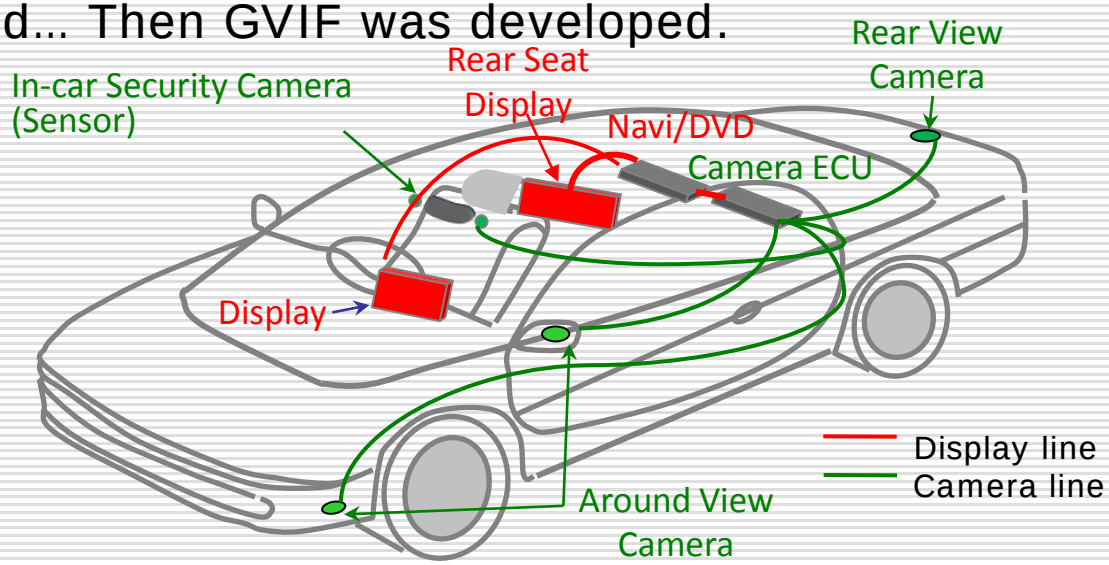
Digital video interface

- Gigabit video interface (GVIF) for multimedia systems

2012-10-22

Background

With the spread of car navigation, in-car entertainment & automotive camera system increased and more useful in-car digital video interface were required… Then GVIF was developed.



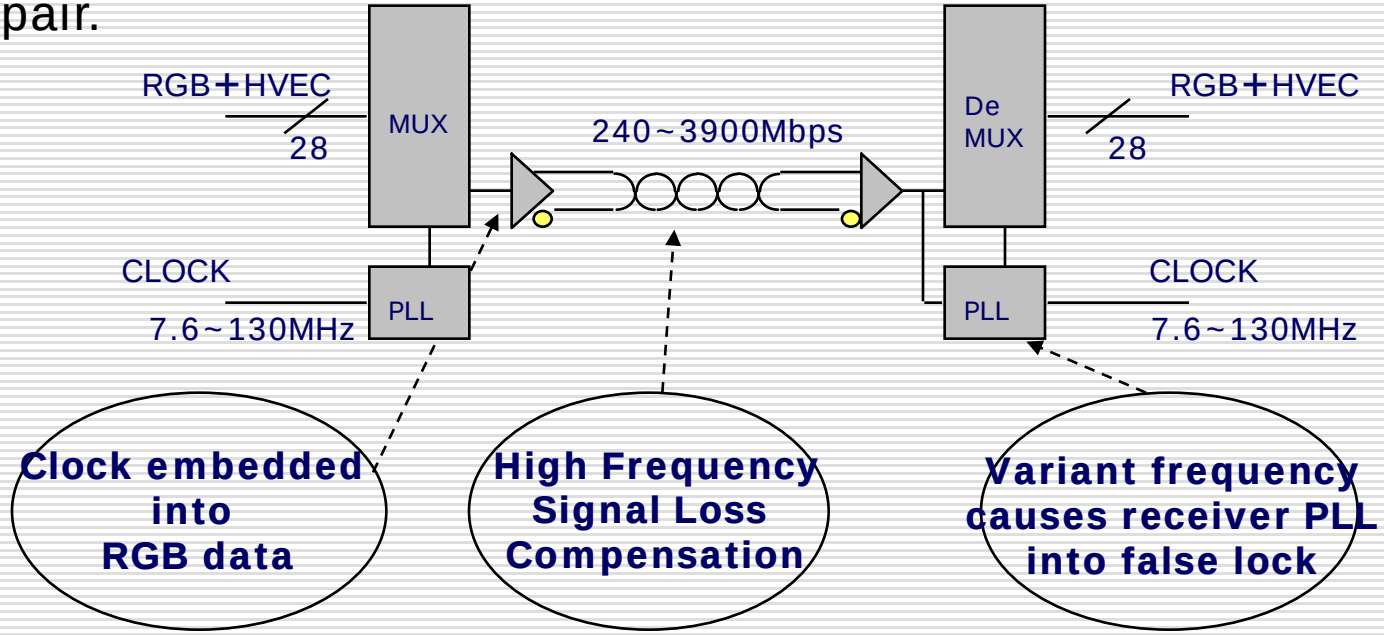
Wire harness	Slim, Light-weight Cable, Long distance with small number of cables
Connector	Small size with robustness, Flexible design
Noise	High noise tolerance, Low noise radiation
Resolution	Display : Current uses W-VGA, but Full-HD(1080p) will be required near future Camera : Higher resolution(Mega pixel) will be required near future
Other	Adopt contents protection technology and world –wide standardization

What is GVIF?

- GVIF stands for Gigabit Video Interface.
- GVIF is a high speed serial video delivery interface developed by Sony in 1996.
- It allows high quality digital transmission of over 1.0 Gbps over a single shielded pair at distances up to 10 to 20 meters depending on the resolution.
- Additionally, the porting of content protection technology (HDCP) makes GVIF the ideal interface for high quality automotive video systems.
- GVIF has a long (10+ year) history of success, introducing into Japanese car market in 2002, and shipping to world wide customers from 2006.
  Now GVIF can be adopted for home consumer products.

Technical Overview

In variant clock rate systems, transmission over a single differential pair is difficult to achieve.
GVIF's unique architecture enables high quality video delivery over a single pair.



GVIF Coding

Adaptive Cable **EQ**

Frequency Negotiation

Purpose/Justification

- GVIF is used in automotive entertainment system to transfer high speed video signal featured by noise resistance ability and light weight cable installation. It will be worth for automotive and electronics industries to standardize the GVIF internationally so as to implement more globally and widely. For example, GVIF is applied to connect between center console and video display in the rear seat of a car.
- GVIF has a potential to be used not only in automotive but also general interface purpose in case that the above technical advantage is needed.

Procedure/Scope

- This GVIF has been already standardized as JEITA CP-6101. The JPNC would like port this into IEC standard.
- This International Standard specifies the following parts of the physical layer of Transmitter(Tx) and Receiver(Rx) for Gigabit video interface called GVIF which enables high speed transfer of video data using single differential pair ;
  - GVIF configuration and transmission line/type
  - Electrical characteristics (Tx, Rx) such as DC and AC electrical characteristics, Encode/Decode and Transition state link
  - Data mapping (input/output) specifications

Schedule

- 2012-12: NP/CDV
- 2013-04: FDIS
- 2013-08: IS

Thank you for your kind attention.