DOCUMENTATION
INSERTS

Enhanced Full Rate (EFR) Speech Mode for the HP/Agilent 8922

This document provides information about the enhancements made to the HP/Agilent 8922, so that it can test mobiles which support Enhanced Full Rate (EFR) speech coding.

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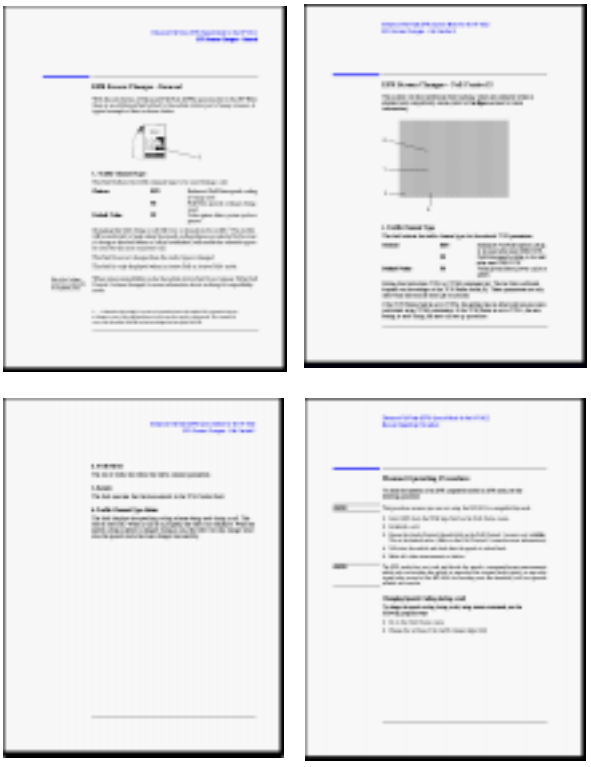
These Documentation Inserts contain information for the following guides;

- **Agilent Technologies 8922M/S User's Guide**
- **HP/Agilent 8922P, R, X, Y Supplementary User's Guide**
- **Agilent Technologies 8922M/S Programming Reference Guide**

The Inserts are set out as follows;

HP/Agilent 8922 User's Guide Inserts (4 Pages)



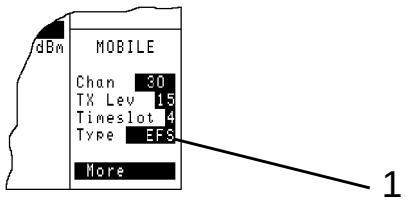
Agilent 8922 Programming Reference Guide Inserts (2 Pages)

The following pages should be added to the front of your **HP/Agilent 8922 User's Guide.**

If you have any queries about any of the following information, please contact your local Sales and Service Office.

EFR Screen Changes - General

With the introduction of Enhanced Full Rate (EFR) speech mode for the HP/ Agilent 8922, there is an additional field added to the mobile status part of many screens. A typical example of this is shown below.



1. Traffic Channel Type

This field defines the traffic channel type to be used during a call.

Choices	**EFS**	Enhanced Full Rate speech coding is being used
	FS	Full Rate speech coding is being used.
Default Value	**FS**	Value given after a power cycle or preset.

Changing this field during a call will force a channel mode modify[1]. The mobile will be instructed to begin using the speech coding scheme as selected by the user. A change to this field when no call is established, will enable the selected type to be used for the next connected call.

This field does not change when the radio type is changed.

This field is only displayed when in Active Cell or Active Cell+ mode.

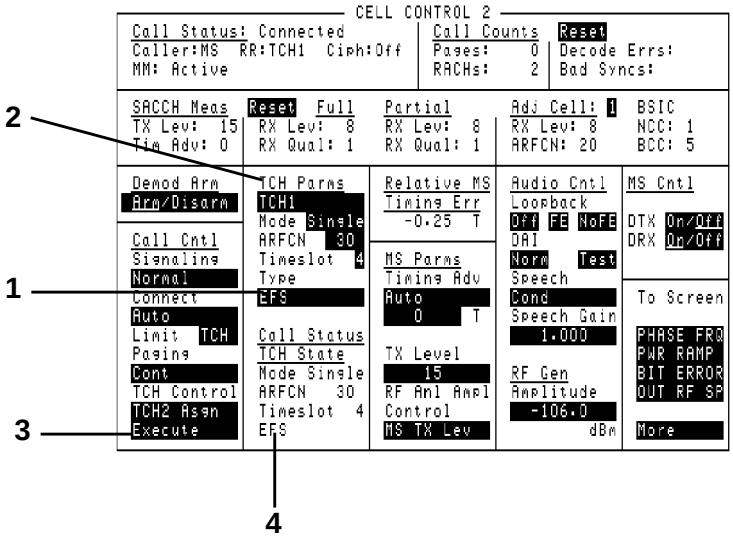
Refer to the Configure screen for an explanation of compatibility mode

When using compatibility mode, the mobile status field does not appear. Refer to Cell Control 2 screen changes for more information about working in compatibility mode.

1. A channel mode modify is a protocol command sent to the mobile. The command requests a change to some of the call parameters, in this case, the speech coding mode. The command is sent on the downlink FACCH and acknowledged on the uplink FACCH.

EFR Screen Changes - Cell Control 2

This screen will have additional field options, which are available when in standard and compatibility mode (refer to **Configure** screen for more information).



1. Traffic Channel Type

This field selects the traffic channel type for the selected TCH parameters.

Choices	**EFS**	Enhanced Full Rate speech coding to be used after next EXECUTE.
	FS	Full Rate speech coding to be used after next EXECUTE.
Default Value	**FS**	Value given after a power cycle or preset.

Setting this field alters TCH1 or TCH2 parameter list. The list that is affected depends on the settings of the TCH Parms fields (**2**). These parameters are only used when the execute field (**3**) is actioned.

If the TCH Parms field is set to TCH2, this setting has no effect until an execute is performed using TCH2 parameters. If the TCH Parms is set to TCH1, the new setting is used during the next call set up procedure.

2. TCH Parms

This is a list of fields that define the traffic channel parameters.

3. Execute

This field executes the function selected in the TCH Control field.

4. Traffic Channel Type Status

This field displays the speech coding scheme being used during a call. This field is read-only. When no call is in progress, this field is not displayed. When the speech coding scheme is changed during a call, this field will only change value once the speech mode has been changed successfully.

Manual Operating Procedure

To check the operation of an EFR compatible mobile in EFR mode, use the following procedure.

NOTE: This procedure assumes you are not using the HP/Agilent 8922 in compatibility mode.

1. Select EFS from the TCH type field on the Cell Status screen.
2. Establish a call.
3. Ensure the Audio Control, Speech field on the Cell Control 2 screen is set to **ECHO**. This is the default value. (Refer to the Cell Control 2 screen for more information).
4. Talk into the mobile and check that the speech is echoed back.
5. Make all other measurements as before.

NOTE: The EFR mode does not code and decode the speech, consequently any measurements which rely on decoding the uplink to reproduce the original audio signal, or any audio signal being routed to the HP/Agilent 8922 for encoding onto the downlink, will not provide reliable test results.

Changing Speech Coding during a call

To change the speech coding during a call, use the following steps.

1. Go to the Cell Status screen
2. Change the setting of the traffic channel type field

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Inserts for the Agilent Technologies 8922M/S Programming Reference Guide

The following pages should be added to the front of your *Agilent Technologies 8922 Programming Reference Guide*, once you have added EFR features.

If you have any queries about any of the following information, please contact your local Sales and Service Office.

Inserts for the Agilent Technologies 8922M/S Programming Reference Guide

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EFR GPIB changes

With the introduction of Enhanced Full Rate (EFR) speech mode for the HP/ Agilent 8922, there are some additional GPIB commands to Cell Control Subsystem. These are as follows.

New Command

CELL:CALL:TCH:TYPE 'FS' | 'EFS'
CELL:CALL:TCH:TYPE?

Sets or queries the speech coding scheme being used. The return value for a query is either "FS" or "EFS".

Only valid in compatibility mode

CELL:TCH1:TYPE 'FS' | 'EFS'
CELL:TCH1:TYPE?

Sets or queries the TCH1 field. The return value for a query is either "FS" or "EFS".

Only valid in compatibility mode

CELL:TCH2:TYPE 'FS' | 'EFS'
CELL:TCH2:TYPE?

Sets or queries the TCH2 field. The return value for a query is either "FS" or "EFS".

Existing command but with additional options

CELL:CALL:STATus:TCH:TYPE?

Queries the speech coding scheme currently being used. The return value for a query is either "FS" or "EFS" or "".

The value "" is returned when no call is established.

Remote Operating Procedure

To check the operation of an EFR compatible mobile in EFR mode, using GPIB remote commands, use the following procedure.

NOTE: This procedure assumes you are not using the HP/Agilent 8922 in compatibility mode.

1 Select EFS from the TCH type field on the Cell Status screen.

```
CELL:CALL:TCH:TYPE 'EFS'
```

2 Establish a call.

```
CELL:CALL:ORIG
```

3 Ensure the Audio Control, Speech field on the Cell Control 2 screen is set to **ECHO**. This is the default value. (Refer to the Cell Control 2 screen for more information).

```
CELL:AUDio:SPEech:CONFigure 'ECHO'
```

4 Talk into the mobile and check that the speech is echoed back. It is at this point you may wish to use your own audio testing facilities.

5 Make all other measurements as before.

Changing Speech Coding during a call

To change the speech coding during a call, using remote commands, use the following procedure.

1 Go to the Cell Status screen

```
DISPLay:SCReen CELL1
```

2 Change the setting of the traffic channel type field

```
CELL:CALL:TCH:TYPE 'FS'
```

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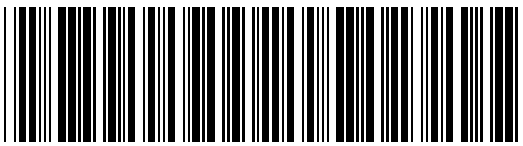
Agilent Technologies

Manufacturing Part Number

08922-90216



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