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Automatic Selection Mechanism Test Result

Please be informed that the the Automatic Selection Mechanism which is implemented in the model BE-25F/TT-25F is tested. The test result is accepted and agree with the flow chart that we had submitted to you earilier.

Regards,

K.K. Cheung



43-8-12

SouthTel HK Ltd.

BE-25F Channel Scanning Method

Hardware-

In handset, carrier detect signal is available from U1, TB31224 pin 5 and route to CPU U2 pin 20.

In base, carrier detect signal is available from BU5, TB31224 pin 5 and route to CPU BU1 pin 21.

These carrier detect signals indicates whether the receiving channel is available or busy.

Command Channel Scanning-

Command channel is a channel number between 16 and 25. Before an idle channel is found, the handset and the base unit use the command channel to communicate each other to ensure no rf link is established in channel 1 to 15.

When the unit is powered up first time, the command channel is 20. If interference is found at the command channel when handset is idle and charging its battery, the unit will increase the command channel by one until the command channel is 25. If channel 25 is busy, the unit will change the command channel to 16. For example if the unit found that the command channel 20 is busy when handset is charging the battery, it will change the default channel to 21.

When the base sending paging or ringing command to the handset, the unit will only use channel default to ensure no rf link is established in channel 1 to 15.

Conversation Channel Scanning-

1. Explanation of terms used in the flowchart

Hrx - Hrx is a variable name which contains a channel number between 1 and 25. After the scan channel procedure, it contains a channel number for the handset rf receiver and the base unit rf transmitter.

Brx - Brx is a variable name which contains a channel number between 1 and 25. After the scan channel procedure, it contains a channel number for the base unit rf receiver and the handset unit rf transmitter.

2. Conversation channel scanning when entering talk mode-

Before scan channel procedure both handset and base unit rf transmitters are switched off.

Step 1 - When setting up a conversation link, both handset and base try to search an available channel selected from channel no.1 to no.25 independently.

Step 2 - Set the last conversation channel as the starting point in the searching loop step 3, step 4, and step 5.

Step 3, step 4, step 5 and step 6 - a searching loop to find out an available channel. If a channel is found to be busy, the next channel to be examined will be advanced by 3 channels. If the next channel number is greater than 25, minus the number by 25 (step 5). For example, if channel 3 is busy, the next channel to be examined is channel 6. If channel 24 is busy, the next channel to be examined is channel $(24+3-25) = \text{channel 2}$. This process will be repeated until an available channel is found. Then the found channel number is the searching result (step 3). However, if all 25 channels are busy, the searching result is the command channel to ensure not to set up a link in channel 1 to channel 15 (step 6).

Step 7 - Then base and handset exchange their searching result via the channel default (within channel no.16 and no.25).

There are three possible combination of base unit and handset searching results:

(1) Both conversation channels searched by base and handset are within channel no.1 to no.15 (step 8 = no and step 9 = no). Then both base and handset tune to the searched channels.

(2) Both conversation channels searched are within channel no.16 to no.25. Then the unit tune to the searched channel with higher channel number. For example, if handset found that channel no.16 is available (Step 8 = Yes) while base found that channel no.19 is available (Step 10 = No), the unit will use channel no.19.

(3) One of the channel searched is within channel no.1 to no.15 while the other channel searched is within channel no.16 to no.25. Then the unit uses the later one. For example, if handset found that channel no.14 is available (Step 8 = No) while base found that channel no.17 is available (Step 9 = Yes), both handset and base unit will tune to channel no.17.

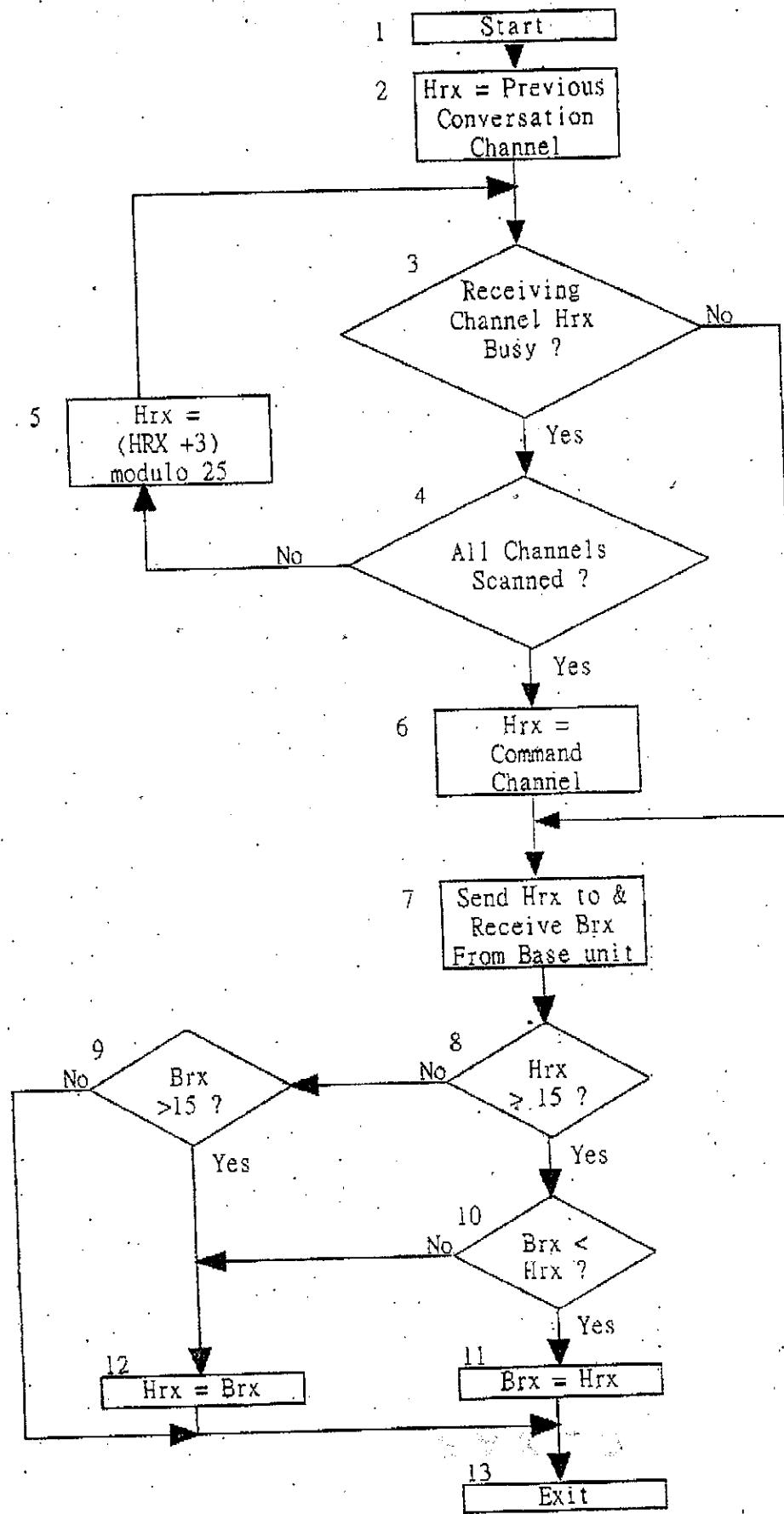
3. Conversation channel scanning during manual channel change -

When the user manual change channel during conversation, the

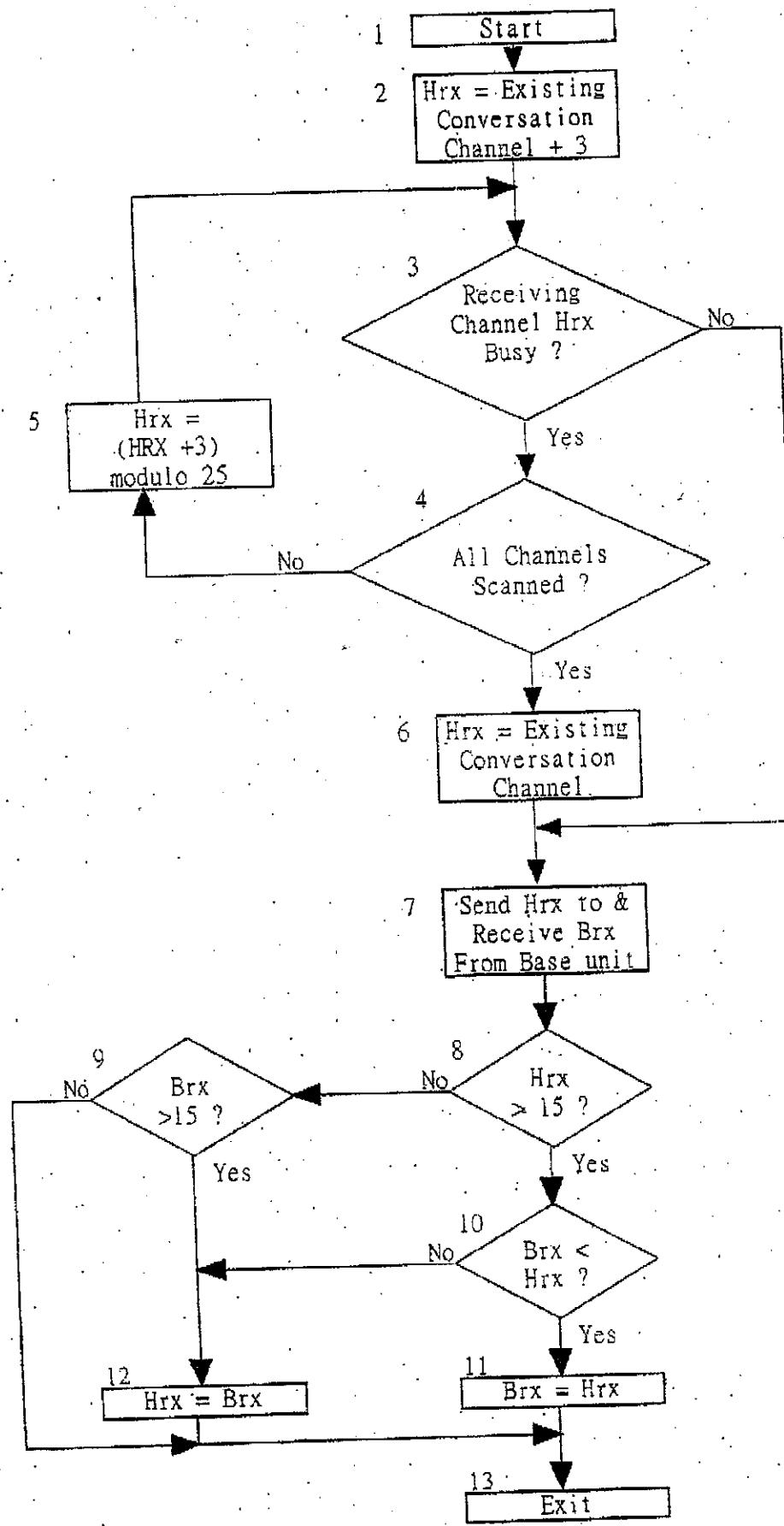
method is similar to conversation channel scanning when entering talk mode except three points:

- (1) The first channel to be examined will the existing conversation channel advanced by 3 channels.
- (2) After available channels are searched, handset and base exchange their findings via the existing conversation channel.
- (3) The existing conversation channel will not be examined. If both handset and base could not find an available channel, the unit will go back to the existing conversation channel.

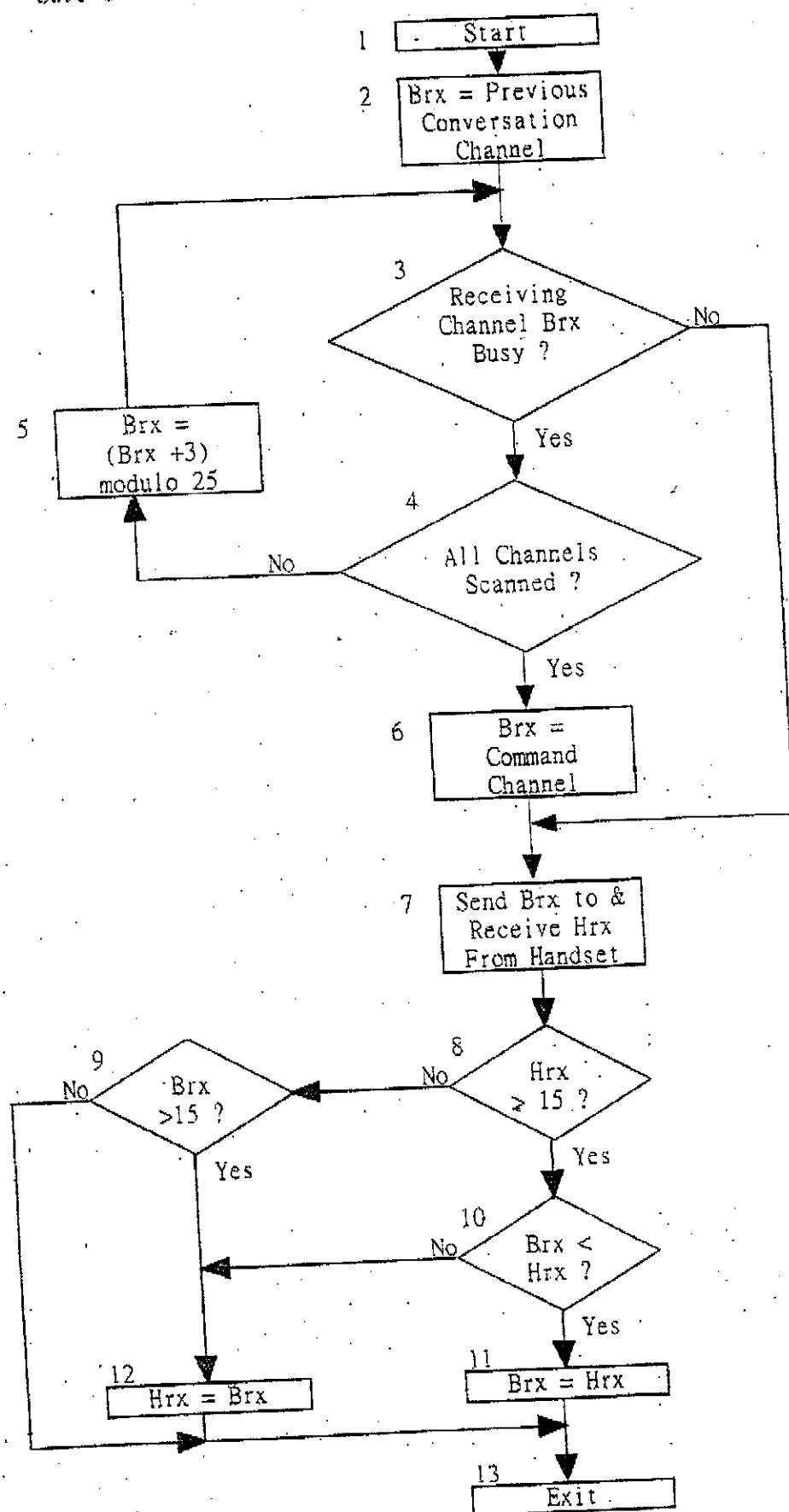
S898 Channel Scanning Flowchart (Handset Talk On)



S898 Channel Scanning Flowchart (Handset Change Channel)



S898 Channel Scanning Flowchart (Base unit Talk On)



S898 Chanel Scanning Flowchart (Base unit Change Channel)

