

Modification Sheet

Jochen Heilemann (DG2IAQ)
German Amateur Radio Station

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Yaesu FT-90R

Version 1.2

VHF-/UHF Mobile Transceiver

Introduction

I started on doing modifications of CB- and HAM-radios since 1980 at the age of 12 years. I mostly wasn't satisfied with the sound of the modulation or reception of my rigs. This is normally founded by restrictions of the local law or by rationalize productions. Only expensive high-class amateur radios have a good sound on their basic state.

Therefore there must be some possibilities for improvements. So I learned the basics of RF electronics on myself and did a lot of modifications until today and I would like to spend my experiences to all other electronic interested people, CB- or HAM-radio stations.

You have to recognize your local laws. Mostly modifications aren't allowed by the local law or by the manufactures. So you do it on your own risk. Also the brandnew HAM rigs are mostly build with a lot of teeny-weeny SMD parts. You have to use special equipment and you also must have a great expert knowledge. So some modifications aren't for only hobby electronic technicians.

So this and all of my Modification Sheet are for education purposes only !

All pix with Fujifilm „FinePix 6800 Zoom“ on resolution „6M/Normal“. Pictures reduced for this publication to 640x480.

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Overview

TX

- C2080 → 22nF parallel more bass
- C2051 → 2,2nF more heights
- C2039 → remove less muddy sound, no re-injection (lowpassfilter)

RX

- C2084 → 100nF parallel more bass
- C2034 → 4,7nF more heights
- C2032 → 4,7nF (or 1nF for more heights) more heights, better re-injection (lowpassfilter)
- C2014 → 2,2nF more heights
- C1244 → 4,7nF more heights (only AM-RX)
- C2003 → 47 μ F parallel more basses out of af amp Q2004
you need a 47 μ F/16V smd capacitor or a very small other one
(very less space between pcb and cover)

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General

Cause of the usage of SMD parts in this transceiver you should do these modifications only by using the service manual and pcb layout to find the correct parts !!

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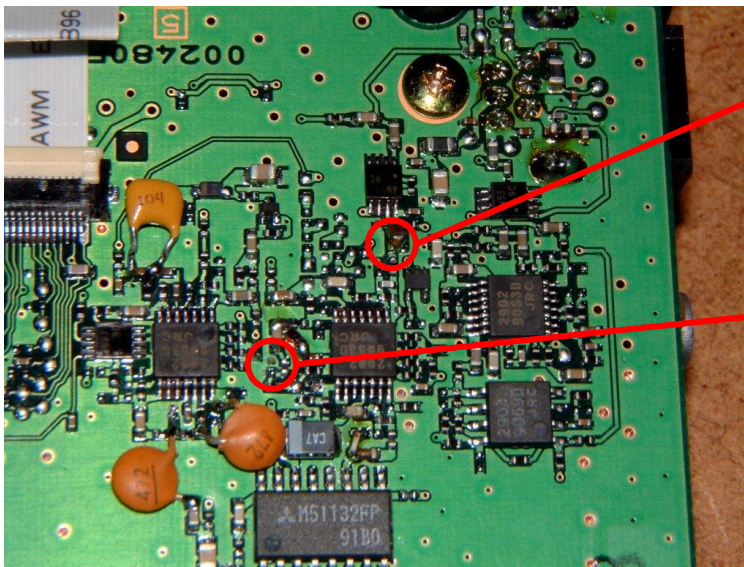
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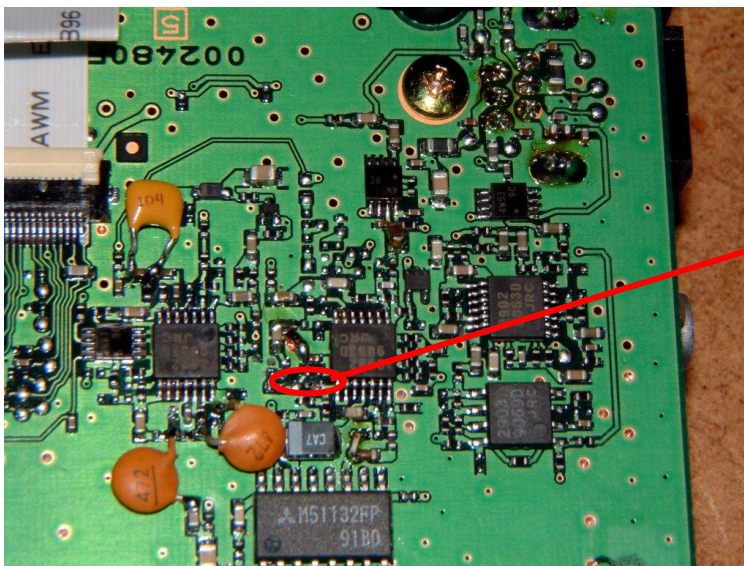
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Transmitter



C2080 → 22nF parallel

C2051 → 2,2nF



C2039 → remove

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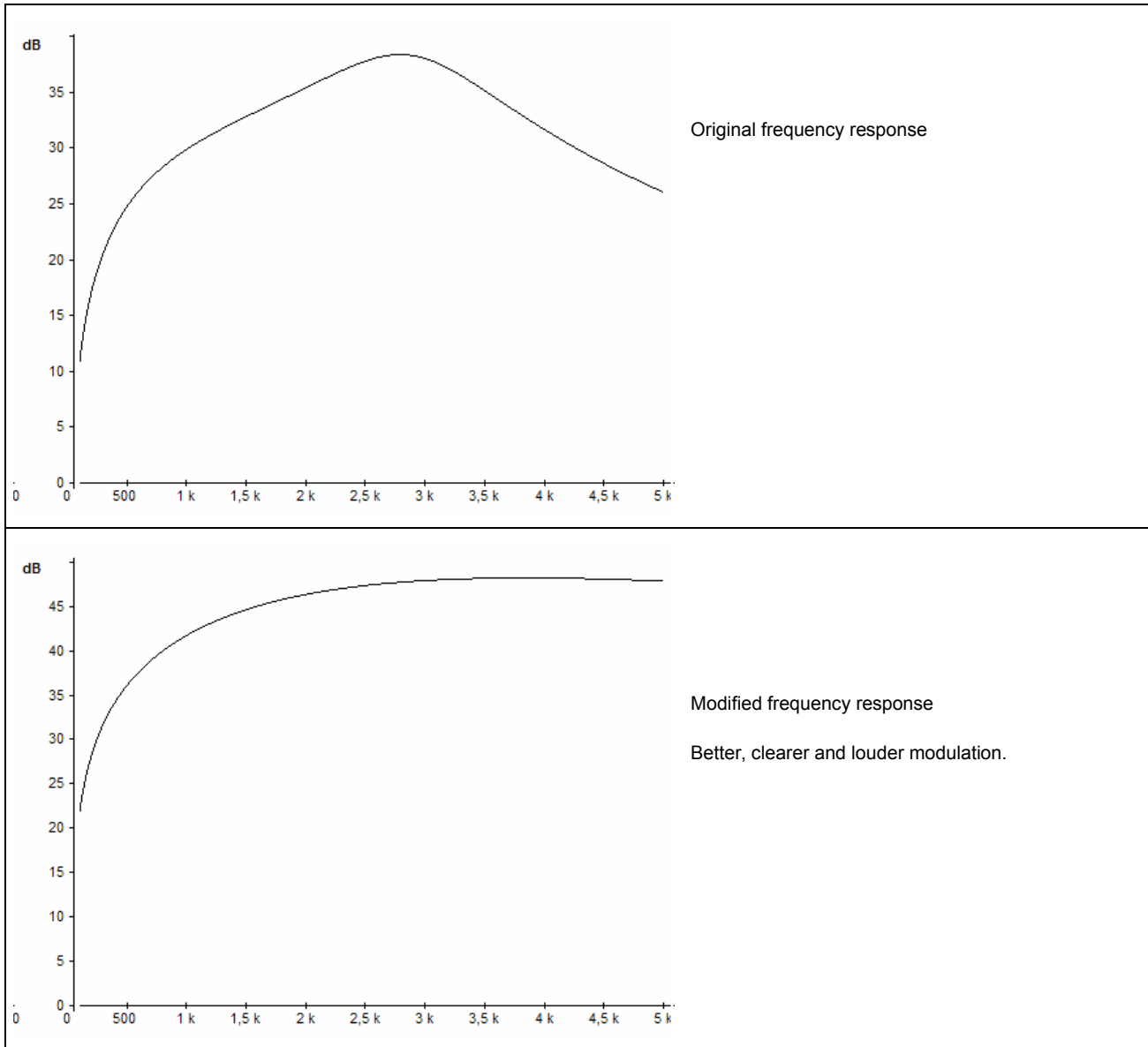
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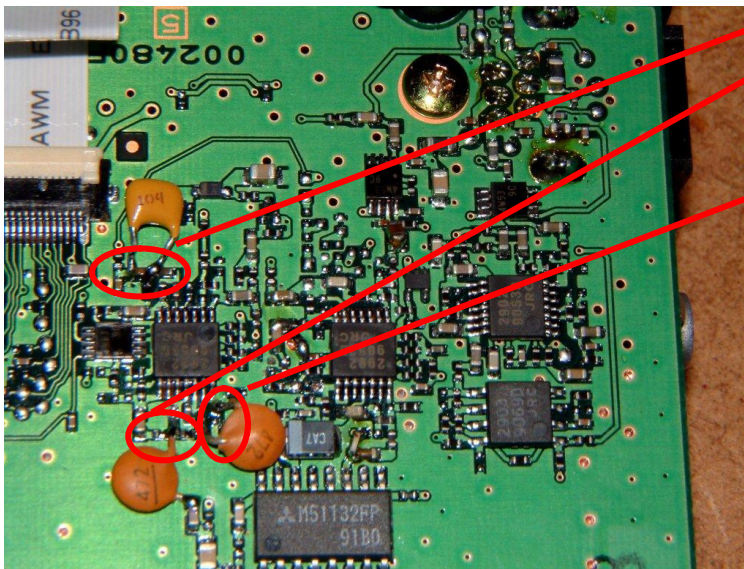
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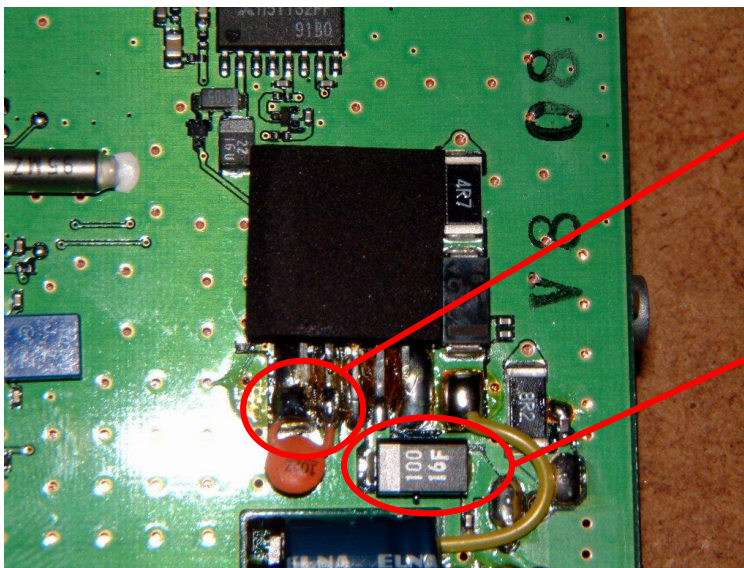
Receiver



C2084 → 100nF parallel

C2034 → 4,7nF

C2032 → 4,7nF



C2014 → 1,8 nF

C2003 → 47μF parallel
(pluspole is on the left side)

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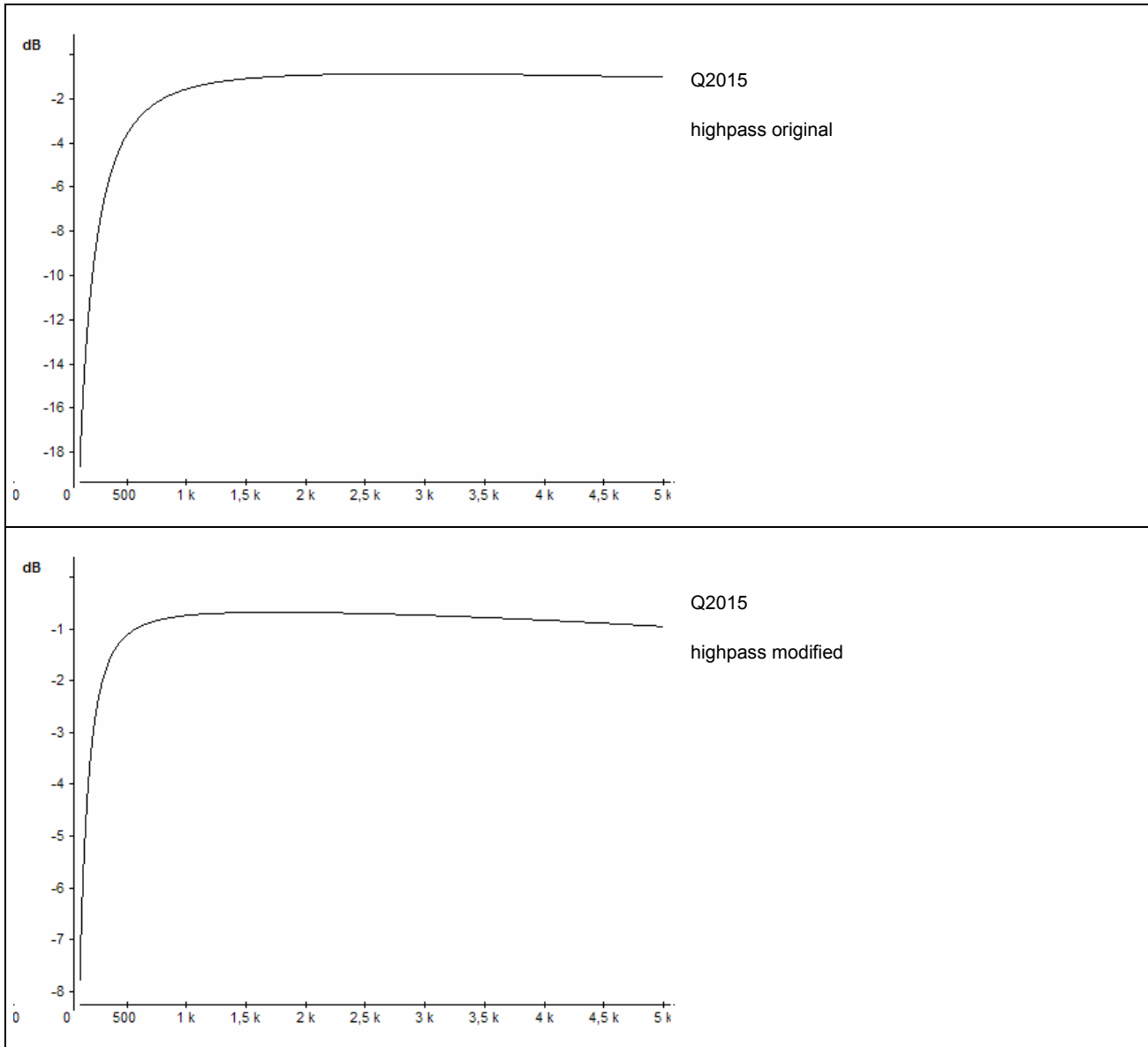
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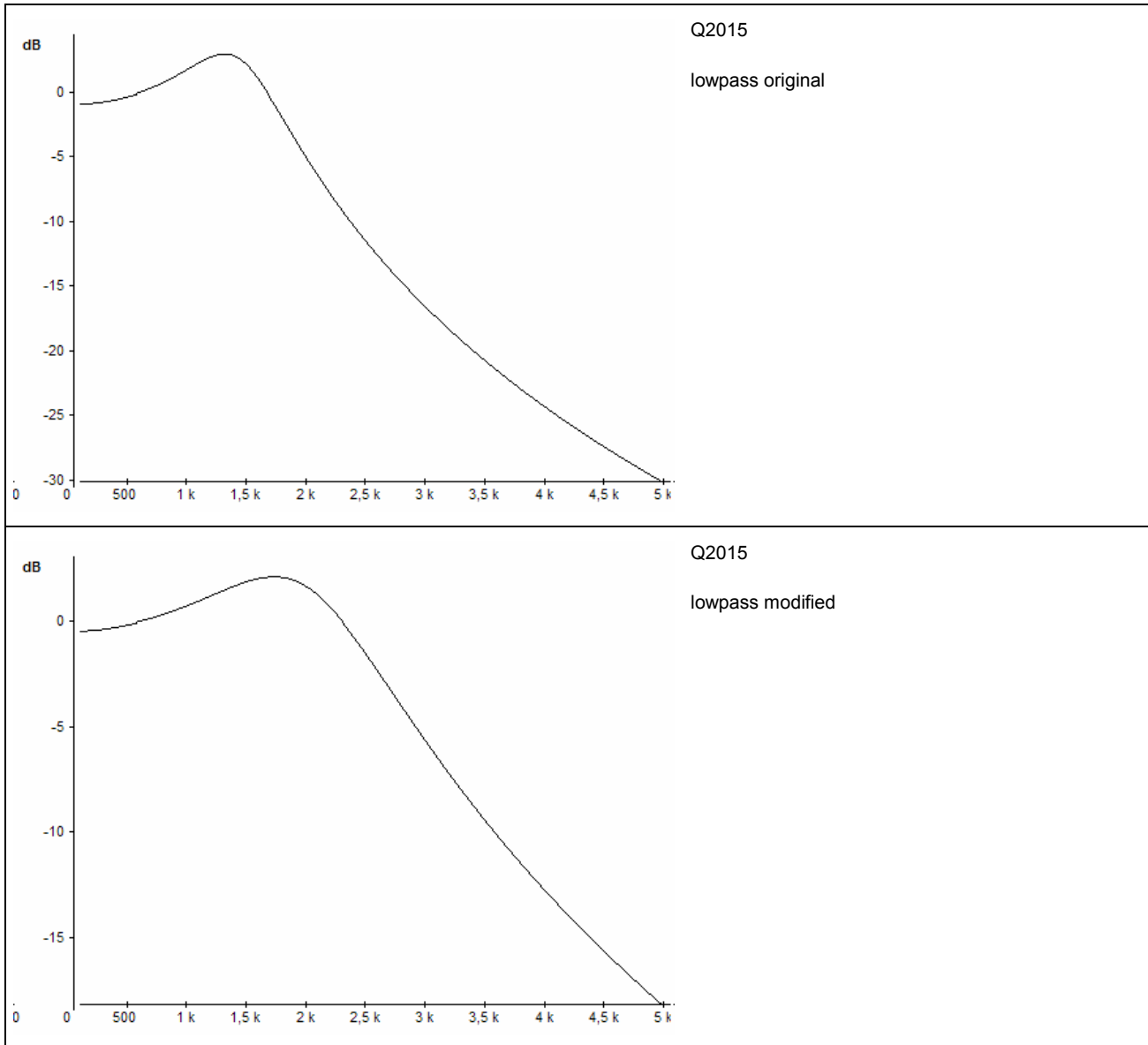
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Alignment

See Service Manual

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Document History

Version 1.0	17.08.2002	
Version 1.1	17.02.2003	C 2014 → 1,8 nF (better, warmer sound instead of 1,0 nF like shown before)
Version 1.2	07.04.2003	C2003 → 47µF parallel (more basses)

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Disclaimer • Disclaimer of liability

This modifications mostly need to be done by a electronic profi who had enough practise and who has knowledge in SMD soldering.
You do the modifications on your own risk !

Radio modifications shown here are provided for properly licensed operators only! The user is solely responsible for making sure that any modifications made to the radio unit must meet all Federal and State Regulations or the Country of use! Liability of damages to any equipment is the sole responsibility of the user! Downloading , viewing, or using any information provided on these pages automatically accepts the user to the terms of this agreement! Modifications are provided for information purposes only!

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If your company would like to provide technical information to be featured on this pages please contact me at: dq2iaq@web.de

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Remarks