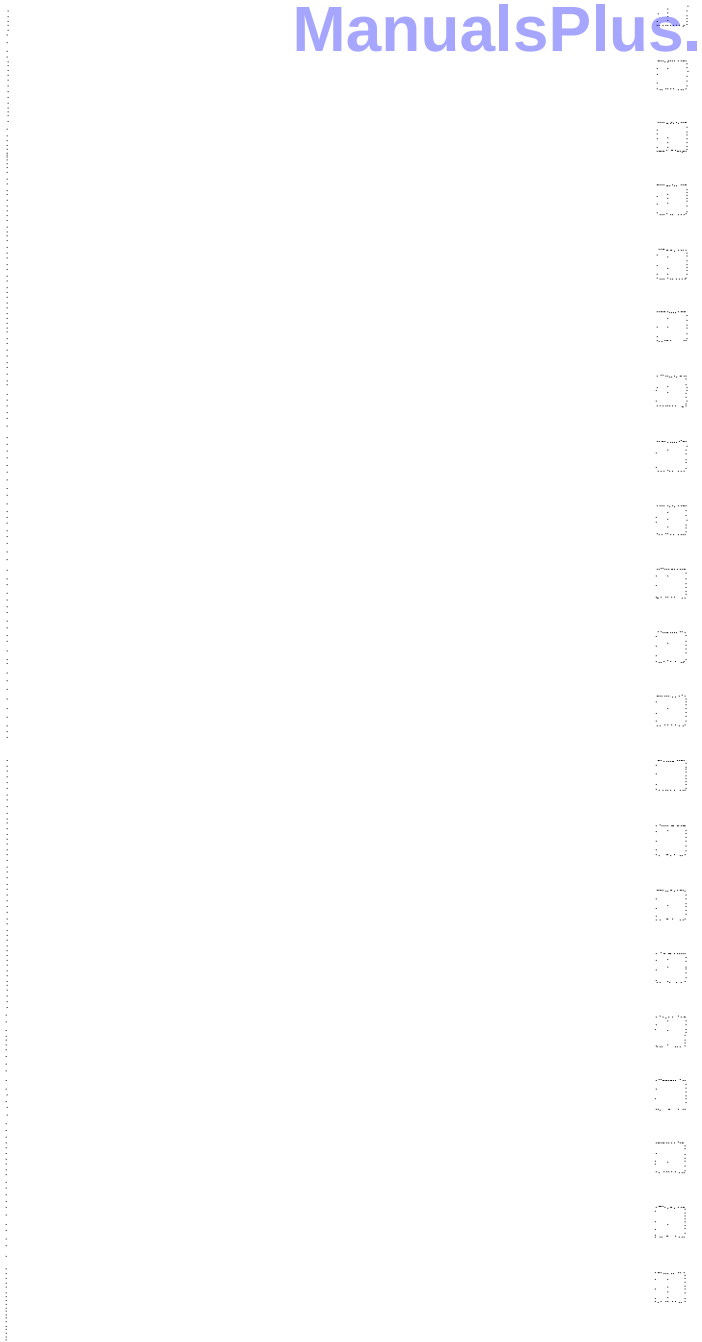


5. Choose a standard

6. List the choices of inputs
7. Choose the input



8. Enter the estimated level of the input signal (after de-emphasis if used)
9. Push knob to arm the decoder for a measurement



Instrument Terms And Abbreviations

**Refer to the Instrument User's Guide
if more information is needed.**

AF Anl- Audio Frequency Analyzer.

**AF Anl In- Audio Frequency Analyzer
Input.**

**AF Cnt Gate- Audio Frequency Counter
Gate Time.**

AF Gen1- Audio Frequency Generator 1.

**AF Gen2- Audio Frequency Generator 2.
Also used as the signaling
Encoder.**

Ant- Antenna.

Instrument Terms And Abbreviations

ANT IN- Antenna Input. An alternate input connector for the RF Analyzer and Spectrum Analyzer for low level measurements. RF power **CANNOT** be measured from this connector.

ASSIGN. The key used to assign USER keys to instrument settings. To assign a USER key, position the cursor adjacent to the setting, press SHIFT, ASSIGN, and then one of the user keys k1-k5 or k1'-k3'.

Atten Hold - Attenuator Hold. A setting that prevents the RF Generator output attenuator from changing ranges, limiting the amplitude adjustment range.

AUDIO IN (HI). External input connector for audio measurements.

AUDIO IN (LO). External input connector for floating measurements. To ground or float the connector use the Audio In Lo field on the AF ANL screen.

AUDIO OUT. External output connector for AF Gen1 and/or AFGen2 (Encoder).

AVG- Average. The key used to do measurement averaging. When used it smooths out the measurement of rapidly fluctuating signals. To activate averaging, position the cursor adjacent to the unit of measure of the measurement. Then press SHIFT, AVG, ENTER. To cancel averaging, press SHIFT, AVG, ON/OFF.

CONFIG- Configure. The key used to access the CONFIGURE screen to change the HP-IB address, define the printer type, setup serial communications, and several other instrument settings.

Instrument Terms And Abbreviations

DC FM Zero. This function removes DC offset when using DC-coupled FM.

DECODER. Signaling decoder.

Dupl- Duplex.

DUPLEX. The key used to access the DUPLEX TEST screen for simultaneous transmitter/receiver testing.

DUPLEX OUT. An alternate output connector for the RF Generator and Spectrum Analyzer Tracking Generator.

ENCODER. Signaling encoder.

Ext Load R- External Load Resistance.

This function is used to specify the impedance of the device connected to the AUDIO IN connector for calibrated audio power measurements.

Ext TX Key- External Transmitter Key.

This function keys a transmitter through the MIC/ACC connector.

Filter 1. The AF Analyzer high-pass and optional filters.

Filter 2. The AF Analyzer low-pass and optional filters.

Instrument Terms And Abbreviations

Gain Cntl- Gain Control. This function selects the automatic or manual AF Analyzer input, De-Emp, and Notch gains. Auto is normally used.

HI LIMIT/LO LIMIT. The keys used to set high and low measurement limits. To enter the limits, position the cursor adjacent to the unit-of-measure of the measurement, then press SHIFT, LO or HI LIMIT, a value, ENTER. To cancel limits, press SHIFT, LO or HI LIMIT, ON/OFF.

HOLD. The key used to freeze information displayed on the screen. Select HOLD again to release the display.

IF Filter- Intermediate Frequency Filter. A field that selects the RF Analyzer IF bandwidth.

Input Atten- Input Attenuator.

k1,k2,k3,k4,k5. Local USER keys are for accessing a user-assigned field on the currently displayed screen. Pressing a local user key moves the cursor adjacent to the key's assigned field.

k1',k2',k3'. Global USER keys are for accessing a user-assigned field on another screen. Pressing the global user key displays the assigned field at the top of the currently displayed screen.

Instrument Terms And Abbreviations

MEAS RESET- Measurement Reset.

METER. The key used to display the analog meter. To set up the meter, position the cursor adjacent to the unit of measure of the measurement to display, then press SHIFT, METER.

MIC/ACC- Microphone/Accessory. A connector that is used to key a transmitter and/or modulate a carrier with a microphone.

Mic Pre-Emp (Auto)- Microphone Pre-Emphasis. This function automatically switches in and out the pre-emphasis network (750us).

Mic Pre-Emp (Hold)- Microphone Pre-Emphasis. This function allows manual switching in and out of the pre-emphasis network when FM modulation is used.

☐ **Mod In To- Modulation In To.** This function selects the RF Generator's modulation type when using the Modulation Input and MIC/ACC connectors for external modulation.

☐ **Normalize (A-B).** A Spectrum Analyzer entry to display the difference between the current screen and a previously saved screen.

☐ **Normalize (A Only).** A Spectrum Analyzer entry to select a normal display

☐ **Normalize (Save B).** A Spectrum Analyzer entry to save the current display.

Instrument Terms And Abbreviations

Pk Det To (De-Emp)- Peak Detector To (De-Emphasis). This function sets up the AF Analyzer to measure the peak voltage after the de-emphasis network.

Pk Det To (Filters)- Peak Detector To (Filters). This function sets up the AF Analyzer to measure the peak voltage after audio filters 1 and 2 and before the de-emphasis network.

PREV- Previous screen. The key used to toggle between the currently displayed screen and the previously accessed screen.

PRESET. The key used to reset the instrument's settings to the factory-defined default states.

PRINT. The key used to print the currently displayed screen if a printer is connected to the rear-panel's SERIAL PORT or the HP-IB connector. To set up the instrument for printing, press SHIFT, CONFIG to access the CONFIGURE screen. On the screen select the printer port in the Print To field. For HP-IB printers enter the printers address in the Print Adrs field. This is a graphic pixel dump that requires an HP graphic-compatible printer.

Instrument Terms And Abbreviations

Range Hold. This function selects the automatic or manual control of all AF Analyzer and RF Analyzer gain, and tuning adjustments.

RECALL. The key used to recall previously saved settings.

REF SET- Reference Set. The key used enter a measurement reference level. To enter a reference level, position the cursor adjacent to the unit of measure of the measurement. Then press SHIFT, REF SET, enter the ref level*, and complete the entry by pressing ENTER. To cancel ref set, press SHIFT, REF SET, ON/OFF.

*The currently displayed measurement value is used as the reference if you do not enter a specific value.



RELEASE. The key used to clear a user key's assignment.



RF Anl- Radio Frequency Analyzer.



RF Cnt Gate- Radio Frequency Counter Gate Time.



RF Gen- Radio Frequency Generator.



RF Offset (Gen-Anl)- Radio Frequency Offset (Generator-Analyzer). An entry that sets up the difference between the RF Generator and RF Analyzer frequencies. Automatically offsets the RF Analyzer tune frequency from the RF Generator frequency.



Instrument Terms And Abbreviations

RX- Receiver Test. The key used to access the RX TEST screen for performing tests on a radio receiver.

RX/TX Cntl (Auto)- RX TEST/TX TEST screen Control (Auto). This function enables automatic switching between the RX TEST and TX TEST screens.

RX/TX Cntl (Carrier)- Receiver/Transmitter Control (Carrier). This function automatically switches RX TEST and TX TEST screens when a signal is detected at the RF IN/OUT or ANT IN connector and Auto is selected in the RX/TX Cntl field.



RX/TX Cntl (Manual)- RX TEST and TX TEST screen Control (Manual).



This function disables automatic switching between the RX TEST and TX TEST screens.



RX/TX Cntl (ptt)- Receiver/Transmitter Control (push to talk). This function switches the instrument to the RX TEST screen when a microphone connected to the MIC/ACC connector is keyed, and Auto is selected in the RX/TX Cntl field.



Instrument Terms And Abbreviations

SAVE. The key used to save settings displayed on the screen. The number of settings that can be saved depends on the number of entries made since the default settings.

SCOPE- Oscilloscope. This selection accesses the OSCILLOSCOPE screen.

Sensitivity. A field that sets up the RF Analyzer's input sensitivity at the ANT IN connector. Measurements may not be as accurate when using High sensitivity.

Settling (Fast). This function sets up the AF Analyzer for fast settling. Use for measurements above 200 Hz.

Settling (Slow). This function sets up the AF Analyzer for slow settling. Use for measurements below 200 Hz.

- ☐
- ☐
- ☐



SPEC ANL- Spectrum Analyzer. This selection accesses the **SPECTRUM ANALYZER** screen.



Squelch (Fixed). The instrument is set to the factory defined squelch level.



Squelch (Open). The instrument is set for no squelch.



Squelch (Pot). The instrument is set to manually adjust the squelch with the knob.



Instrument Terms And Abbreviations

TESTS. The key used to access the TESTS screen for running IBASIC programs.

Tune Mode (Auto). This function sets up the RF Analyzer to tune to the input signal and displays the signal's frequency.

Tune Mode (Manual). This function sets up the RF Analyzer to tune to the manually-entered frequency and displays the difference between the input signal and the manually entered frequency.

TX- Transmitter Test. The key used to access the TX TEST screen for performing tests on a radio transmitter.

TX Pwr Meas- Transmitter Power Measurement Zero. This function zeros the RF power meter.

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